Authorization for Credit Card Transactions

Department of Homeland Security

Form G-1450

How To Fill Out Form G-1450

1. Type or print legibly in black ink.
2. Complete the "**Applicant's/Petitioner's/Requester's Information**," "**Credit Card Billing Information**," and "**Credit Card Information**" sections and sign the authorization. **NOTE:** The credit card must be issued by a U.S. bank.
3. Place your Form G-1450 ON TOP of your application, petition, or request package.

NOTE: Failure to provide the requested information may result in DHS and your financial institution not accepting the payment. DHS cannot process credit card payments without an authorized signature.

NOTE: Please see the USCIS Form G-1450 website for additional information.

We recommend that you print or save a copy of your completed Form G-1450 to review in the future and for your records.

By completing this transaction, you agree that you have paid for a government service and that the filing fee, biometric services fee and all related financial transactions are final and not refundable, regardless of any action DHS takes on an application, petition, or request. You must submit all fees in the exact amounts. DHS will charge your credit card up to the amount you authorize below.

Please refer to the form(s) you are filing for additional information, or you may call the USCIS Customer Contact number at **1-800-375-5283**. For TTY (deaf or hard of hearing) call: **1-800-767-1833**.

Applicant's/Petitioner's/Requester's Information (Full Legal Name)		
Given Name (First Name) Hanna Carolina	Middle Name (if any) N/A	Family Name (Last Name) CAMPOS FERREIRA
Credit Card Billing Information (Credit Card Holder's Name as it Appears on the Card)		
Given Name (First Name) Otavio	Middle Name (if any) H	Family Name (Last Name) SILVA
Credit Card Holder's Billing Address:		
Street Number and Name 5051 La Jolla Blvd	Apt. Ste. Flr. ☒ ☐ ☐	Number 202
City or Town San Diego	State CA	ZIP Code 92109
Credit Card Holder's Signature and Contact Information:		
Credit Card Holder's Signature		
Credit Card Holder's Daytime Telephone Number 5102419336	Credit Card Holder's Email Address otavio@yousalaw.com	
Credit Card Information		
Credit Card Number	**Credit Card Type:** ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover	Authorized Payment Amount $ 715.00
Credit Card Expiration Date (mm/yyyy) CVV Code		

Authorization for Credit Card Transactions

Department of Homeland Security

Form G-1450

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Applicant's/Petitioner's/Requester's Information (Full Legal Name)		
Given Name (First Name) Hanna Carolina	Middle Name (if any) N/A	Family Name (Last Name) CAMPOS FERREIRA
Credit Card Billing Information (Credit Card Holder's Name as it Appears on the Card)		
Given Name (First Name) Otavio	Middle Name (if any) H	Family Name (Last Name) SILVA
Credit Card Holder's Billing Address:		
Street Number and Name 5051 La Jolla Blvd	Apt. Ste. Flr. ☒ ☐ ☐	Number 202
City or Town San Diego	State CA	ZIP Code 92109
Credit Card Holder's Signature and Contact Information:		
Credit Card Holder's Signature		
Credit Card Holder's Daytime Telephone Number 5102419336	Credit Card Holder's Email Address otavio@yousalaw.com	
Credit Card Information		
Credit Card Number	**Credit Card Type:** ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover	Authorized Payment Amount $ 300.00
Credit Card Expiration Date (mm/yyyy) CVV Code		

YOUSA
LAW FIRM

EB-2 IMMIGRANT PETITION
WITH REQUEST FOR A NATIONAL INTEREST WAIVER

Petitioner/Beneficiary: CAMPOS FERREIRA, Hanna Carolina

San Diego, CA - PO Box 90487

TABLE OF CONTENTS

Petitioner: **CAMPOS FERREIRA, Hanna Carolina**
Type of Petition: **I-140, EB-2 National Interest Waiver**
Classification Sought: **Immigration and Nationality Act 203(b)(2)(B)**

Forms	• Form G-1450 in the amount of $715 towards I-140 form filing fee • Form G-1450 in the amount of $300 towards Asylum Program Fee • Form G-1145, E-Notification of Application/Petition Acceptance • Form G-28: Notice of Entry of Appearance as Attorney or Accredited Representative • Form I-140: Immigrant Petition for Alien Worker • Form ETA-9089 – Final Determination: Permanent Employment Certification Approval • Form ETA-9089 – Appendix A: Foreign Worker Information
Petition Cover Letter	• Summary of Cover Letter • Petition/Cover Letter • Exhibit List
Exhibit A	Curriculum Vitae
Exhibit B ELIGIBILITY CRITERIA	**Advanced Degree:** • Bachelor's Degree in Veterinary Medicine • Master of Science (M.Sc.) Diploma – Veterinary Medicine • Doctor of Science (Ph.D.) Diploma – Veterinary Medicine • Postgraduate Specialization Certificate (Graduate-Level) – Veterinary Clinical and Surgical Sciences • Academic Evaluation
Exhibit C NATIONAL INTEREST WAIVER	**C.I – First Prong – Substantial Merit and National Importance:** • Business/Professional Plan • Legal Research about the National Importance **C.II – Second Prong – Well-Positioned to Advance the Proposed Endeavor:** • Professional Licensure, Experience, and Public Service Records: - Professional License and Certification in Veterinary Medicine in Brazil - Employment Record – Academic Leadership and Teaching Position (Faculty of Veterinary Medicine) and Brazilian Work and Social Security Card (CTPS) - Official Declaration of Federal Public Service Time – Ministry of Agriculture (including leadership function) - Professional Experience – Municipal Government Veterinary Officer (City of Diamantina) - Official Military Incorporation Ordinance – Brazilian Navy • Academic and Research Qualifications:

- Official CAPES Declaration Confirming Doctoral Research Fellowship at the University of Minnesota
- Scientific Research Fellowship – Undergraduate Research Scholarship (PIBIC/UFV)
- Certificate of Completion – Italian Language and Culture Course (84 Hours)
- Courses of English

- Research, Publications, and Scientific Contributions:
  - Research in Veterinary Science – In vitro inhibition of canine distemper virus by flavonoids and phenolic acids: Implications of structural differences for antiviral design
  - Surveillance of Neutralizing Antibodies Against Bovine Herpesvirus 1 in Cattle Herds from Different Farming Property Systems
  - Detection of Important Peptides for Bovine Cysticercosis Diagnosis in Immunoblot
  - Antiviral Potential of Quercetin in Canine Parvovirus
  - Presence of the Viral DNA in Oophorous Cumulus Complexes of Cows Clinically Healthy and Naturally Infected by Bovine Herpesvirus 1 (BoHV1)
  - Latent Bovine Herpesvirus 1 and 5 in Milk from Naturally Infected Dairy Cattle
  - Apoptosis in the Late Replication Phase of Bovine Alphaherpesvirus 1 in Experimentally Infected Calves
  - Molecular Methodology for the Detection of the Leishmania Genus in Different Biological Samples Extracted from Dogs
  - Published Book – Veterinary Microbiology: Practical Applications
- Academic Leadership, Teaching, Extension, and Professional Recognition:
  - Academic Leadership and Extension Project Participation Documentation
  - Certificate of Courses Taught – University Extension Programs (RAEX/UFV)
  - University Extension Activity Participation – Federal University of Viçosa (UFV)
  - Professional Recognition and Academic Engagement Documentation
- Conference, Reviewing, Examination, and Government Engagement Activities:
  - Conference Participation and Research Presentation Certificates
  - Certificate of Participation as Speaker – III Congress on Innovation, Technology and Public Sustainability (CINTECS)
  - Ad Hoc Reviewer and Scientific Event Participation Certificates

	- Service on Academic Examination Committees (Thesis and Residency Boards) - International Government Audit Participation • Professional Association Membership: - Professional Association Membership – Brazilian College of Veterinary Hygienists of Food (CBMVHA) • Letters of Support: - Dr. José de Oliveira Pinto - Dr. Ernani Paulino do Lago - Marcelo Andrade Botelho Mesquita, MSc • Evidence of High Salary and Financial Feasibility: - Payroll Statement - Tax Return 2024 and 2025 - Evidence of Viability of Business Plan
Exhibit D PERSONAL DOCUMENTS	• Hanna Carolina Campos Ferreira's Passport • Hanna Carolina Campos Ferreira's Birth Certificate • Hanna Carolina Campos Ferreira's Copy of I-94 • Hanna Carolina Campos Ferreira's Evidence of Legal Status

e-Notification of Application/Petition Acceptance

Department of Homeland Security
U.S. Citizenship and Immigration Services

USCIS
Form G-1145

What Is the Purpose of This Form?

Use this form to request an electronic notification (e-Notification) when U.S. Citizenship and Immigration Services accepts your immigration application. This service is available for applications filed at a USCIS Lockbox facility.

General Information

Complete the information below and clip this form to the first page of your application package. You will receive one e-mail and/or text message for each form you are filing.

We will send the e-Notification within 24 hours after we accept your application. Domestic customers will receive an e-mail and/or text message; overseas customers will only receive an e-mail. Undeliverable e-Notifications cannot be resent.

The e-mail or text message will display your receipt number and tell you how to get updated case status information. It will not include any personal information. The e-Notification does not grant any type of status or benefit; rather it is provided as a convenience to customers.

USCIS will also mail you a receipt notice (I-797C), which you will receive within 10 days after your application has been accepted; use this notice as proof of your pending application or petition.

USCIS Privacy Act Statement

AUTHORITIES: The information requested on this form is collected pursuant to section 103(a) of the Immigration and Nationality Act, as amended INA section 101, et seq.

PURPOSE: The primary purpose for providing the information on this form is to request an electronic notification when USCIS accepts immigration form. The information you provide will be used to send you a text and/or email message.

DISCLOSURE: The information you provide is voluntary. However, failure to provide the requested information may prevent USCIS from providing you a text and/or email message receipting your immigration form.

ROUTINE USES: The information provided on this form will be used by and disclosed to DHS personnel and contractors in accordance with approved routine uses, as described in the associated published system of records notices [**DHS/USCIS-007 - Benefits Information System and DHS/USCIS-001 - Alien File (A-File) and Central Index System (CIS)**, which can be found at **www.dhs.gov/privacy**]. The information may also be made available, as appropriate for law enforcement purposes or in the interest of national security.

Complete this form and clip it on top of the first page of your immigration form(s).

Applicant/Petitioner Full Last Name	Applicant/Petitioner Full First Name	Applicant/Petitioner Full Middle Name
CAMPOS FERREIRA	**Hanna Carolina**	**N/A**

Email Address	Mobile Phone Number (Text Message)
hannaccf@gmail.com	

Notice of Entry of Appearance as Attorney or Accredited Representative

Department of Homeland Security

DHS Form G-28
OMB No. 1615-0105
Expires 05/31/2021

Part 1. Information About Attorney or Accredited Representative

1. USCIS Online Account Number (if any)

► 0 0 7 4 9 2 6 2 5 4 3 8

Name of Attorney or Accredited Representative

2.a. Family Name (Last Name): HAVERROTH SILVA

2.b. Given Name (First Name): Otavio

2.c. Middle Name: N/A

Address of Attorney or Accredited Representative

3.a. Street Number and Name: PO Box 90487

3.b. ☐ Apt. ☐ Ste. ☐ Flr. N/A

3.c. City or Town: San Diego

3.d. State: CA **3.e.** ZIP Code: 92169

3.f. Province: N/A

3.g. Postal Code: N/A

3.h. Country: USA

Contact Information of Attorney or Accredited Representative

4. Daytime Telephone Number: 5102419336

5. Mobile Telephone Number (if any): 5102419336

6. Email Address (if any): otavio@legalhs.com

7. Fax Number (if any): N/A

Part 2. Eligibility Information for Attorney or Accredited Representative

Select **all applicable** items.

1.a. ☒ I am an attorney eligible to practice law in, and a member in good standing of, the bar of the highest courts of the following states, possessions, territories, commonwealths, or the District of Columbia. If you need extra space to complete this section, use the space provided in **Part 6. Additional Information**.

Licensing Authority: California

1.b. Bar Number (if applicable): 343486

1.c. I (select **only one** box) ☒ am not ☐ am subject to any order suspending, enjoining, restraining, disbarring, or otherwise restricting me in the practice of law. If you are subject to any orders, use the space provided in **Part 6. Additional Information** to provide an explanation.

1.d. Name of Law Firm or Organization (if applicable): HS Law Corp

2.a. ☐ I am an accredited representative of the following qualified nonprofit religious, charitable, social service, or similar organization established in the United States and recognized by the Department of Justice in accordance with 8 CFR part 1292.

2.b. Name of Recognized Organization: N/A

2.c. Date of Accreditation (mm/dd/yyyy): N/A

3. ☐ I am associated with N/A, the attorney or accredited representative of record who previously filed Form G-28 in this case, and my appearance as an attorney or accredited representative for a limited purpose is at his or her request.

4.a. ☐ I am a law student or law graduate working under the direct supervision of the attorney or accredited representative of record on this form in accordance with the requirements in 8 CFR 292.1(a)(2).

4.b. Name of Law Student or Law Graduate: N/A

Part 3. Notice of Appearance as Attorney or Accredited Representative

If you need extra space to complete this section, use the space provided in **Part 6. Additional Information**.

This appearance relates to immigration matters before (select **only one** box):

1.a. ☒ U.S. Citizenship and Immigration Services (USCIS)

1.b. List the form numbers or specific matter in which appearance is entered.

I-140 ETA-9089

2.a. ☐ U.S. Immigration and Customs Enforcement (ICE)

2.b. List the specific matter in which appearance is entered.

N/A

3.a. ☐ U.S. Customs and Border Protection (CBP)

3.b. List the specific matter in which appearance is entered.

N/A

4. Receipt Number (if any)

► N/A

5. I enter my appearance as an attorney or accredited representative at the request of the (select **only one** box):

☐ Applicant ☒ Petitioner ☐ Requestor
☐ Beneficiary/Derivative ☐ Respondent (ICE, CBP)

Information About Client (Applicant, Petitioner, Requestor, Beneficiary or Derivative, Respondent, or Authorized Signatory for an Entity)

6.a. Family Name (Last Name) CAMPOS FERREIRA

6.b. Given Name (First Name) Hanna Carolina

6.c. Middle Name N/A

7.a. Name of Entity (if applicable)

N/A

7.b. Title of Authorized Signatory for Entity (if applicable)

N/A

8. Client's USCIS Online Account Number (if any)

► N/A

9. Client's Alien Registration Number (A-Number) (if any)

► A- N/A

Client's Contact Information

10. Daytime Telephone Number

+55 31 996424522

11. Mobile Telephone Number (if any)

+55 31 996424522

12. Email Address (if any)

hannaccf@gmail.com

Mailing Address of Client

NOTE: Provide the client's mailing address. **Do not** provide the business mailing address of the attorney or accredited representative **unless** it serves as the safe mailing address on the application or petition being filed with this Form G-28.

13.a. Street Number and Name PO Box 90487

13.b. ☐ Apt. ☐ Ste. ☐ Flr. N/A

13.c. City or Town San Diego

13.d. State CA **13.e.** ZIP Code 92169

13.f. Province N/A

13.g. Postal Code N/A

13.h. Country

USA

Part 4. Client's Consent to Representation and Signature

Consent to Representation and Release of Information

I have requested the representation of and consented to being represented by the attorney or accredited representative named in **Part 1.** of this form. According to the Privacy Act of 1974 and U.S. Department of Homeland Security (DHS) policy, I also consent to the disclosure to the named attorney or accredited representative of any records pertaining to me that appear in any system of records of USCIS, ICE, or CBP.

Part 4. Client's Consent to Representation and Signature (continued)

Options Regarding Receipt of USCIS Notices and Documents

USCIS will send notices to both a represented party (the client) and his, her, or its attorney or accredited representative either through mail or electronic delivery. USCIS will send all secure identity documents and Travel Documents to the client's U.S. mailing address.

If you want to have notices and/or secure identity documents sent to your attorney or accredited representative of record rather than to you, please select **all applicable** items below. You may change these elections through written notice to USCIS.

1.a. ☒ I request that USCIS send original notices on an application or petition to the business address of my attorney or accredited representative as listed in this form.

1.b. ☒ I request that USCIS send any secure identity document (Permanent Resident Card, Employment Authorization Document, or Travel Document) that I receive to the U.S. business address of my attorney or accredited representative (or to a designated military or diplomatic address in a foreign country (if permitted)).

NOTE: If your notice contains Form I-94, Arrival-Departure Record, USCIS will send the notice to the U.S. business address of your attorney or accredited representative. If you would rather have your Form I-94 sent directly to you, select **Item Number 1.c.**

1.c. ☐ I request that USCIS send my notice containing Form I-94 to me at my U.S. mailing address.

Signature of Client or Authorized Signatory for an Entity

2.a. Signature of Client or Authorized Signatory for an Entity

Hanna Carolina Campos Ferreira

2.b. Date of Signature (mm/dd/yyyy) 10/01/2026

Part 5. Signature of Attorney or Accredited Representative

I have read and understand the regulations and conditions contained in 8 CFR 103.2 and 292 governing appearances and representation before DHS. I declare under penalty of perjury under the laws of the United States that the information I have provided on this form is true and correct.

1. a. Signature of Attorney or Accredited Representative

1.b. Date of Signature (mm/dd/yyyy) 10/01/2026

2.a. Signature of Law Student or Law Graduate

N/A

2.b. Date of Signature (mm/dd/yyyy) N/A

Part 6. Additional Information

If you need extra space to provide any additional information within this form, use the space below. If you need more space than what is provided, you may make copies of this page to complete and file with this form or attach a separate sheet of paper. Type or print your name at the top of each sheet; indicate the **Page Number**, **Part Number**, and **Item Number** to which your answer refers; and sign and date each sheet.

1.a Family Name (Last Name): CAMPOS FERREIRA

1.b. Given Name (First Name): Hanna Carolina

1.c. Middle Name: N/A

2.a. Page Number: N/A **2.b.** Part Number: N/A **2.c.** Item Number: N/A

2.d. N/A

3.a. Page Number: N/A **3.b.** Part Number: N/A **3.c.** Item Number: N/A

3.d. N/A

4.a. Page Number: N/A **4.b.** Part Number: N/A **4.c.** Item Number: N/A

4.d. N/A

5.a. Page Number: N/A **5.b.** Part Number: N/A **5.c.** Item Number: N/A

5.d. N/A

6.a. Page Number: N/A **6.b.** Part Number: N/A **6.c.** Item Number: N/A

6.d. N/A

Immigrant Petition for Alien Workers

Department of Homeland Security
U.S. Citizenship and Immigration Services

USCIS
Form I-140
OMB No. 1615-0015
Expires 02/28/2027

For USCIS Use Only	Fee Stamp	Priority Date	Consulate	Action Block

Classification

- ☐ 203(b)(1)(A) Alien of Extraordinary Ability
- ☐ 203(b)(1)(B) Outstanding Professor or Researcher
- ☐ 203(b)(1)(C) Multinational Executive or Manager
- ☐ 203(b)(2) Member of Professions with Advanced Degree/Exceptional Ability
- ☐ 203(b)(3)(A)(i) Skilled Worker
- ☐ 203(b)(3)(A)(ii) Professional
- ☐ 203(b)(3)(A)(iii) Other Worker

Certification

- ☐ National Interest Waiver (NIW)
- ☐ Schedule A, Group I
- ☐ Schedule A, Group II

Remarks

To be completed by an Attorney or Accredited Representative (if any).	☒ Select this box if Form G-28 or Form G-28I is attached.	Attorney State Bar Number (if applicable)	Attorney or Accredited Representative USCIS Online Account Number (if any)
		343486	007492625438

► **START HERE - Type or print in black ink.**

Part 1. Information About the Person or Organization Filing This Petition

If an individual is filing this petition, answer **Item Numbers 1.a. - 1.c.** If a company or organization is filing this petition, answer **Item Number 2.**

1.a. Family Name (Last Name): CAMPOS FERREIRA

1.b. Given Name (First Name): Hanna Carolina

1.c. Middle Name: N/A

2. Company or Organization Name: N/A

Mailing Address

3.a. In Care Of Name: Otavio Haverroth Silva

3.b. Street Number and Name: Po Box 90487

3.c. ☐ Apt. ☐ Ste. ☐ Flr. N/A

3.d. City or Town: San Diego

3.e. State: CA **3.f.** ZIP Code: 92169

3.g. Province: N/A

3.h. Postal Code: N/A

3.i. Country: USA

Other Information

4. IRS Employer Identification Number (EIN) ► N/A

5. Are you a nonprofit organized as tax exempt or a governmental research organization? ☐ Yes ☒ No

6. Do you currently employ a total of 25 or fewer full-time equivalent employees in the United States, including all affiliates or subsidiaries of this company/organization? ☒ Yes ☐ No

7. U.S. Social Security Number (SSN) (if any) ► N/A

8. USCIS Online Account Number (if any) ► N/A

Part 2. Petition Type

This petition is being filed for (select **only one** box):

1.a. ☐ An alien of extraordinary ability.

1.b. ☐ An outstanding professor or researcher.

1.c. ☐ A multinational executive or manager.

1.d. ☐ A member of the professions holding an advanced degree or an alien of exceptional ability (who is **NOT** seeking a National Interest Waiver (NIW)).

1.e. ☐ A professional (at a minimum, possessing a bachelor's degree or a foreign degree equivalent to a U.S. bachelor's degree).

Part 2. Petition Type (continued)

1.f. ☐ A skilled worker (requiring at least two years of specialized training or experience).

1.g. ☐ Any other worker (requiring less than two years of training or experience).

1.h. ☒ An alien applying for an NIW (who **IS** a member of the professions holding an advanced degree or an alien of exceptional ability).

This petition is being filed (select **only one** box):

2.a. ☐ To amend a previously filed petition.

Previous Petition Receipt Number

► N/A

2.b. ☐ For the Schedule A, Group I or II designation.

Part 3. Information About the Person for Whom You Are Filing

1.a. Family Name (Last Name): CAMPOS FERREIRA

1.b. Given Name (First Name): Hanna Carolina

1.c. Middle Name: N/A

Mailing Address

2.a. In Care Of Name: Otavio Haverroth Silva

2.b. Street Number and Name: Po Box 90487

2.c. ☐ Apt. ☐ Ste. ☐ Flr. N/A

2.d. City or Town: San Diego

2.e. State: CA **2.f.** ZIP Code: 92169

2.g. Province: N/A

2.h. Postal Code: N/A

2.i. Country: USA

Other Information

3. Date of Birth (mm/dd/yyyy): 09/25/1984

4. City/Town/Village of Birth: Januaria

5. State or Province of Birth: Minas Gerais

6. Country of Birth: Brazil

7. Country of Citizenship or Nationality: Brazil

8. Alien Registration Number (A-Number) (if any)

► A- N/A

9. U.S. SSN (if any) ► N/A

Information About His or Her Last Arrival in the United States

If the person for whom you are filing is in the United States, provide the following information.

10. Date of Last Arrival (mm/dd/yyyy): N/A

11.a. Form I-94 Arrival-Departure Record Number

► N/A

11.b. Expiration Date of Authorized Stay Shown on Form I-94 (mm/dd/yyyy): N/A

11.c. Status on Form I-94 (for example, class of admission, or paroled, if paroled): N/A

12. Passport Number: N/A

13. Travel Document Number: N/A

14. Country of Issuance for Passport or Travel Document: N/A

15. Expiration Date for Passport or Travel Document (mm/dd/yyyy): N/A

Part 4. Processing Information

Provide the following information for the person named in **Part 3.** (select **only one** box):

1.a. ☒ Alien will apply for a visa abroad at a U.S. Embassy or U.S. Consulate at:

1.b. City or Town: Rio de Janeiro

1.c. Country: Brazil

2.a. ☐ Alien is in the United States and will apply for adjustment of status to that of lawful permanent resident.

Part 4. Processing Information (continued)

2.b. Alien's current country of residence or, if now in the United States, last country of permanent residence abroad.

Brazil

If you provided a United States address in **Part 3.**, provide the person's foreign address in **Item Numbers 3.a. - 3.f.**:

3.a. Street Number and Name: 1090 Tito Versiane dos Anjos

3.b. ☒ Apt. ☐ Ste. ☐ Flr. 101

3.c. City or Town: Montes Claros

3.d. Province: Minas Gerais

3.e. Postal Code: 39403217

3.f. Country: Brazil

If the person's native alphabet is other than Roman letters, type or print the person's foreign name and address in the native alphabet in **Item Numbers 4.a. - 5.g.**:

4.a. Family Name (Last Name): N/A

4.b. Given Name (First Name): N/A

4.c. Middle Name: N/A

Mailing Address

5.a. In Care Of Name: N/A

5.b. Street Number and Name: N/A

5.c. ☐ Apt. ☐ Ste. ☐ Flr. N/A

5.d. City or Town: N/A

5.e. Province: N/A

5.f. Postal Code: N/A

5.g. Country: N/A

If you answer "Yes" to **Item Numbers 6.a. - 10.**, provide the case number, office location, date of decision, and disposition of the decision in the space provided in **Part 11. Additional Information**.

6.a. Are you filing any other petitions or applications with this Form I-140? ☐ Yes ☒ No

6.b. If you answered "Yes" **to Item Number 6.a.**, select all applicable boxes:

- ☐ Form I-485
- ☐ Form I-131
- ☐ Form I-765
- ☐ Other (Provide an explanation in **Part 11. Additional Information**.)

7. Is the person for whom you are filing in removal proceedings? ☐ Yes ☒ No

8. Has any immigrant visa petition ever been filed by or on behalf of this person? ☐ Yes ☒ No

9. Are you filing this petition without an original labor certification because the original labor certification was previously submitted in support of another Form I-140? ☐ Yes ☒ No

10. If you are filing this petition without an original labor certification, are you requesting that U.S. Citizenship and Immigration Services (USCIS) request a duplicate labor certification from the Department of Labor (DOL)? ☐ Yes ☐ No

Part 5. Additional Information About the Petitioner

Type of petitioner (select **only one** box):

1.a. ☐ Employer

1.b. ☒ Self

1.c. ☐ Other (For example, Lawful Permanent Resident, U.S. citizen or any other person filing on behalf of the alien)

If a company or an organization is filing this petition, provide the following information:

2. Type of Business: N/A

3. Date Established (mm/dd/yyyy): N/A

4. Current Number of U.S. Employees: N/A

5. Gross Annual Income $ N/A

6. Net Annual Income $ N/A

7. NAICS Code ▶ N/A

8. Labor Certification DOL Case Number: N/A

Part 5. Additional Information About the Petitioner (continued)

9. Labor Certification DOL Filing Date (mm/dd/yyyy)

N/A

10. Labor Certification Expiration Date (mm/dd/yyyy)

N/A

If an individual is filing this petition, provide the following information.

11. Occupation

Veterinarian

12. Annual Income $ N/A

Part 6. Basic Information About the Proposed Employment

1. Job Title

General and Operations Manager

2. SOC Code ▶ 11 - 1021

3. Nontechnical Job Description

See page 8.

4. Is this a full-time position? ☒ Yes ☐ No

5. If the answer to **Item Number 4.** is "No," how many hours per week for the position?

6. Is this a permanent position? ☒ Yes ☐ No

7. Is this a new position? ☒ Yes ☐ No

8. Wages (Specify hour, week, month, or year):

$ 98,000.00 per year

Worksite Location

For **Item Numbers 9.a. - 9.e.**, provide the address where the person will work if different from the address provided in **Part 1.**

9.a. Street Number and Name: To be determined

9.b. ☐ Apt. ☐ Ste. ☐ Flr. TBD

9.c. City or Town: Miami

9.d. State: FL **9.e.** ZIP Code: TBD

Part 7. Information About the Spouse and All Children of the Person for Whom You Are Filing

For **Part 7.**, provide information on the spouse and all children related to the individual for whom you are filing this petition. Also, note if the individual will apply for a visa abroad or adjustment of status as the dependent of the individual for whom the petition is filed. If you need extra space to provide information about additional family members, use the space provided in **Part 11. Additional Information**.

Person 1

1.a. Family Name (Last Name): N/A

1.b. Given Name (First Name): N/A

1.c. Middle Name: N/A

2. Date of Birth (mm/dd/yyyy): N/A

3. Country of Birth: N/A

4. Relationship: N/A

5. Is he or she applying for adjustment of status? ☐ Yes ☐ No

6. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Person 2

7.a. Family Name (Last Name): N/A

7.b. Given Name (First Name): N/A

7.c. Middle Name: N/A

8. Date of Birth (mm/dd/yyyy): N/A

9. Country of Birth: N/A

10. Relationship: N/A

11. Is he or she applying for adjustment of status? ☐ Yes ☐ No

12. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Part 7. Information About Spouse and All Children of the Person for Whom You Are Filing (continued)

Person 3

13.a. Family Name (Last Name) N/A

13.b. Given Name (First Name) N/A

13.c. Middle Name N/A

14. Date of Birth (mm/dd/yyyy) N/A

15. Country of Birth
N/A

16. Relationship N/A

17. Is he or she applying for adjustment of status? ☐ Yes ☐ No

18. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Person 4

19.a. Family Name (Last Name) N/A

19.b. Given Name (First Name) N/A

19.c. Middle Name N/A

20. Date of Birth (mm/dd/yyyy) N/A

21. Country of Birth
N/A

22. Relationship N/A

23. Is he or she applying for adjustment of status? ☐ Yes ☐ No

24. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Person 5

25.a. Family Name (Last Name) N/A

25.b. Given Name (First Name) N/A

25.c. Middle Name N/A

26. Date of Birth (mm/dd/yyyy) N/A

27. Country of Birth
N/A

28. Relationship N/A

29. Is he or she applying for adjustment of status? ☐ Yes ☐ No

30. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Person 6

31.a. Family Name (Last Name) N/A

31.b. Given Name (First Name) N/A

31.c. Middle Name N/A

32. Date of Birth (mm/dd/yyyy) N/A

33. Country of Birth
N/A

34. Relationship N/A

35. Is he or she applying for adjustment of status? ☐ Yes ☐ No

36. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Part 8. Contact Information, Certification, and Signature of the Petitioner or Authorized Signatory

Petitioner or Authorized Signatory's Contact Information

1.a. Petitioner's or Authorized Signatory's Family Name (Last Name)

CAMPOS FERREIRA

1.b. Petitioner's or Authorized Signatory's Given Name (First Name)

Hanna Carolina

2. Petitioner's or Authorized Signatory's Title

N/A

3. Petitioner's or Authorized Signatory's Daytime Telephone Number

+55 31 996424522

4. Petitioner's or Authorized Signatory's Mobile Telephone Number (if any)

+55 31 996424522

5. Petitioner's or Authorized Signatory's Email Address (if any)

hannaccf@gmail.com

Petitioner's or Authorized Signatory's Certification and Signature

If filing this petition on behalf of an organization, I certify that I am authorized to do so by the organization:

a. I reviewed and provided or authorized all of the responses and information in my petition;

b. I understood all of the responses and information contained in, and submitted with, my petition; and

c. All of the responses and information were complete, true, and correct at the time of filing

Furthermore, I authorize the release of any information from any and all of my records as authorized signatory and the petitioner's records that USCIS may need to determine the petitioner's eligibility for an immigration request and to other entities and persons where necessary for the administration and enforcement of U.S. immigration law.

6.a. Petitioner's or Authorized Signatory's Signature

Hanna Carolina Campos Ferreira

6.b. Date of Signature (mm/dd/yyyy) 10/01/2026

Part 9. Interpreter's Contact Information, Certification, and Signature

Interpreter's Full Name

1.a. Interpreter's Family Name (Last Name)

N/A

1.b. Interpreter's Given Name (First Name)

N/A

2. Interpreter's Business or Organization Name

N/A

Interpreter's Contact Information

3. Interpreter's Daytime Telephone Number

N/A

4. Interpreter's Mobile Telephone Number (if any)

N/A

5. Interpreter's Email Address (if any)

N/A

Interpreter's Certification and Signature

I certify, under penalty of perjury, that I am fluent in English and N/A, and I have interpreted every question on the petition and Instructions and interpreted the petitioner's or authorized signatory's answers to the questions in that language, and the petitioner or authorized signatory informed me that they understood every instruction, question, and answer on the petition.

6.a. Interpreter's Signature

N/A

6.b. Date of Signature (mm/dd/yyyy) N/A

Part 10. Contact Information, Certification, and Signature of the Person Preparing this Petition, if Other Than the Petitioner or Authorized Signatory

Preparer's Full Name

1. Preparer's Family Name (Last Name)

HAVERROTH SILVA

Preparer's Given Name (First Name)

Otavio

2. Preparer's Business or Organization Name

HS Law Corp

Preparer's Contact Information

3. Preparer's Daytime Telephone Number

5102419336

4. Preparer's Mobile Telephone Number (if any)

5102419336

5. Preparer's Email Address (if any)

otavio@legalhs.com

Preparer's Certification and Signature

I certify, under penalty of perjury, that I prepared this petition for the petitioner or authorized signatory at their request and with express consent and that all of the responses and information contained in and submitted with the petition are complete, true, and correct and reflects only information provided by the petitioner or authorized signatory. The petitioner or authorized signatory reviewed the responses and information and informed me that they understand the responses and information in or submitted with the petition.

6. Preparer's Signature



Date of Signature (mm/dd/yyyy) 10/01/2026

Part 11. Additional Information

If you need extra space to provide any additional information within this petition, use the space below. If you need more space than what is provided, you may make copies of this page to complete and file with this petition or attach a separate sheet of paper. Type or print your name and A-Number (if any) at the top of each sheet; indicate the **Page Number**, **Part Number**, and **Item Number** to which your answer refers; and sign and date each sheet.

1. Family Name (Last Name): CAMPOS FERREIRA

Given Name (First Name): Hanna Carolina

Middle Name: N/A

2. IRS EIN ► N/A

3.

Page Number	Part Number	Item Number
4	6	3

Oversee operations and business strategy. Supervise food safety, HACCP, and sanitary compliance. Review technical/export reports, lead workforce, and manage key client, lab, and stakeholder relationships.

4.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

5.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

6.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

7.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

Employment OMB Approval: 1205-0451
Expiration Date: 02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Final Determination: Permanent Employment Certification Approval
U.S. Department of Labor

PERMANENT EMPLOYMENT CERTIFICATION APPROVAL

A. U.S. Government Agency Use Only

Pursuant to the provisions of Sections 212(a)(5)(A) of the Immigration and Nationality Act, as amended, the Department hereby certifies that there are not sufficient workers who are able, willing, and qualified, and who will be available at the time of application for a visa and admission into the United States and place needed to fill the job opportunities for which certification is sought, and the permanent employment of the foreign worker will not adversely affect the wages and working conditions of workers in the United States similarly employed.

Therefore, by virtue of the signature below, the Department hereby acknowledges granting certification for the following *Application for Permanent Employment Certification* (Form ETA-9089):

1. DOL Case Number		2. Case Status
3. Employer Legal Business Name		4. Employer FEIN
5. Foreign Worker's Last (family) Name		
6. Foreign Worker's First (given) Name		
7. Foreign Worker's Middle Name(s)		
8. Job Title		
9. SOC Code	10. SOC Occupational Title	
Labor Certification Validity Information		
11. Filing Date	12. Determination Date	13. Expiration Date
14. Department of Labor Office of Foreign Labor Certification *(electronic signature)*		

Pursuant to 20 CFR 656, the aforementioned permanent labor certification is valid only for the job opportunity, the foreign worker, and the area of intended employment specified on the approved Form ETA-9089, including all appendices and any modifications approved by the Department. The aforementioned filing date on this approved *Application for Permanent Employment Certification*, established under 20 CFR 656.17(c), may be used as a priority date by the Department of Homeland Security and the Department of State, as appropriate. This approved *Application for Permanent Employment Certification* will expire if not filed in support of *Immigrant Petition for Alien Workers* (Form I-140) with the Department of Homeland Security by the aforementioned expiration date.

The foreign worker covered by this approved *Application for Permanent Employment Certification* has declared under Section B below, under penalty of perjury, that the foreign worker has read and reviewed every page of Appendix A for this approved Form ETA-9089, takes full responsibility for the accuracy of all information contained therein, and intends to accept permanent employment in the job opportunity specified on the approved Form ETA-9089, including all appendices, offered by the employer if granted a visa or an adjustment of status based on this permanent labor certification.

The employer covered by this approved *Application for Permanent Employment Certification* has declared under Section D below under penalty of perjury that it has read and reviewed every page of this approved Form ETA-9089, including all appendices, and takes full responsibility for the accuracy of all information contained therein and all documentation supporting this approved *Application for Permanent Employment Certification*, including any representations made by the employer's authorized preparer, agent or attorney, as applicable.

OMB Approval: 1205-0451
Expiration Date:02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Final Determination: Permanent Labor Certification Approval
U.S. Department of Labor

B. Foreign Worker Declaration

I **declare** under penalty of perjury that I have read and reviewed all information contained in Appendix A of this approved Form ETA-9089, and that to the best of my knowledge the information contained therein is true and accurate. *I understand that to knowingly and/or willfully furnish materially false information in the preparation of this form and any supplement thereto or to aid, abet, or counsel another to do so is a federal offense punishable by fines, imprisonment, or both (18 U.S.C. 2, 1001, 1546, 1621).*

I **further declare** that I am the person identified under Section A, Fields 5, 6, and 7 above. I did not participate in any activities involving the interviewing or consideration of U.S. workers and intend to accept permanent employment in the job opportunity specified on this approved Form ETA-9089, including all appendices, offered by the employer if granted a visa or an adjustment of status based on this permanent labor certification.

1. Signature *	2. Date Signed *
Hanna Carolina Campos Ferreira	10/01/2026

C. Attorney or Agent Declaration

I **declare** under penalty of perjury that I am an attorney for the employer, or that I am an employee of, or hired by, the employer listed in Section C of the Form ETA-9089, and that I have been designated by that employer in accordance with 20 CFR 656.10(b) to act on its behalf in connection with this application.

I **hereby certify** that I have provided to the employer the entire Form ETA-9089, appendices, and all supporting documentation for review and to the best of my knowledge the information contained herein is true and accurate, including the employer's declaration regarding activities that I have undertaken on the employer's behalf in connection with this application. *I understand that to knowingly and/or willfully furnish materially false information in the preparation of this form and any supplement hereto or to aid, abet, or counsel another to do so is a federal offense punishable by fines, imprisonment, or both (18 U.S.C. 2, 1001, 1546, 1621).*

1. Attorney or Agent's Last (family) Name *	2. First (given) Name *	3. Middle Initial §
HAVERROTH SILVA	Otavio	N/A
4. Firm/Business Name §		
HS Law Corp		
5. Signature *		6. Date Signed *
		10/01/2026

D. Employer Declaration

I **hereby designate** the agent or attorney identified in Section C (if any) of the Form ETA-9089 to represent me for the purpose of labor certification and, by virtue of my signature in Field 5 below, I **take full responsibility** for the accuracy of any representations made by my agent or attorney, and my designated preparer identified in Section C above, on every page of the Form ETA-9089, including all appendices, and documentation supporting this application.

I **declare** under penalty of perjury that I have read and reviewed this application, including every page of the Form ETA-9089, appendices, and supporting documentation, and that to the best of my knowledge the information contained therein is true and accurate. *I understand that to knowingly and/or willfully furnish materially false information in the preparation of this form and any supplement thereto or to aid, abet, or counsel another to do so is a federal offense punishable by fines, imprisonment, or both (18 U.S.C. 2, 1001, 1546, 1621).*

1. Last (family) Name *	2. First (given) Name *	3. Middle Initial §
4. Title *		
5. Signature *		6. Date Signed *

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date:02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Appendix A: Foreign Worker Information
U.S. Department of Labor

FOREIGN WORKER INFORMATION

A. Foreign Worker Contact Information

1. Foreign Worker's Last (family) Name * CAMPOS FERREIRA		
2. Foreign Worker's First (given) Name * Hanna Carolina		
3. Foreign Worker's Middle Name(s) * N/A		
4. Address 1 *(current)* * 1090 Tito Versiane dos Anjos Av		
5. Address 2 *(apartment/suite/floor and number)* **§** Apartment 101		
6. City * Montes Claros	7. State * N/A	8. Postal Code * 39403217
9. Country * Brazil	10. Province **§** Minas Gerais	
11. Date of Birth *(mm/dd/yyyy)* * 09/25/1984	12. Class of Admission * N/A	13. Alien Registration Number (A#) (if applicable) * 0
14. Country of Birth * Brazil		
15. Country of Citizenship or Nationality * Brazil		

B. Foreign Worker Education §

a. Educational Attainment Information 1

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate ☐ Bachelor's ☐ Master's ■ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)	
1a. If "Other Degree" in question 1, specify the diploma/degree attained N/A	
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field) Veterinary Medicine	
1c. Name of Institution that issued the degree/diploma Universidade Federal de Viçosa	
1d. Name of Country of institution identified in question 1c Brazil	1e. Month/year attained (*mm/yyyy*) 12/2016

b. Educational Attainment Information 2

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate ☐ Bachelor's ■ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)	
1a. If "Other Degree" in question 1, specify the diploma/degree attained N/A	
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field) Veterinary Medicine	
1c. Name of Institution that issued the degree/diploma Universidade Federal de Viçosa	
1d. Name of Country of Institution identified in question 1c Brazil	1e. Month/year attained (*mm/yyyy*) 06/2012

PERM Case Number: _____ Case Status: _____ Determination Date: _____ Expiration Date: _____

***B. Foreign Worker Education** (continued)*

c. Educational Attainment Information 3

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate ☐ Bachelor's ■ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)
1a. If "Other Degree" in question 1, specify the diploma/degree attained Graduate Certificate
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field) Veterinary Clinical Medicine and Surgery
1c. Name of Institution that issued the degree/diploma Universidade Federal de Viçosa

1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)
Brazil	08/2011

d. Educational Attainment Information 4

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate's ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ■ Other Degree (JD, MD, etc.)
1a. If "Other Degree" in question 1, specify the diploma/degree attained Doctor of Veterinary Medicine (DVM)
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field) Veterinary Medicine
1c. Name of Institution that issued the degree/diploma Universidade Federal de Viçosa

1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)
Brazil	07/2008

e. Educational Attainment Information 5

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate's ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)
1a. If "Other Degree" in question 1, specify the diploma/degree attained N/A
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field) N/A
1c. Name of Institution that issued the degree/diploma N/A

1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)
N/A	

C. Foreign Worker Training Qualifications §

a. Training, Certification(s), and/or License(s) Information 1

1. Name of Institution/School/Training provider Brazilian College of Veterinary Hygienists of Food (CBMVHA)
1a. Name of training, coursework, experience received Professional Association Membership

1b. Training/Certifications/licenses attained (if applicable)		
N/A		
1c. Start date of training (*mm/yyyy*)	1d. End date of training (*mm/yyyy*)	1e. Month/year awarded (*mm/yyyy*)
02/2026	N/A	02/2026

b. Training, Certification(s), and/or License(s) Information 2

1. Name of Institution/School/Training provider		
Regional Council of Veterinary Medicine of the State of Minas Gerais		
1a. Name of training, coursework, experience received		
Professional License		
1b. Training/Certifications/Licenses attained (if applicable)		
MG-10058-VP		
1c. Start date of training (*mm/yyyy*)	1d. End date of training (*mm/yyyy*)	1e. Month/year awarded (*mm/yyyy*)
02/2025	N/A	02/2025

c. Training, Certification(s), and/or License(s) Information 3

1. Name of Institution/School/Training provider		
Codanorte		
1a. Name of training, coursework, experience received		
Speaker: III Congress On Innovation, Technology and Sustainability for Public Management - CINTECS.		
1b. Training/certifications/licenses attained (if applicable)		
N/A		
1c. Start date of training (*mm/yyyy*)	1d. End date of training (*mm/yyyy*)	1e. Month/year awarded (*mm/yyyy*)
08/2025	08/2025	08/2025

D. Foreign Worker Training Qualifications §

a. Skills, Abilities, and Proficiencies 1

1. Name of Employer/Institution/School/Training Provider	
Italica - Serviços de Língua e Cultura Italiana LTDA	
1a. Country	1b. State, Territory, or Province
Brazil	São Paulo
1c. Description of specific skills, abilities, and/or proficiencies the foreign worker possesses or attained, which help establish whether the foreign worker meets the requirements identified for the job opportunity *(up to 1,500 characters)*	
Italian Language and Culture Course L'Italiano Essenziale - 84 hours.	

b. Skills, Abilities, and Proficiencies 2

1. Name of Employer/Institution/School/Training Provider	
Junior Silveira English Course	
1a. Country	1b. State, Territory, or Province
Brazil	N/A

1c. Description of specific skills, abilities, and/or proficiencies the foreign worker possesses or attained, which help establish whether the foreign worker meets the requirements identified for the job opportunity *(up to 1,500 characters)*

English Course, 100 hours.

E. Foreign Worker Work Experience §

a. Work Experience 1

1. Employer Name			
Ministry of Agriculture and Livestock (MAPA)			
1a. Address 1			
Esplanada dos Ministérios			
1b. Address 2			
Block D			
1c. City or Town			1d. Postal Code
Brasília			70043900
1e. Country		1f. State, Territory, or Province	
Brazil		Distrito Federal	
1g. Job Title			
Federal Agricultural Inspection Auditor (Head of the Regional Technical Unit for Agriculture and Livestock)			
1h. Start Date *(mm/yyyy)*	1i. End Date *(mm/yyyy)*	1j. Present	1k. Hours Worked Per Week
12/2019		■ Yes ☐ No	40

1l. Job Duties: Specify details of the job (work tasks performed, use of tools/equipment, supervision, etc.) (*up to 3,500 characters*)

Auditing and inspecting establishments registered with the federal inspection service/MAPA (cattle slaughterhouses and meatpacking plants, dairies, honey and egg processing plants, animal feed production facilities.

Certification of products of animal origin; monitoring and conducting international audits from the United States, European Union, Chile, China, Mexico, Malaysia, Indonesia, and Peru at establishments producing products of animal origin.

Management and biannual training/refresher courses for a team consisting of two veterinarians and approximately 25 sanitary inspection assistants).

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 4

Name of Institution/School/Training provider:University of Minnesota

Name of training, coursework, experience received:Doctoral Research Exchange Program Fellowship (Completed as part of Ph.D Degree Program).

Training/certifications/licenses attained:N/A

Start date - End date:09/2014 - 07/2015.

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 5

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:Capstone Project Examining Committee''Structural, dimensional, and functional characteristics of Free-Stall barns in the Alto Rio Doce region.''

Training/certifications/licenses attained:N/A

Start date - End date: 02/2014.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 6

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:4th National Symposium on Dairy Cattle and 2nd International Symposium on Dairy Cattle

Training/certifications/licenses attained:N/A

Start date - End date:11/2013

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 7

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:Reviewer for the 5th Brazilian Symposium on Sustainable Agriculture and the 2nd International Congress on Sustainable Agriculture.

Training/certifications/licenses attained:N/A

Start date - End date:10/2013.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 8

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:Academic Integration Symposium - SIA 2013 - VIÇOSA CAMPUS.

Training/certifications/licenses attained:N/A

Start date - End date: 10/2013

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 9

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:The curriculum: Prescription and Teaching Practice.

Training/certifications/licenses attained:N/A

Start date - End date: 04/2012.

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date: 02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Appendix C: Supplemental Information
U.S. Department of Labor

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	c	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 10

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:Served as Conference Speaker at the 2012 Veterinary Medicine Research Symposium and the 4th Graduate Studies Week in Veterinary Medicine - UFV

Training/certifications/licenses attained:N/A

Start date - End date:09/2012

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 11

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:2012 Veterinary Medicine Research Symposium and the 4th Graduate Studies Week in Veterinary Medicine - UFV - Serology and Shedding of Bovine herpesvirus 1 (BoHV-1) and Bovine herpesvirus 5 (BoHV-5) through Milk: Implications for the Pathogenesis of Naturally Infected Dairy Cows.

Training/certifications/licenses attained:N/A

Start date - End date:09/2012

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date: 02/28/2029

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 12

Name of Institution/School/Training provider:XXIII Brazilian Congress of Virology & VII Mercosur Meeting of Virology (XXIII CVB).

Name of training, coursework, experience received:Academic Paper:Distribution of Antibodies and DWA Elimination of Bovine herpersvirus 5 (BoHV1 and 5) in Milk: Implications for viral Pathogenesis in Naturally Infected Dairy Cows.

Training/certifications/licenses attained:N/A

Start date - End date:10/2012

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 13

Name of Institution/School/Training provider:Universidade Federal de Viçosa

Name of training, coursework, experience received:Diversity and Accessibility in Higher Education Seminar.

Training/certifications/licenses attained:N/A

Start date - End date:10/2012.

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date: 02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Appendix C: Supplemental Information
U.S. Department of Labor

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 14

Name of Institution/School/Training provider:Universidade Federal de Viçosa

Name of training, coursework, experience received:Academic Integration Symposium - SIA 2011.

Training/certifications/licenses attained:N/A

Start date - End date:10/2011.

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 15

Name of Institution/School/Training provider:Universidade Federal de Viçosa

Name of training, coursework, experience received:Served as Conference Speaker at 2010 Veterinary Medicine Research Symposium and the 3rd Graduate Studies Week in Veterinary Medicine - UFV.

Training/certifications/licenses attained:N/A

Start date - End date:09/2010.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 16

Name of Institution/School/Training provider:Sociedade Brasileira de Virologia.

Name of training, coursework, experience received:XXI National Meeting of Virology - V Virology Meeting of Mercosul.

Training/certifications/licenses attained:N/A

Start date - End date:10/2010.

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 17

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:Academic Integration Symposium of UFV - ''Evaluation of Neutralizing Antibodies against Bovine herpersvirus 1 (BoHV-1) in Beef and Dairy Cattle Herds.''

Training/certifications/licenses attained:N/A

Start date - End date:10/2010.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 18

Name of Institution/School/Training provider:Sociedade Brasileira de Virologia.

Name of training, coursework, experience received:Academic paper: ''Subclinical Disease Associated With Infection by Porcine circovirus 2 (PCV-2) on Swine Herd.''

Training/certifications/licenses attained:N/A

Start date - End date:10/2010.

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 19

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:2nd Equine Production Symposium.

Training/certifications/licenses attained:N/A

Start date - End date:06/2009

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 20

Name of Institution/School/Training provider:PROVET - Junior Veterinary Medicine Company.

Name of training, coursework, experience received:National Dairy Cattle Symposium.

Training/certifications/licenses attained:N/A

Start date - End date:09/2009.

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 21

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:Academic paper: ''Left Medial Luxation of The Pony Metacarpophalangeal Joint - Case Report - UFV symposia: 19th undergraduate research symposium – sic; 9th graduate studies scientific exhibition – simpós; 7th university outreach symposium – SEU; and 3rd teaching symposium – SEn.''

Training/certifications/licenses attained:N/A

Start date - End date:10/2009.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 22

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:Academic paper: "Prepubic tendon rupture in a cow as a consequence of Hydrops due to Hydroallantois – Case Report - UFV symposia: 19th undergraduate research symposium – sic; 9th graduate studies scientific exhibition – simpós; 7th university outreach symposium – SEU; and 3rd teaching symposium – SEn.''

Training/certifications/licenses attained:N/A

Start date - End date:10/2009.

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 23

Name of Institution/School/Training provider:Universidade Federal de Viçosa.

Name of training, coursework, experience received:14th Academic Week of the

Veterinary Medicine Program.

Training/certifications/licenses attained:N/A

Start date - End date:10/2006.

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date: 02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Appendix C: Supplemental Information
U.S. Department of Labor

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 24

Name of Institution/School/Training provider:Universidade Federal Rural do Rio de Janeiro.

Name of training, coursework, experience received:Participated as Coordinator of the Equine Cycle of the Mini-Course on Embryo Transfer in Equines - 22nd Veterinary Medicine Week.

Training/certifications/licenses attained:N/A

Start date - End date:05/2005 - 06/2005.

B. Supplemental Information 2 §

1. Section and Item Number	C	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Training, Certification(s), and/or License(s) Information 25

Name of Institution/School/Training provider:Universidade Federal Rural do Rio de Janeiro.

Name of training, coursework, experience received:Alternative and Complementary Medicine Cycle.

Training/certifications/licenses attained:N/A

Start date - End date:05/2004.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	D	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Skills, Abilities, and Proficiencies 3

Name of Employer/Institution/School/Training Provider:University of Minnesota

Country/State:Minnesota, United States of America.

Description of specific skills, abilities, and/or proficiencies: ESL-941 Minnesota English Language Progam.

B. Supplemental Information 2 §

1. Section and Item Number	D	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Skills, Abilities, and Proficiencies 4

Name of Employer/Institution/School/Training Provider:Uptime Consultants

Country/State:Brazil, Minas Gerais.

Description of specific skills, abilities, and/or proficiencies:Reaching an advanced
level in English Language.

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date: 02/28/2029

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	D	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Skills, Abilities, and Proficiencies 5

Name of Employer/Institution/School/Training Provider:Number One - Complete English.

Country/State:Brazil, Minas Gerais.

Description of specific skills, abilities, and/or proficiencies:PLI - Reading in English.

B. Supplemental Information 2 §

1. Section and Item Number	D	1a. Section Name or Category of Supplemental Information	Foreign Worker Training Qualifications

1b. Supplemental Information. *(up to 1,500 characters)*

Skills, Abilities, and Proficiencies 6

Name of Employer/Institution/School/Training Provider:Universidade Federal Rural do Rio de Janeiro.

Country/State:Brazil, Rio de Janeiro.

Description of specific skills, abilities, and/or proficiencies:Intermediate Module of the English Course.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Work Experience 2

Employer Name:Brazilian Navy

Address:65 Praça Mauá, Rio de Janeiro, RJ 20081-240, Brazil.

Job title:Second Lieutenant in the Second Class Reserve of the Medical Corps

Start date: 12/2019 - Present.

B. Supplemental Information 2 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Work Experience 3

Employer Name:Brazilian Navy

Address:65 Praça Mauá, Rio de Janeiro, RJ 20081-240, Brazil.

Job title:Midshipman of the Second-Class Reserve of the Medical Corps.

Start date - end date: 06/2019 - 12/2019.

Job duties:Veterinarian serving as a Midshipman at the Navy Quartermaster Supply Depot in Rio de Janeiro, responsible for quality control of food for the military and for zoonosis control in the food warehouse and other related sectors.

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date: 02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Appendix C: Supplemental Information
U.S. Department of Labor

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Work Experience 4

Employer Name:Brazilian Navy

Address:16 Coronel Caetano Mascarenhas Street, Diamantina, MG,39100-000.

Job title:Veterinarian

Start date - end date: 12/2018 - 06/2019.

Job duties:Veterinarian working in zoonosis control for the Municipal Government, especially in the fight against cutaneous and visceral leishmaniasis in the municipality's rural and urban areas.

B. Supplemental Information 2 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Work Experience 5

Employer Name:Guanambi Higher Education Center

Address:317 Vasco da Gama Street, Guanambi, BA 46430-000, Brazil.

Job title:Faculty and Higher Education Program Coordinator

Start date - end date: 04/2016 - 01/2017.

Job duties:Teaching and Coordination of the Undergraduate Program in Veterinary Medicine, lecturing in General Microbiology, Veterinary Microbiology and Veterinary Immunology, and participating in the structuring and administration of the program, including the design of a veterinary hospital, affiliated laboratories, the curriculum, and the pedagogical project. In addition, participated in promoting the 1st Veterinary Medicine Conference at Guanambi College, which included lectures and practical demonstrations addressing various topics in Veterinary Medicine.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUMMARY OF COVER LETTER

Petitioner/Beneficiary: CAMPOS FERREIRA, Hanna Carolina
Type of Petition: I-140, EB-2 National Interest Waiver
Classification Sought: Immigration and Nationality Act § 203(b)(2)(B)(i)

This petition is submitted on behalf of Dr. Hanna Carolina Campos Ferreira, a veterinarian with experience in animal-health research, sanitary inspection, and technical training. An independent academic evaluation finds her Brazilian master's degree and doctorate equivalent to a **U.S. Doctor of Veterinary Medicine** from a accredited institution of higher education in the United States. (See Exhibit B.). Thus, Dr. Ferreira qualifies for EB-2 classification as a member of the professions holding an advanced degree.

Under *Matter of Dhanasar*, 26 I&N Dec. 884 (AAO 2016), she seeks a National Interest Waiver to strengthen preventive food-safety and animal-health systems in United States production and trade involving products of animal origin through sanitary-risk assessments, hazard-control programs, corrective measures, verification, and personnel training. She proposes to carry out this work through Integra Health Systems LLC, a planned Miami, Florida limited liability company, serving as General Manager and Technical Director. (See Exhibits B and C.I.). Moreover, Dr. Ferreira's proposed endeavor satisfies the three-prong test under *Dhanasar*:

1 - Substantial Merit and National Importance: Dr. Ferreira's proposed work will help food producers and processors identify sanitary hazards, implement preventive controls, correct deficiencies, and train staff responsible for maintaining those systems. Applied across animal-origin production and trade operations, these services have the potential to reduce avoidable biological risks and strengthen the reliability of food-safety practices. Their intended protective effects extend to consumers, workers, and businesses receiving those products. Training will also help customer personnel sustain controls after individual engagements, supporting broader capacity within the food supply chain. (See Exhibit C.I.)

2 - Well-Positioned to Advance the Proposed Endeavor: Dr. Ferreira combines advanced veterinary education, research and teaching, municipal animal-health work, and federal inspection service with Brazil's Ministry of Agriculture and Livestock since December 2019. Government records document ten international audits from 2022 through 2025; materials for the September 2022 U.S. FSIS visit identify her as veterinarian in charge. Her scientific publications, leadership appointment in February 2025, and three support letters corroborate her research, supervisory, and instructional capabilities. The Business Plan defines the services and a phased staffing structure; payroll, tax, and investment records document her financial history and resources. (See Exhibits B, C.I, and C.II.)

3 - Balancing of Benefits to the United States: As General Manager and Technical Director, Dr. Ferreira will establish and supervise a company serving multiple production and trade operations. Her responsibilities will combine scientific interpretation, inspection experience, technical project delivery, and staff preparation. A job offer and labor certification tied to one employer's vacancy would not adequately encompass that independent undertaking. The planned team and training services will provide opportunities for other professionals and strengthen customers' capacity to maintain preventive controls. The United States would benefit from that contribution even if qualified U.S. workers are available. On balance, waiving the job-offer and labor-certification requirements better serves the United States. (See Exhibits C.I and C.II.)

Considering the record as a whole, Dr. Ferreira qualifies for EB-2 classification and satisfies the three prongs for a National Interest Waiver. We respectfully request favorable review and approval of her petition and supporting documentation.

Thank you for your attention to this matter.

Sincerely,



Otavio Haverroth Silva
California Bar # 343486

+1 510 714 0100 +1 619 960 8262 PO BOX 90487 / ZIP CODE 92169

October 06, 2026

USCIS Dallas Lockbox

U.S. Postal Service (USPS):

USCIS

Attn: I-140 P.O. Box 660128

Dallas, TX 75266-0128

Ref.: I-140 Immigrant Visa Self-Petition of Dr. Hanna Carolina Campos Ferreira – Request for National Interest Waiver under the EB-2 Classification

VETERINARY MEDICINE AND FOOD SAFETY / Doctor in Veterinary Medicine - STEM

Dear Immigration Officer:

On behalf of Hanna Carolina Campos Ferreira (the "Self-Petitioner" or "Dr. Ferreira"), we respectfully submit this Form I-140 petition for classification under section 203(b)(2)(A) of the Immigration and Nationality Act ("INA") as a member of the professions holding an advanced degree. Dr. Ferreira also requests a National Interest Waiver of the job-offer and permanent-labor-certification requirements under INA section 203(b)(2)(B)(i). Her qualifications and proposed work satisfy the framework established in Matter of Dhanasar, 26 I&N Dec. 884 (AAO 2016).

Dr. Ferreira is a veterinarian with a master's degree and doctorate in Veterinary Medicine from the Federal University of Viçosa, Brazil. **An independent academic evaluation identifies those qualifications as equivalent to a United States Doctor of Veterinay Medicine.** Since December 2019, she has served as a Federal Agricultural Inspection Auditor with Brazil's Ministry of Agriculture and Livestock. Her record combines animal-disease research, teaching, public-health practice, inspection of products of animal origin, participation in international government audits, and technical leadership. (See Exhibits A, B, and C.II.)

Her proposed endeavor is to strengthen preventive food-safety and animal-health practices in United States production and trade involving products of animal origin. She will develop and implement hazard-control programs, conduct technical assessments and audits, train operational personnel, and support zoonotic-disease prevention and regulatory readiness. She proposes to carry out this work through Integra Health Systems LLC, a specialized consulting company to be established in Miami, Florida, with a phased expansion into additional United States markets. The

company is the vehicle for the work; the endeavor is the implementation of preventive systems that protect the food chain and the people who depend on it. (See Exhibit C.I.)

The petition connects this proposed work to an independently documented professional record. Official employment records establish her public-service experience. A declaration from the Ministry's inspection service identifies her participation in ten international audits from 2022 through 2025. Published research documents her work on diagnostic methods and animal infections, while teaching and examination-committee records demonstrate her ability to explain and evaluate technical material. Detailed letters from persons who know her work place those records in context. Together with the implementation plan, this evidence supports a practical transition from veterinary research and sanitary oversight to the proposed United States services. (See Exhibit C.II.)

The petition therefore rests on four connected propositions:

1. EB-2 threshold eligibility. Dr. Ferreira's master's degree and doctorate in Veterinary Medicine from the Federal University of Viçosa, supported by official academic records and an independent evaluation identifying equivalency to a United States Doctor of Veterinary Medicine granted by a regionally accredited institution of higher education in the United States, establish her eligibility as a member of the professions holding an advanced degree under 8 C.F.R. §§ 204.5(k)(2) and 204.5(k)(3)(i)(A). Her graduate preparation in microbiology, virology, epidemiology, and diagnostic methods relates directly to the professional work underlying the endeavor: evaluating sanitary risks, developing preventive controls, interpreting technical findings, and supervising implementation in animal-origin production and trade. (See Exhibits B and C.I.)

2. National Interest Waiver Request – Substantial merit and national importance. The specific endeavor will strengthen preventive food-safety and animal-health systems through facility assessments, hazard-control programs, corrective-action planning, verification, and personnel training. Dr. Ferreira proposes to organize this work through Integra Health Systems LLC, with an initial base in Miami and phased expansion into additional United States markets. Official federal materials corroborate the public-health and regulatory importance of effective controls in food production, animal-health prevention, and supplier verification. The endeavor's broader prospective implications arise from applying those functions across multiple operations whose products and sanitary practices affect consumers, workers, and downstream supply relationships. Training will help establishment personnel maintain the controls after individual engagements, while the planned technical team will support continued delivery as demand develops. (See Exhibit C.I.)

3. Dr. Ferreira is well positioned to advance the proposed endeavor. Her scientific and clinical preparation, teaching experience, municipal veterinary service, and federal inspection responsibilities demonstrate capabilities directly relevant to the proposed services. Since December 2019, she has served with Brazil's Ministry of Agriculture and Livestock. Government documentation identifies her participation in ten international audits from 2022 through 2025, and materials for a September 2022 FSIS visit in Brazil identify her as veterinarian in charge. Her appointment to regional technical leadership, scientific publications, instructional records, and three

support letters further corroborate her technical judgment and ability to supervise and communicate specialized work. The Business Plan assigns those capabilities to defined services and a phased personnel structure; payroll, tax, and investment records substantiate her financial history and accumulated resources for launch planning. Together, these materials establish a concrete connection between her completed work and the proposed United States activities. (See Exhibits A, B, C.I, and C.II.)

4. The balance favors a waiver. As General Manager and Technical Director, Dr. Ferreira will establish and direct an independent enterprise serving multiple production and trade operations. Her responsibilities will include coordinating specialists, reviewing technical findings, supervising corrective measures and training, and organizing delivery across successive engagements. A labor certification for one employer's vacancy would encompass only part of that undertaking. The United States would benefit from her combination of scientific preparation, inspection and international-audit experience, and technical leadership even assuming that other qualified United States workers are available. The planned recruitment of additional professionals and instruction of customer personnel provide complementary benefits by expanding the capacity to implement and maintain preventive systems. Taken together, these circumstances favor waiving the job-offer and labor-certification requirements. (See Exhibits B, C.I, and C.II.)

The following analysis addresses the EB-2 classification requirement first and then each of the three National Interest Waiver prongs.

1. LEGAL STANDARD

A - Preponderance of the Evidence

The Self-Petitioner bears the burden of establishing eligibility for the requested classification and waiver. The applicable standard is preponderance of the evidence: the record must establish that the material facts supporting eligibility are "more likely than not" or "probably true." *Matter of Chawathe*, 25 I&N Dec. 369, 375–76 (AAO 2010). This inquiry concerns the quality and persuasive force of the evidence rather than the number of documents submitted. USCIS must examine each item for relevance, probative value, and credibility, both individually and in the context of the record as a whole. Even where some doubt remains, the standard is satisfied when the relevant, credible evidence supports the conclusion that the claim is probably true.

This petition is organized accordingly. Official academic records and an independent credential evaluation establish the level, subject matter, and United States equivalency of Dr. Ferreira's graduate education. Government employment records document her public-service appointments and inspection responsibilities, while an official declaration and supporting audit materials identify her participation in international government audits. Scientific publications document completed research, and teaching and examination-committee records demonstrate experience communicating and evaluating specialized knowledge. Detailed support letters explain the work and capabilities personally observed by their authors. Payroll, tax, and investment records document her financial

history and resources relevant to implementation planning. The Business Plan connects that established professional record to defined United States services, an operational structure, and a phased implementation strategy. These sources support different elements of the petition and reinforce the connection between Dr. Ferreira's preparation and the work she proposes to undertake. (See Exhibits B, C.I, and C.II.)

B - Statutory and Regulatory Framework

INA § 203(b)(2)(A), codified at 8 U.S.C. § 1153(b)(2)(A), provides immigrant classification for qualified members of the professions holding advanced degrees or their equivalent, as well as individuals of exceptional ability in the sciences, arts, or business whose prospective services will substantially benefit the United States. INA § 203(b)(2)(B)(i) authorizes USCIS to waive the requirement that an individual's services be sought by a United States employer when doing so serves the national interest. The National Interest Waiver encompasses the job-offer requirement and the associated permanent labor certification requirement. *Matter of Dhanasar*, 26 I&N Dec. 884, 885–86 (AAO 2016).

Under 8 C.F.R. § 204.5(k)(2), an advanced degree is a United States academic or professional degree above the baccalaureate level, or a foreign equivalent degree. The regulation identifies an official academic record showing a qualifying advanced degree or its foreign equivalent as the applicable initial evidence. 8 C.F.R. § 204.5(k)(3)(i)(A). Dr. Ferreira relies on her master's degree and doctorate in Veterinary Medicine from the Federal University of Viçosa, supported by official academic records and an independent evaluation identifying equivalency to a United States Doctor of Veterinary Medicine. Those graduate qualifications provide the basis for the advanced-degree classification requested here. (See Exhibit B.)

The regulation also defines a profession to include the occupations identified in INA § 101(a)(32) and other occupations for which a United States baccalaureate degree or its foreign equivalent is the minimum requirement for entry. 8 C.F.R. § 204.5(k)(2). The classification inquiry therefore considers both the individual's qualifying education and the professional occupation through which the proposed endeavor will be advanced. Here, the underlying work involves specialized veterinary and food-safety functions, including sanitary-risk assessment, hazard-control development, technical verification, and instruction of operational personnel. Dr. Ferreira's proposed management and technical-direction responsibilities organize the delivery of those professional services, which relate directly to her graduate preparation. (See Exhibits B and C.I.)

Establishing the advanced-degree classification satisfies the EB-2 threshold. The requested waiver requires a separate determination that the proposed endeavor and Dr. Ferreira's ability to advance it meet the national-interest framework discussed below.

C - The *Dhanasar* Framework

After EB-2 eligibility is established, *Matter of Dhanasar*, 26 I&N Dec. 884, 889–91 (AAO 2016), provides that USCIS may grant a National Interest Waiver when the petitioner establishes, by a preponderance of the evidence, that:

1. The proposed endeavor has both substantial merit and national importance;

2. The petitioner is well positioned to advance the proposed endeavor; and

3. On balance, it would be beneficial to the United States to waive the requirements of a job offer and permanent labor certification.

The first prong focuses on the specific endeavor the individual proposes to undertake. Substantial merit may be demonstrated in areas such as health, science, education, business, or technology and does not require immediate, quantifiable economic returns. National importance concerns the endeavor's prospective impact and broader implications, including consequences for a field or industry, public welfare, significant potential employment of United States workers, or other substantial positive economic effects. Geographic reach may inform that assessment, but work concentrated in one region can have national importance when its broader implications are established. *Id.* at 889–90.

The second prong shifts the focus to the individual. Relevant considerations include education, skills, knowledge, and a record of success in related efforts; a plan for future activities; progress toward the endeavor; and interest from potential customers, users, investors, or other relevant persons or entities. *Id.* at 890. These considerations permit an individualized assessment of the petitioner's preparation and ability to advance the proposed work. They do not require proof that an entrepreneurial venture is more likely than not to achieve ultimate commercial success. The petitioner must instead establish, by a preponderance of the evidence, that she is well positioned to advance the endeavor. A business plan explains the proposed activities, while independent evidence supports the assessment of the capabilities and circumstances underlying its implementation.

The third prong requires balancing the benefits of the proposed endeavor and the individual's contributions against the interests ordinarily protected by the job-offer and labor-certification requirements. Relevant considerations include whether the nature of the individual's qualifications or proposed work makes obtaining a job offer or labor certification impractical; whether the United States would benefit from her contributions even assuming that other qualified United States workers are available; and whether the national interest in those contributions warrants dispensing with the ordinary process. *Dhanasar*, 26 I&N Dec. at 890–91. Additional considerations may include specialized knowledge that a position's minimum requirements would not adequately capture, potential economic effects, and prospective job creation. Evidence of an occupational labor shortage, standing alone, does not establish this prong.

USCIS's guidance also recognizes that entrepreneurs may advance an endeavor through an enterprise in which they will hold an ownership interest and perform an active, central role. Relevant evidence may include related education and experience, leadership responsibilities, implementation

planning, financial resources, and detailed third-party statements. USCIS evaluates that evidence in the aggregate under the same three-prong framework. General assertions about entrepreneurship, industry importance, or potential employment do not themselves establish eligibility. See USCIS Policy Manual, Vol. 6, Pt. F, Ch. 5. This petition follows that approach.

2 - THE EB-2 CLASSIFICATION

A - Dr Ferreira holds qualifying advanced degrees

The EB-2 classification is available to members of the professions holding advanced degrees or their equivalent. The regulation defines an advanced degree as a United States academic or professional degree, or a foreign equivalent degree, above the baccalaureate level. An official academic record showing that the individual holds such a degree is qualifying initial evidence. 8 C.F.R. sections 204.5(k)(2) and 204.5(k)(3)(i)(A). Dr. Ferreira meets this requirement through her graduate degrees in Veterinary Medicine. **Her academic progression is documented in Exhibit B**.

She received her undergraduate degree in Veterinary Medicine from the Federal University of Viçosa in July 2008. She subsequently completed a specialization in Veterinary Clinical Medicine and Surgery in 2010. She then completed the university's master's program in Veterinary Medicine in 2012 and its doctoral program in Veterinary Medicine in 2016. The submitted materials include diplomas, academic transcripts, translations, and a credential evaluation addressing the separate qualifications. (See Exhibit B.)

The May 4, 2026 report of Foreign Degrees - World Academic Research Center, Inc. evaluates the underlying academic documents and concludes that her education is functionally **equivalent to United States degrees including a Doctor of Veterinary Medicine Master of Science in Veterinary Medicine**. It separately identifies the undergraduate veterinary qualification as equivalent to a Doctor of Veterinary Medicine and the specialization as equivalent to a graduate certificate. The master's and research doctorate provide the straightforward basis for this petition's advanced-degree claim. The specialization and professional-degree evaluation further document her academic preparation. (See Exhibit B.)

***U.S. Educational Equivalency*:**

Based on the documentation(s) submitted for evaluation, World Academic Research Center, Inc. concludes that Ms. Campos Ferreira's education in Brazil is considered *functionally equivalent to the U.S. degrees of Doctor of Veterinary Medicine, Graduate Certificate in Veterinary Science, Master of Science in Veterinary Medicine and Doctor of Philosophy in Veterinary Medicine* granted by a regionally accredited institution of higher education in the United States of America.

The evaluation identifies completion of the master's program on February 10, 2012, with conferral of the Master of Science title on April 16, 2012. It identifies completion of the doctoral

program on July 5, 2016, with conferral of the Doctor of Science title on September 20, 2016. These findings correspond to the academic records supplied for the two programs. The independent evaluation and the university records therefore corroborate both the level and the subject matter of her education. (See Exhibit B.)

B - The proposed work is professional and related to those degrees

The underlying work requires scientific knowledge of animal disease, microbiology, epidemiology, sanitary inspection, and risk-based food-safety systems. Dr. Ferreira will evaluate technical procedures, supervise hazard-control and audit projects, review findings, and guide preventive measures involving animal-origin products and production environments. Her business plan identifies her position as General Manager and Technical Director. The management responsibilities organize the delivery of professional technical services directly related to her veterinary education. (See Exhibit C.I.)

The Bureau of Labor Statistics ("BLS") describes food-safety and inspection veterinarians as professionals who inspect animals and animal products, enforce food-safety regulations, and design animal- and public-health programs. Its occupational guidance identifies the Doctor of Veterinary Medicine or equivalent professional degree as the usual educational entry requirement for veterinarians. BLS also identifies a bachelor's degree as the typical entry qualification for agricultural and food scientists, whose work includes improving food safety and evaluating processing conditions. These descriptions substantiate the professional character of the technical work underlying the endeavor. Dr. Ferreira's management title concerns her direction of those specialized services; the proposed work is grounded in veterinary and food-safety science.[1]

Her transcripts provide a further connection. Master's coursework includes cellular immunology, veterinary bacteriology, virology, epidemiological research methods, and teaching methodology. Doctoral coursework includes diagnostic methods in veterinary microbiology, experimental methods, molecular epidemiology of infectious and parasitic agents, and advanced animal virology. These subjects bear directly on evaluating sanitary risks, interpreting diagnostic findings, and preparing technically sound preventive procedures. (See Exhibit B.)

Her Brazilian professional registration corroborates her standing as a veterinarian and the professional context in which she acquired this experience. Implementation in the United States will remain subject to the qualifications applicable to each activity. Florida regulates the practice of veterinary medicine, while federal food-safety rules prescribe qualifications for particular HACCP and preventive-control functions. The company's personnel structure separates food-safety, veterinary-public-health, regulatory, and laboratory-support responsibilities, allowing assignments to

[1] U.S. Bureau of Labor Statistics, Occupational Outlook Handbook, "Veterinarians," section What They Do; and "Agricultural and Food Scientists," section What They Do. The occupational descriptions and entry education requirements substantiate the professional character of the technical services. https://www.bls.gov/ooh/healthcare/veterinarians.htm; https://www.bls.gov/ooh/life-physical-and-social-science/agricultural-and-food-scientists.htm.

be made according to the applicable professional requirements. Academic equivalency establishes the educational basis for this petition; authorization to perform regulated acts will be governed by the relevant United States rules. (See Exhibits B, C.I, and C.II.)[2]

The record thus establishes the requested EB-2 classification under the advanced-degree provision. Because that basis is independently supported by graduate academic records, the remaining evidence concerning employment, publications, professional standing, compensation, and leadership is developed where it is most probative: Dr. Ferreira's positioning under the second Dhanasar prong.

3 - THE NATIONAL INTEREST WAIVER

A - The proposed endeavor

Dr. Ferreira proposes to strengthen preventive food-safety and animal-health systems in United States production and trade involving products of animal origin. She will assess sanitary risks and operating procedures, develop and implement hazard controls, support corrective actions, verify execution, and train the personnel responsible for maintaining those controls. The work is intended to reduce avoidable sanitary failures in production and supply relationships and improve the capacity of establishments to sustain preventive practices. (See Exhibit C.I.)

Integra Health Systems LLC will serve as the organizational vehicle for this work. The business plan proposes a Miami, Florida headquarters, initial engagements in Florida and surrounding markets, and subsequent expansion into additional United States markets. Dr. Ferreira will serve as General Manager and Technical Director, supervising technical standards, projects, personnel, and business development. The operational model is project-based and includes technical field services at the establishments receiving assistance. (See Exhibit C.I.)

The central activity is implementation of preventive systems. The four service categories describe where that activity will be applied. Food Safety and USDA Compliance Support will evaluate sanitary procedures, documentation, operating conditions, and inspection readiness. HACCP and Preventive Control Program Development will address hazard analysis, written controls, sanitary procedures, traceability, corrective-action programs, and employee training. Animal Health and Zoonotic Disease Prevention Programs will address biosafety, sanitary risk assessment, monitoring, and prevention in animal-production settings. Technical Audits and Export Readiness Assessments will evaluate facilities, practices, records, and regulatory gaps associated with domestic and international commercialization. (See Exhibit C.I.)

Hazard Analysis and Critical Control Point ("HACCP") is a preventive approach to identifying significant hazards and controlling the points at which they can be managed. Sanitation standard

[2] Florida Statutes, chapter 474, including sections 474.202 and 474.207, concerning the practice of veterinary medicine and licensure. Applicable authorization depends on the activities actually performed. https://www.flsenate.gov/Laws/Statutes/2026/Chapter474/All.

operating procedures ("SSOPs") establish recurring practices for maintaining sanitary conditions. In the proposed work, these concepts lead to concrete tasks: observing a process, identifying its risks, examining the controls and records, determining what requires correction, and helping staff implement and verify the resulting procedures. The plan expressly identifies facility evaluations, documentation analysis, compliance verification, corrective-action planning, technical reporting, and operational monitoring as phases of service delivery. (See Exhibit C.I.)

Target operations include slaughterhouses, meat processors, dairy facilities, honey and egg processing operations, animal-feed manufacturers, agricultural operations, laboratories, and organizations involved in food trade. The applicable standards depend on the product and activity. USDA requirements for inspected meat, poultry, and egg-product operations and FDA requirements for other covered foods supply distinct technical frameworks. The proposed assessments will therefore require identification of the relevant regime and tailoring of the controls to the particular process. This product-specific analysis is consistent with Dr. Ferreira's experience in animal-origin inspection and her proposed supervisory responsibilities. (See Exhibits A, C.I, and C.II.)

The annual sales forecast gives the proposal a defined planning scale. It anticipates 32 service engagements in Year 1: ten food-safety and USDA-support projects, eight HACCP or preventive-control projects, seven animal-health programs, and seven technical-audit assessments. By Year 5, the respective figures are 35, 30, 28, and 26, totaling 119 engagements. These are forecast service units; a single customer may purchase more than one service. The plan pairs that volume with phased staffing, beginning with Dr. Ferreira and three other professionals and developing a larger technical and operational team as demand grows. (See Exhibit C.I.)

Through that structure, the endeavor combines direct technical assistance with continued implementation by the customer's employees. The intended effects include stronger hazard controls in production, more reliable sanitary documentation, and personnel better prepared to recognize deviations and carry out corrective measures. The first-prong analysis addresses the broader significance of those effects. The second-prong analysis addresses why Dr. Ferreira's experience prepares her to organize and deliver the work.

4 - FIRST PRONG: The proposed endeavor has substantial merit and national importance

A - Substantial merit in prevention and public health

The endeavor has substantial merit because it addresses sanitary hazards before products reach consumers and strengthens prevention within animal-production settings. The business plan identifies concrete activities directed at that objective: hazard analysis, sanitary procedures, monitoring, technical audits, corrective-action support, verification, and workforce training. Each activity has a practical relationship to safer production. Together they support prevention throughout the operational chain rather than relying exclusively on finding a defect in a finished product. (See Exhibit C.I.)

CDC's March 2025 publication estimates 9.9 million domestically acquired foodborne illnesses from six major pathogens in 2019, with 53,300 hospitalizations and 931 deaths estimated for seven pathogens. The reference year and pathogen coverage define the scope of those figures. They establish a substantial preventive-health need relevant to the proposed hazard-control work. (See Exhibit C.I.)[3]

The Interagency Food Safety Analytics Collaboration ("IFSAC"), involving CDC, FDA, and USDA, provides a product-specific connection. Its 2023 source-attribution report includes poultry, pork, beef, and dairy among the commodity categories associated with Salmonella, E. coli O157, or Listeria illness. The report's estimates and limitations support the relevance of prevention in the animal-origin categories targeted by the plan. (See Exhibit C.I.)[4]

USDA's Economic Research Service estimates the annual cost of foodborne illness at approximately $74.7 billion in 2023 dollars, accounting for medical treatment, productivity effects, and the consequences of serious illness and death. That estimate measures the public problem. It supports the value of preventing sanitary failures, while the proposed services and delivery model provide the connection to Dr. Ferreira's endeavor. (See Exhibit C.I.)[5]

The proposed services address the implementation side of that problem. A manufacturer can possess a written safety plan while its staff fail to apply a control consistently or fail to recognize a recurring sanitation deficiency. The plan calls for operational reviews and verification, which connect documented procedures to actual practice. Corrective-action support then assists in addressing identified gaps. Personnel training helps maintain those improvements through the employees who carry out the work. This functional relationship explains the endeavor's merit without assigning an unsupported number of avoided illnesses to the company. (See Exhibit C.I.)

B - HACCP and preventive controls give the work a defined regulatory purpose

The proposed HACCP services correspond to duties recognized in federal regulation. Under 9 C.F.R. Part 417, covered establishments must analyze hazards, maintain appropriate HACCP plans, and conduct validation, verification, and reassessment. The rules address hazards that include biological, chemical, and physical risks. The company's proposed assessment, plan-development, record-review, and verification work therefore concerns systems that have an established role in

[3] Centers for Disease Control and Prevention, "Foodborne Illness Burden, Estimates, and Trends," March 19, 2025. The illness estimate covers six pathogens; the hospitalization and death estimates cover seven. The reference year is 2019. https://www.cdc.gov/food-safety/php/data-research/foodborne-illness-burden/index.html.

[4] CDC, FDA, and USDA, Interagency Food Safety Analytics Collaboration, "Foodborne Illness Source Attribution Estimates for 2023." See the commodity-category estimates and the report's limitations. https://www.cdc.gov/ifsac/php/data-research/annual-report-2023.html.

[5] U.S. Department of Agriculture, Economic Research Service, "Cost Estimates of Foodborne Illnesses," data and documentation, updated 2026. The estimated annual cost is expressed in 2023 dollars; the model is separate from the CDC 2019 incidence estimates discussed above. https://www.ers.usda.gov/data-products/cost-estimates-of-foodborne-illnesses; https://www.ers.usda.gov/data-products/cost-estimates-of-foodborne-illnesses/documentation.

federal sanitary protection. The work supports establishments in fulfilling their obligations; it does not assume the government's inspection or enforcement authority.[6]

The regulations expressly accommodate qualified external technical assistance. Under 9 C.F.R. section 417.7, the trained individual performing specified plan-development and reassessment functions need not be an employee of the establishment. That provision is pertinent to Integra's planned service model: specialized expertise can be organized outside the customer's workforce and applied to the customer's product-specific controls. The training requirements remain applicable to the individuals assigned those functions.

FDA's Food Safety Modernization Act ("FSMA") framework provides a related, separate preventive-control context. The rule for human food addresses hazard analysis, written controls, sanitation, monitoring, corrective actions, verification, and supply-chain programs for covered operations. The plan proposes corresponding services in relevant food settings. For each engagement, the applicable regime and any exemption must be identified before determining the establishment's obligations. This requires the type of product- and process-specific analysis contemplated by the endeavor.[7]

Animal food has its own preventive-control framework. FDA's rule addresses manufacturing practices and risk-based controls for covered animal-food operations, with distinctions affecting different facilities and agricultural activities. The plan includes animal-feed manufacturers among its target customers. Extending the service model to this segment is relevant because hazards can arise at the interface between feed, animal health, and production. The proposed technical support must respect that separate regulatory structure rather than assuming that a human-food plan applies unchanged.[8]

These rules also show why implementing a preventive system involves more than completing a generic compliance form. A control must respond to the hazards of a particular operation and be supported by monitoring and verification. Dr. Ferreira's plan identifies facility assessment, sanitary-documentation review, risk analysis, technical reporting, and follow-up. Those activities provide an operational route for improving consistency between the establishment's stated procedures and the way production is actually conducted. (See Exhibit C.I.)

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[6] 9 C.F.R. part 417, including sections 417.2, 417.4, and 417.7, concerning HACCP plans, verification and reassessment, and training for covered meat and poultry operations. https://www.ecfr.gov/current/title-9/chapter-III/subchapter-E/part-417.

[7] U.S. Food and Drug Administration, "FSMA Final Rule for Preventive Controls for Human Food." See requirements concerning food-safety plans, controls, and verification for covered facilities, together with the stated exemptions and modified requirements. https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-preventive-controls-human-food.

[8] U.S. Food and Drug Administration, "FSMA Final Rule for Preventive Controls for Animal Food." The applicability of requirements depends on the facility and activity. https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-preventive-controls-animal-food.

C - Animal health and zoonotic prevention connect production with public protection

The plan includes biosafety, disease-prevention protocols, monitoring, and epidemiological support for agricultural and food-production environments. These activities address the health conditions from which animal-origin production begins. Zoonoses are diseases transmissible between animals and people, while other animal diseases can affect herd health and production without being human infections. The endeavor encompasses both categories, and its public-health argument maintains that distinction. (See Exhibit C.I.)

The National One Health Framework for 2025-2029, developed through federal collaboration involving CDC, USDA, and the Department of the Interior, recognizes the interdependence of human, animal, and environmental health. It sets objectives concerning prevention, preparedness, coordinated surveillance, information sharing, and workforce capabilities. It also recognizes cooperation with nongovernmental, academic, and private-sector participants. The plan's preventive and training components are functionally consistent with those objectives.[9]

The connection is operational. The proposed biosafety, monitoring, and training services will address production facilities, animal operations, technical procedures, and the people applying them. The federal framework identifies prevention, surveillance, information sharing, and workforce preparation as linked public-health functions. Integra's plan identifies services through which a private technical provider can contribute to those functions in the production settings it will serve. (See Exhibit C.I.)

USDA's Animal and Plant Health Inspection Service ("APHIS") provides a current example through its National Milk Testing Strategy for H5N1, which uses milk testing and surveillance to support detection and response. The strategy illustrates the practical importance of monitoring at the animal-health and food-production interface. Dr. Ferreira's proposed contribution in this area is the biosafety, monitoring, and technical assistance described in her own plan. (See Exhibit C.I.)[10]

D - National importance follows from the work proposed in production and supply relationships

The national-importance claim rests on the application of preventive systems at several points in animal-origin production and trade. The plan identifies operations where biological hazards, deficient procedures, or unreliable records can affect the safety of products entering commerce. It proposes on-site assessment, implementation, correction, monitoring, and training, delivered through successive projects and a developing technical team. The broader implications arise from the

[9] CDC, USDA, and U.S. Department of the Interior, National One Health Framework, 2025-2029. https://www.cdc.gov/one-health/media/pdfs/2025/01/354391-A-NOHF-ZOONOSES-508_FINAL.pdf.

[10] USDA Animal and Plant Health Inspection Service, "National Milk Testing Strategy." Federal example of coordinated surveillance at the animal-health and food-production interface. https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/livestock/nmts.

relationship between those interventions and the people and operations relying on the resulting products and controls. (See Exhibit C.I.)

The contractual customer is the location where the work begins. The persons protected by proper controls include consumers who receive the food and workers who handle the products or encounter production risks. The proposed service will address conditions before products move onward in the supply chain. For example, the plan's assessment and corrective-action functions can identify an inadequately controlled hazard, assist with the procedure for managing it, and verify implementation by the responsible staff. The ensuing preventive capacity serves a public-protection function through the operation's continuing production. This is the causal relationship underlying the national-importance argument.

The federal frameworks help establish that relationship. HACCP regulation connects hazard analysis with monitoring, corrective action, verification, and records used before product shipment. FDA's preventive-control framework likewise addresses the controls and verification needed in covered production and supply relationships. The particular services proposed by Dr. Ferreira correspond to those implementation functions. The official research therefore corroborates the public significance of the intended work, while the business plan identifies how she proposes to deliver it. (See Exhibit C.I.)

The endeavor also connects animal-health conditions with processing and commercial readiness. Biosafety and disease monitoring address risks at the animal-operation level; preventive controls address the handling and processing of products; audits and documentation review address the reliability of the systems evaluated in regulated commerce. Organizing those functions within one technical service structure permits findings in one part of an engagement to inform the measures applied in another. Dr. Ferreira's proposed supervisory role provides the point of coordination. (See Exhibit C.I.)

The plan gives this delivery model a defined prospective volume: 32 service units in Year 1, 60 in Year 2, 81 in Year 3, 98 in Year 4, and 119 in Year 5. The projections encompass facility support, control-program development, animal-health programs, and technical assessments. They show an intended course of repeated work across operations, with a corresponding increase in personnel and specialized functions. Their relevance is the scale and organization of the proposed activity. They remain planning targets subject to client demand and execution. (See Exhibit C.I.)

5.3.1 Annual Sales Forecast Table

Sales Forecast					
	Year 1	Year 2	Year 3	Year 4	Year 5
Unit Sales					
Food Safety and USDA Compliance Support	10	18	24	29	35
HACCP and Preventive Control Program Development	8	15	20	24	30
Animal Health and Zoonotic Disease Prevention Programs	7	14	19	23	28
Technical Audits and Export Readiness Assessments	7	13	18	22	26
Total Unit Sales	32	60	81	98	119

The protective effect of the work does not depend on a claim that the company will capture a particular national market share. Nor does the petition attribute a fixed number of prevented illnesses to each forecast project. The evidence supports a more direct proposition: the company will organize qualified technical assistance for establishments whose preventive systems affect food safety, animal health, and supply relationships, and will expand delivery through additional personnel and operational training. Dhanasar calls for assessment of those prospective implications rather than proof of completed future benefits. 26 I&N Dec. at 889-90.

The Miami launch location is consistent with this model, but geography alone does not carry the claim. The proposed field services and later expansion allow delivery beyond one employer's internal operation. Even during the initial regional phase, the work addresses production and trade involving products and protective obligations that extend beyond the immediate business relationship. The relevant reach is the reach of the preventive functions and supply relationships to which the services will be applied.

E - Training and a developing team extend the preventive capacity

Training is an express component of the plan's HACCP and preventive-control services. Its role is practical: the customer's personnel must apply the procedures, maintain records, recognize deviations, and implement corrective actions during ordinary production. Instruction supports continued execution after a consultant completes the initial assessment. The intended deliverable therefore includes operational knowledge retained within the establishment as well as written plans and technical findings. (See Exhibit C.I.)

USDA's National Institute of Food and Agriculture ("NIFA") identifies on-site training, technical assistance, supply-chain programs, and food-safety plans as substantive functions in its Food Safety Outreach Program. That federal program corroborates the public value of helping operators implement preventive requirements. Integra's proposed training services address the same implementation need through its own project-based model. (See Exhibit C.I.)[11]

[11] USDA NIFA, "Food Safety Outreach Program," on-site training and technical assistance. https://www.nifa.usda.gov/grants/programs/food-safety-outreach-program-fsop.

The capacity to deliver those services is linked to specified positions. The first-year structure includes a food-safety specialist and a veterinary-public-health specialist alongside Dr. Ferreira and a business-development specialist. Later phases add regulatory coordinators, technical auditors, laboratory and quality-control analysts, and operational support. The plan assigns technical responsibilities to each group. This structure will permit additional assessments, follow-up, and instruction as the volume of work develops. (See Exhibit C.I.)

The model can be applied to successive engagements because assessment, documented controls, corrective action, monitoring, and training are common functions, even though each product and facility requires a tailored analysis. The method of expansion is repeated execution of those functions by a growing team. It does not require every engagement to be performed solely by the founder. Dr. Ferreira's technical oversight and staff instruction are central to maintaining consistency as additional personnel participate.

The combination matters to the first prong. A completed assessment identifies conditions at a point in time; a functioning preventive system and trained personnel can continue to guide production afterward. Across the engagements anticipated in the plan, that model has the potential to strengthen the implementation of sanitary controls in multiple production environments. The significance arises from the enduring preventive functions installed and supported through those engagements, together with the public-facing consequences of the products and operations involved. (See Exhibit C.I.)

F - Audit readiness supports the integrity of production and trade

Technical audits and readiness assessments are a substantial part of the endeavor. The plan describes review of facilities, sanitary procedures, operational compliance, and corrections associated with domestic and international commercialization. These services are relevant where a food producer must demonstrate reliable controls to authorities and commercial counterparties. Dr. Ferreira's proposed work addresses the technical quality of the underlying practices and records, rather than merely seeking easier access to a market. (See Exhibit C.I.)

The Food Safety and Inspection Service ("FSIS"), part of USDA, evaluates the equivalence of foreign inspection systems for eligible meat, poultry, and egg-product imports. This framework links sanitary practices and supporting records to public protection in cross-border food supply. Integra's proposed readiness work will assist operations with the technical practices and documentation relevant to their commercial activities; official equivalence and eligibility determinations remain governmental functions. (See Exhibit C.I.)[12]

FDA's Foreign Supplier Verification Programs ("FSVP") require covered importers to evaluate hazards and verify relevant supplier controls. Verification can involve audits, sampling, testing, or

[12] USDA Food Safety and Inspection Service, "Equivalence," concerning assessment of foreign inspection systems for eligible meat, poultry, and egg-product imports. Equivalence determinations remain governmental decisions. https://www.fsis.usda.gov/inspection/import-export/equivalence.

record review, depending on the applicable requirements. The proposed technical-assessment and documentation services are relevant to the reliability of those supply relationships. Product-specific applicability and the importer's regulatory responsibilities will govern each engagement. (See Exhibit C.I.)[13]

PortMiami's published information on perishable cargo describes the infrastructure supporting movement of food products through the region. It provides an objective commercial context for the proposed Miami headquarters and the plan's food-trade focus. The location supports access to a relevant operating environment; the preventive services, training, and proposed expansion supply the broader basis for the endeavor's importance. (See Exhibit C.I.)[14]

G - Planned employment reinforces the implementation model

The business plan forecasts four total positions in Year 1 and fifteen in Year 5, including Dr. Ferreira. It therefore anticipates three other positions in the initial structure and fourteen other positions by Year 5. Staffing is to develop with project demand and service requirements. This employment component reinforces the intended delivery capacity and provides a defined route for additional professionals to participate in the work. (See Exhibit C.I.)

The employment plan's relevance lies principally in what the workers will do. Technical specialists will support prevention and implementation; auditors and regulatory personnel will support assessments and follow-up; laboratory and quality-control personnel will support sampling and verification; and operational personnel will help coordinate engagements. This structure can extend the reach and continuity of the technical work. Its contribution to national importance is supplementary to the preventive public-health and supply-chain effects already described.

Taken together, the plan and official sources support an individualized first-prong finding. The proposed activity is implementation of preventive systems in animal-origin production and trade; the delivery process includes assessment, correction, verification, and training; the intended reach grows through defined project categories and specialist personnel; and the protective effects concern consumers, workers, and supply relationships beyond the purchaser of the services. The endeavor has substantial merit and national importance within the Dhanasar framework. (See Exhibit C.I.)

5 - SECOND PRONG: Dr Ferreira is well positioned to advance the proposed endeavor

The second prong is supported by a record that develops from scientific training into public-health practice and federal sanitary oversight. The work proposed in the United States uses

[13] U.S. Food and Drug Administration, "FSMA Final Rule on Foreign Supplier Verification Programs for Importers of Food for Humans and Animals," describing hazard analysis and supplier-verification activities, subject to the rule's scope and exceptions. https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-foreign-supplier-verification-programs-fsvp-importers-food-humans-and-animals.

[14] Miami-Dade County, PortMiami, "Perishables," describing facilities and logistics for perishable cargo. Location context for the proposed headquarters and food-trade activities. https://www.miamidade.gov/portmiami/perishables.page.

capabilities already reflected in that progression: identifying animal-disease risks, interpreting technical findings, evaluating procedures, communicating requirements, and coordinating people who carry them out. The academic, institutional, and professional records substantiate the chronology summarized in her curriculum vitae.

A - Early extension and research establish a foundation in prevention and instruction

Early records document coordination of an equine mini-course and participation in the organizing committee for Veterinary Medicine Week in 2005, followed by forty hours in a health-education extension project in 2006. These activities provide the initial context for the technical instruction and preventive-health communication that later became part of her professional responsibilities. (See Exhibit C.II.)

The Federal University of Viçosa confirms that she served as a Scientific Initiation Research Fellow from March 2007 through February 2008, with a twenty-hour weekly workload, under Professor Paulo Sérgio de Arruda Pinto. The fellowship was part of the university's institutional research program in cooperation with the Minas Gerais research-support foundation. This is an institutionally documented period of supervised scientific work. It establishes the beginning of a research record that subsequently produced publications, graduate study, and technical responsibilities. (See Exhibit C.II.)

A certificate records her service as course monitor for a sixteen-hour Good Manufacturing Practices and HACCP program in April 2008. It documents early involvement in preventive food-safety instruction and complements her later experience in the verification of sanitary controls. The course-monitor role is evaluated as part of that professional development. (See Exhibit C.II.)

After receiving her veterinary degree in July 2008, Dr. Ferreira appeared as a coauthor of the 2009 article "Detection of important peptides for bovine cysticercosis diagnosis in immunoblot," published in Ciência Rural. The study addressed diagnostic limitations for bovine cysticercosis and evaluated an immunoblot method using control sera. Its subject has a direct relationship to inspection of cattle and products of animal origin: identifying infection when conventional detection is difficult. The article provides objective evidence of participation in work concerning diagnostic performance. (See Exhibit C.II.)

The publication establishes Dr. Ferreira's participation in the research team and documents the methods and findings. The relevant demonstrated capability is participation in a technically documented investigation of an animal disease with sanitary and production consequences. That capability is pertinent to reviewing diagnostic information and designing prevention-oriented assessments in the proposed endeavor.

B - Graduate training develops analytical and teaching capabilities

Her 2010 specialization in Veterinary Clinical Medicine and Surgery expanded clinical and field preparation following graduation. The specialist training is corroborated by its academic records and by persons who supervised her work. It is relevant to the ability to evaluate disease and management conditions in actual animal settings, rather than interpret laboratory information without the practical circumstances from which it arises. (See Exhibits B and C.II.)

The subsequent master's program added formal instruction in immunology, infectious diseases, epidemiological methods, research, and teaching. These subjects are pertinent to the endeavor because a sound preventive program depends on understanding the hazard and the quality of the information used to evaluate it. Dr. Ferreira's academic record establishes study of the scientific methods underlying that analysis, while the completed master's degree demonstrates that she met the program's graduate requirements. (See Exhibit B.)

She also taught an outreach course on the fundamentals of virological diagnosis in 2011. The university's Outreach Activities Registration System records her as instructor and identifies the event and workload. A separate certificate documents instruction in the same subject in 2013. These records establish actual teaching of technical material. That experience is directly relevant to the future task of explaining preventive procedures to people who must apply them, including personnel with different levels of scientific preparation. (See Exhibit C.II.)

After completing the master's program in 2012, she served on a specialization examining committee addressing ketosis in dairy herds and its relationship to body condition and milk composition. The certificate identifies the committee, student, subject, and examination date. This demonstrates participation in evaluation of applied veterinary work, a function requiring attention to methods and the connection between findings and conclusions. It is relevant to the technical review responsibilities in the proposed company. (See Exhibit C.II.)

Her 2013 coauthored papers concerning canine parvovirus and canine distemper document experimental research, controlled testing, analysis, and scientific reporting. Those methodological capabilities complement her work on livestock infections and diagnostic performance. Their contribution to the proposed endeavor is the ability to interpret technical evidence and recognize the scope and limits of experimental findings. (See Exhibit C.II.)

The record also documents service as a reviewer for sustainable-agriculture scientific events in 2013 and 2014. The 2014 certificate specifically identifies review of expanded abstracts on scholarly merit. This is evidence of work evaluating others' technical submissions. Along with the examining-committee records, it supports her capacity to scrutinize methods and technical explanations, a useful skill when reviewing an audit finding, an operating procedure, or a proposed corrective action. (See Exhibit C.II.)

C - Doctoral research and the Minnesota exchange deepen the relevant scientific record

During the doctoral period, Dr. Ferreira pursued coursework in diagnostic methods, experimental design, molecular epidemiology, and advanced animal virology. The transcript shows a coherent course of study in mechanisms and detection of animal infection. In operational prevention, the relevance is the ability to understand why a biological hazard matters and evaluate the evidence used to monitor it. That preparation supplies a scientific basis for the disease-monitoring, risk-assessment, and technical-reporting functions described in the plan. (See Exhibits B and C.I.)

The 2014 paper "Surveillance of Neutralizing Antibodies Against Bovine Herpesvirus 1 in Cattle Herds from Different Farming Property Systems" documents research concerning infection and herd conditions. The submitted paper concerning viral DNA in oophorous cumulus complexes addresses another aspect of bovine herpesvirus detection. These publications show that her research involved naturally occurring animal infections and biological samples, in addition to laboratory experiments. They support the ability to evaluate findings in relation to production settings. (See Exhibit C.II.)

CAPES, Brazil's federal agency supporting graduate education, confirms her doctoral exchange at the University of Minnesota, Saint Paul, from September 2014 through July 2015. The official declaration identifies the fellowship period and host institution. The experience was part of her Brazilian doctoral development; it was not a separate United States degree. It establishes a documented period of work in an American academic environment and experience participating in international scientific activity. (See Exhibit C.II.)

Language-study materials include a University of Minnesota research-writing course completed in 2015. Together with the exchange, the course documents experience communicating in an American academic setting. Clear written reporting and instruction will also be necessary in the proposed assessments, procedures, and training. (See Exhibits A and C.II.)

The 2015 book "Veterinary Microbiology: Practices," published by the Federal University of Viçosa's publisher, lists Dr. Ferreira among its authors. The submitted publication materials document her participation in producing instructional microbiology content. This authorship complements the teaching record and supports the future preparation of technical explanations and guidance. (See Exhibit C.II.)

In 2016, she completed the doctorate in Veterinary Medicine. The advanced academic record thus reflects sustained study and research in a field directly related to the proposed activities. The significance under this prong goes beyond the existence of the diploma: the coursework, publications, exchange, and instructional work show the scientific and communication capabilities that she can apply to implementation of preventive systems. (See Exhibits B and C.II.)

D - Academic leadership in 2016 and 2017 demonstrates organizational responsibility

Dr. Ferreira began teaching at the Guanambi Higher Education Center on April 7, 2016. The employment materials include institutional confirmation, work-card entries, and a resignation request. The work-card entry records termination on February 9, 2017, following the January resignation request. These documents identify the employment period independently of the broader description in her curriculum vitae. (See Exhibit C.II.)

Her curriculum describes teaching general microbiology, veterinary microbiology, and immunology, as well as coordination of the Veterinary Medicine program and involvement in pedagogical and laboratory planning. The institutional employment materials establish the academic relationship; the curriculum and Mr. Mesquita's firsthand account explain its professional context. The combined evidence supports experience organizing technical instruction and coordinating academic responsibilities. (See Exhibits A and C.II.)

Those responsibilities bear directly on the proposed management and training functions. Coordinating an academic program requires arranging technical content, allocating responsibilities, and communicating across different functions. In Integra's plan, Dr. Ferreira will organize technical projects, review specialist outputs, supervise staff, and explain preventive requirements to operational teams. The connection is the documented experience in technical coordination and instruction.

E - Dairy research and municipal service connect analysis with public-health practice

In 2018, Dr. Ferreira was the first-listed author of "Latent bovine herpesvirus 1 and 5 in milk from naturally infected dairy cattle," published in the Journal of Veterinary Medical Science. The study examined biological information from dairy cattle and the use of milk samples in detecting latent infection. It provides direct evidence of her role in research concerning herd health and sampling in a production setting. That experience is relevant to the monitoring and technical-evaluation components of the proposed services. (See Exhibit C.II.)

The 2018 study concerns bovine infection and herd health. It demonstrates analysis of infection that may not be apparent from outward clinical condition and interpretation of diagnostic information from field samples. Those are relevant capabilities for animal-health monitoring and for evaluating what a particular test or observation can establish in a preventive program.

The Municipal Government of Diamantina confirms Dr. Ferreira's service as a veterinarian from December 14, 2018, through June 5, 2019. Its declaration identifies the appointment and describes the statutory functions of the position, including public-health and sanitary responsibilities. Her curriculum vitae specifies zoonosis-control work involving cutaneous and visceral leishmaniasis in urban and rural areas. This period connects the research background with public-service activity addressing the animal-human health interface. (See Exhibits C.II and A.)

The 2019 article "Molecular Methodology for the Detection of the Leishmania Genus in Different Biological Samples Extracted from Dogs" lists Dr. Ferreira as coauthor and identifies her affiliation with the Municipality of Diamantina. By comparing diagnostic methods and samples, it adds objective scientific evidence related to the zoonotic-disease work described for her municipal service. This connection is particularly relevant to the monitoring and epidemiological-support functions in the proposed plan. (See Exhibit C.II.)

F - The 2019 Navy service adds experience in an institutional food environment

Official Navy records establish her incorporation into volunteer military service on June 10, 2019, promotion to Second Lieutenant in December 2019, and discharge from active service effective December 18, 2019, followed by reserve status. This is the active-service period relevant to the professional chronology preceding her entry into MAPA. (See Exhibit C.II.)

Her curriculum vitae describes veterinary responsibilities involving food-quality control and zoonosis control in the Navy's food-supply environment. The military records corroborate the service period and assignments. The relationship to the proposed endeavor is practical exposure to food handling and sanitary responsibility within an organized institution, together with experience working within defined procedures and chains of responsibility. (See Exhibits A and C.II.)

That institutional experience complements, rather than replaces, the later federal-inspection record. The proposed company will need clear allocation of technical tasks, documentation of activities, and follow-up on findings. Work in regulated public institutions is relevant to those responsibilities.

G - Federal inspection service since December 2019 is directly related to the endeavor

Government personnel declarations establish entry into federal public service on December 27, 2019, and identify Dr. Ferreira as a permanent statutory employee of the Ministry of Agriculture and Livestock, working forty hours per week as a Federal Agricultural Inspection Auditor. A February 2026 service-time declaration corroborates more than six years of effective service in that employment relationship. This is objective evidence of sustained professional responsibility in the field closest to the proposed United States activities. (See Exhibit C.II.)

FEDERAL EXECUTIVE BRANCH

DECLARATION

This is to certify that **HANNA CAROLINA CAMPOS FERREIRA**, CPF No. **067.410.916-37**, Integrated Personnel Management System (SIAPE) registration No. **1159674**, is a federal public servant of the **MINISTRY OF AGRICULTURE AND LIVESTOCK**, CNPJ **00.396.895/0097-77**, under the **SINGLE LEGAL REGIME – ACTIVE PERMANENT (STATUTORY 01)**, having entered the federal public service on **12/27/2019**.
It is also hereby certified that the public servant currently holds the position of **FEDERAL AGRICULTURAL TAX AUDITOR**, with a work schedule of 40 hours per week.

The Ministry of Agriculture and Livestock is identified by its Portuguese acronym, MAPA. Its federal inspection work involving products of animal origin provides the setting for Dr. Ferreira's experience. Her curriculum vitae describes auditing and inspection of federally registered slaughterhouses, dairy establishments, honey and egg processing facilities, and animal-feed production operations, together with sanitary certification and technical supervision. The government employment records establish her status; the separate audit declaration and materials provide specific confirmation of important activities performed in that setting. (See Exhibits A and C.II.)

This experience is closely related to the plan's food-safety, sanitary-assessment, and audit-readiness work. The relevant functions involve examining an establishment's operations and records, understanding the significance of a sanitary finding, and identifying the preventive or corrective measures that require attention. Her proposed role will apply that technical preparation in assistance to United States operations under the rules governing each engagement. The connection is between the substance of the work performed and the substance of the work proposed. (See Exhibits A, C.I, and C.II.)

The CV also describes management and semiannual refresher training for a team comprising two veterinarians and approximately twenty-five sanitary inspection assistants. These responsibilities are relevant because the proposed company depends on technical supervision and communication with operational personnel. They connect the inspection experience to the plan's personnel-training component. (See Exhibit A.)

H - The 2021 publication documents continued scientific work

Dr. Ferreira's research record continued after entry into federal service. She is the first-listed author of the 2021 article "Apoptosis in the late replication phase of Bovine alphaherpesvirus 1 in experimentally infected calves," published in the Brazilian Journal of Microbiology. The study addresses viral reactivation and cellular responses in an experimental animal setting. Its author-

contribution statement identifies her participation in material preparation, data collection, and analysis, and identifies her and Abelardo Silva Júnior as the authors of the first manuscript draft. The publication therefore documents specific scientific responsibilities and a completed output, together with continued work on disease mechanisms. (See Exhibit C.II.)

Author contributions All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by Hanna Carolina Campos Ferreira, Elaine Nery de Araújo, and Nívia Carolina Lopes Rosado. The first draft of the manuscript was written by Hanna Carolina Campos Ferreira and Abelardo Silva Júnior. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

The publication establishes an additional completed scientific output and continued engagement with experimental analysis after she entered federal service. Its relevance is the combination of scientific interpretation with inspection experience. A technical assessment requires evaluation of findings and their limitations; the publication record demonstrates practice producing analysis that can be examined by other specialists. (See Exhibit C.II.)

I - International audits from 2022 through 2025 provide specific official corroboration

The strongest activity-specific government evidence is the declaration of the 4th Inspection Service for Products of Animal Origin, a MAPA unit. Its coordinator, Marcelo Zordan Lucas, confirms that Dr. Ferreira participated as a ministry representative in ten audits conducted by international official inspectors at establishments under the unit's jurisdiction. The declaration is accompanied by audit-presentation materials identifying relevant visits and technical teams. (See Exhibit C.II.)

The chronology begins in 2022 with official delegations from Malaysia, Indonesia, and the United States at cattle slaughterhouses. In 2023, it identifies an official Mexican delegation at a cattle slaughterhouse. In 2024, it identifies delegations from Chile at an animal-origin ingredient establishment and from the European Union, Peru, and China at cattle slaughterhouses. In 2025, it identifies a Mexican delegation at a dairy-processing establishment and a Malaysian delegation at a cattle slaughterhouse. These are the countries, products, and periods specified in the official declaration.

MINISTRY OF AGRICULTURE AND LIVESTOCK – MAPA
SECRETARIAT OF AGRICULTURAL DEFENSE – SDA
DEPARTAMENT OF INSPECTION OF PRODUCTS OF ANIMAL ORIGIN – DIPOA
4TH INSPECTION SERVICE FOR PRODUCTS OF ANIMAL ORIGIN – 4º SIPOA

I hereby declare, for all due purposes, that Hanna Carolina Campos Ferreira, who holds the position of Federal Agricultural Inspection Auditor, participated as a representative of the Ministry of Agriculture and Livestock in the following audits conducted by international official inspectors at establishments manufacturing products of animal origin under the jurisdiction of the 4th Inspection Service for Products of Animal Origin (Minas Gerais, Brazil):

Audit conducted by an official delegation from Mexico at a milk and dairy products processing plant (2025);

Audit conducted by an official delegation from Malaysia at a cattle slaughterhouse (2025);

Audit conducted by an official delegation from Chile at an establishment manufacturing ingredients of animal origin (2024);

Audit conducted by an official delegation from the European Union at a cattle slaughterhouse (2024);

Audit conducted by an official delegation from Peru SIF 2471 at a cattle slaughterhouse (2024);

Audit conducted by an official delegation from China at a cattle slaughterhouse (2024);

Audit conducted by an official delegation from Mexico at a cattle slaughterhouse (2023);

Audit conducted by an official delegation from Malaysia at a cattle slaughterhouse (2022);

Audit conducted by an official delegation from Indonesia at a cattle slaughterhouse (2022);

Audit conducted by an official delegation from the United States of America at a cattle slaughterhouse (2022).

The United States audit materials identify a September 15, 2022 visit involving USDA's FSIS and name Dr. Ferreira as the veterinarian in charge at the establishment. This gives her proposed trade-readiness services a documented connection to an actual review involving United States sanitary authorities. The evidence identifies her role, the date, the agency, and the production setting. It substantiates experience in the scrutiny of animal-origin operations associated with access to the United States market. (See Exhibit C.II.)

The other visits add breadth to the record. They involve several foreign official systems and more than one category of animal-origin production. Their significance is experience participating in technical assessments where production practices and sanitary documentation are examined against market-access and protection requirements. Such experience is relevant to helping a client prepare its procedures and records for review, identify discrepancies, and implement appropriate corrections.

These are completed activities corroborated by a signed government declaration and accompanying audit materials. The evidence establishes repeated professional participation in review of actual establishments, including responsibility identified in the United States visit. For the second prong, those activities carry particular weight because the future services concern the same kinds of

operating conditions, preventive procedures, records, and readiness questions. The record supports the ability to organize and carry out related technical work without assigning her an undocumented industry-wide result. (See Exhibits C.I and C.II.)

The range of visits also supports adaptability within the defined field. The declaration covers cattle slaughter, dairy processing, and animal-origin ingredients, as well as review by several foreign official systems. That is relevant to a plan requiring Dr. Ferreira to evaluate different products and operating environments while maintaining a consistent preventive approach. The proposed breadth has a factual basis in her experience with these categories rather than resting solely on the number of services listed in the plan. (See Exhibit C.II.)

J - Leadership and continuing professional activity support technical delivery

The submitted personnel materials identify Dr. Ferreira's commissioned leadership role associated with the regional technical unit in Montes Claros, with appointment effective February 18, 2025. That development follows years of federal inspection service. The responsibilities described in the curriculum include technical management and staff training. Together, these records support the ability to organize work, supervise personnel, and maintain attention to sanitary procedures, capabilities directly relevant to her planned Technical Director responsibilities. (See Exhibits C.II and A.)

A certificate documents her role as speaker at the August 2025 Congress on Innovation, Technology and Sustainability for Public Management in Montes Claros. It corroborates continued professional activity in communicating technical knowledge and complements the earlier instructional record. The recent leadership appointment and speaking activity show continuing development of responsibilities pertinent to technical direction and workforce instruction. (See Exhibit C.II.)

Her curriculum lists continuing training in ante- and post-mortem procedures, sanitary certification, animal-feed inspection, HACCP verification, and requirements associated with meat exports to the United States. These subjects closely track the proposed services. Read together with the government appointment and audit materials, they demonstrate an ongoing professional focus on the controls and inspection questions addressed by the plan. (See Exhibits A and C.II.)

Professional-registration evidence identifies her standing with the Regional Council of Veterinary Medicine of Minas Gerais ("CRMV-MG"), the Brazilian professional registration body applicable to her veterinary practice. Membership materials also identify affiliation with the Brazilian College of Veterinary Food Hygienists ("CBMVHA"). The records corroborate her professional connection to veterinary medicine and food hygiene. (See Exhibit C.II.)

K - The support letters explain abilities observed by their authors

The letters of support are valuable because they identify how their authors know Dr. Ferreira and describe capabilities supported elsewhere in the record. Their principal use is to explain her preparation for the endeavor. Legal conclusions in a recommendation remain for USCIS to decide, while the author's firsthand observations can illuminate the significance of the academic, research, and employment evidence.

In his March 6, 2026 letter, Dr. Ernani Paulino do Lago identifies a longstanding academic relationship beginning in 2007. He describes serving as her specialization advisor, master's and doctoral co-advisor, and master's examining-committee member. His letter and accompanying curriculum establish his veterinary and academic background and his basis for evaluating her development. (See Exhibit C.II.)

He explains the nature of her research and leadership:

> *"Her participation in leadership activities for the team responsible for managing the animals used in experiments also stands out, promoting interaction among professionals from different sectors of the Veterinary Department and broadening the exchange of knowledge within the university environment."*

That observation has a concrete connection to the proposed role. Animal experiments require coordination, continuity of procedures, and communication among participants. The plan likewise requires Dr. Ferreira to organize technical execution and supervise staff working across preventive-health and food-safety functions. His testimony supports those abilities from work he observed, rather than assuming them from the doctorate alone.

Dr. do Lago also emphasizes her combination of laboratory knowledge and field experience and her capacity to reach conclusions grounded in practical conditions. This directly relates to the proposed assessments. A finding must be technically sound and also understandable in the operating environment where a control will be applied. His account complements the publications and academic records that document the scientific side of that capability.

Marcelo Andrade Botelho Mesquita's March 6, 2026 letter supplies a different perspective. His accompanying resume identifies education and experience in business administration and higher education. He states that he recommended Hanna to teach in the Guanambi Veterinary Medicine program and followed her subsequent professional development. The institutional employment materials corroborate the teaching relationship described in his letter. (See Exhibit C.II.)

Mr. Mesquita's testimony supplies firsthand context for her recruitment into teaching and subsequent professional development. His business-administration and higher-education background is relevant to the academic and organizational perspective described in the letter. The independent institutional records corroborate the appointment about which he writes. This combination supports

professional reputation and organizational experience within his demonstrated basis of knowledge. (See Exhibit C.II.)

Dr. José de Oliveira Pinto's March 30, 2026 letter provides particularly detailed technical observations. He identifies his veterinary graduate training and his long experience in the Large Animal Clinic and Surgery sector at the Federal University of Viçosa. He describes directly supervising Dr. Ferreira's hospital and field work during specialization and later collaborating in doctoral experiments. (See Exhibit C.II.)

His account specifies the work he observed:

> *"Subsequently, our collaboration deepened during the doctorate degree, where we worked in mutual assistance on complex experiments. I had the opportunity to follow Dr. Ferreira's methodological rigor in conducting critical research on the pathogenesis and diagnosis of viral diseases in cattle, with a specific focus on Bovine Herpesvirus type 1 (BoHV-1)."*

He further identifies cell-culture and molecular-analysis capabilities and her ability to translate scientific material into practical guidance. Those observations are consistent with her coursework, bovine-herpesvirus papers, and participation in the microbiology book. They are relevant to the plan's technical reporting, monitoring, training, and preventive-method functions. The identified activities supply the factual basis for his support.

Taken together, the letters reinforce different parts of the same record. Dr. do Lago explains academic development and team coordination; Mr. Mesquita corroborates the professional path into teaching; and Dr. Pinto explains observed laboratory and field rigor. Their accounts support the relationship between documented experience and future technical duties.

L - The plan assigns demonstrated capabilities to defined implementation tasks

The business plan identifies a professional service model grounded in Dr. Ferreira's inspection, audit, research, and teaching experience. Facility evaluations and sanitary reviews correspond to her work in animal-origin production. Animal-health programs correspond to her research and municipal veterinary practice. Technical auditing and readiness correspond to the documented international visits. Personnel instruction corresponds to her teaching, technical communication, and supervisory responsibilities. These connections explain how the plan translates completed related work into future services. (See Exhibits A, B, C.I, and C.II.)

The plan also sets out the steps of delivery. Facility evaluation and operational review will establish the conditions to be assessed. Documentation analysis and compliance verification will identify the relevant procedures and gaps. Corrective-action planning and technical reporting will provide the basis for implementation. Monitoring and staff training will support continued execution. This is a defined process of technical work whose principal functions are already represented in her professional record. (See Exhibit C.I.)

The initial organization assigns her technical oversight together with a food-safety specialist, a veterinary-public-health specialist, and a marketing and business-development specialist. Later stages introduce dedicated regulatory coordination, auditing, laboratory and quality-control functions, and operational support. The plan thus separates technical execution from business development and administrative coordination. Expansion is tied to demand and project volume, and the first-year staffing assumptions allow phased entry rather than assuming that every position must operate for a full twelve months. (See Exhibit C.I.)

Dr. Ferreira's proposed responsibilities include reviewing reports and compliance documentation, coordinating HACCP and audit projects, supervising specialists, maintaining professional relationships, and directing operations. Her recent regional technical leadership and experience coordinating inspection personnel bear directly on those tasks. The evidence supports the technical and supervisory core of the role; the plan identifies the additional business-development function needed to acquire engagements. (See Exhibits A, C.I, and C.II.)

Client acquisition will use the channels described in the plan: direct industry outreach, food-safety and agricultural events, educational presentations, digital marketing, and relationship development with manufacturers, laboratories, and agricultural organizations. Those are proposed activities. Their evidentiary value is that the plan identifies the intended customers and the means of approaching them, while the completed professional record establishes the expertise to be offered. (See Exhibit C.I.)

The sales assumptions further define the model. First-year unit prices are $15,000 for food-safety and USDA-support projects, $12,000 for HACCP and preventive-control projects, $18,000 for animal-health programs, and $10,000 for technical-audit assessments. Applied to the respective first-year volumes of ten, eight, seven, and seven units, those assumptions produce the stated $442,000 revenue forecast. The staffing plan then expands as service volume develops. These figures permit evaluation of the intended workload and pricing structure; they are conditional forecasts rather than completed sales. (See Exhibit C.I.)

M - Documented resources and the financial plan support launch preparation

The plan anticipates an initial investment of approximately $50,000, allocated as $43,500 in startup expenses and $6,500 in working capital. The categories include operational setup, office infrastructure, technical resources, insurance, licensing, and marketing. This is the proposed budget for the venture, distinct from the statutory and regulatory requirements for the immigration classification. (See Exhibit C.I.)

The supporting financial record provides evidence of sustained professional earnings and accumulated resources. Payroll statements document gross monthly compensation of R$21,453.97 in December 2025, R$21,513.75 in January and February 2026, R$22,984.67 in April 2026, and R$22,967.67 in May 2026. Tax returns corroborate income and reported assets. Their relevance here is the established financial history associated with her professional activity. (See Exhibit C.II.)

The investment materials identify R$120,837.99 in invested and investment-account resources as of February 24, 2026. That figure provides a documented savings base for launch planning. The record distinguishes those resources from real-property interests and from the contemplated contribution denominated in United States dollars. The evidence establishes accumulated resources; the initial investment remains a proposed allocation requiring implementation. (See Exhibits C.I and C.II.)

The break-even assumptions provide another useful planning measure when read arithmetically. Monthly fixed costs of $30,175, average revenue of $13,812.50 per service unit, and variable costs of $1,657.50 yield a contribution margin of $12,155 and a break-even volume of approximately 2.48 average units per month. For whole engagements at that assumed mix, approximately three would be needed. The corresponding continuous revenue estimate is approximately $34,290. This interpretation uses the plan's stated inputs and avoids treating the rounded two-unit entry as proof that two average engagements cover the fixed costs. (See Exhibit C.I.)

These forecasts receive weight as planning assumptions alongside the independently documented professional record. The second-prong claim rests principally on the close relationship between her completed technical responsibilities and the future work, supported by the defined organization and actual earnings and savings evidence. Dhanasar recognizes uncertainty in entrepreneurial undertakings, and the Policy Manual directs consideration of the evidence in the aggregate. The appropriate inquiry is whether she is well positioned to advance the work, with financial preparation assessed in its documented scope. See 26 I&N Dec. at 890; 6 USCIS-PM F.5(D)(6).

N - The evidence satisfies the positioning inquiry as a whole

The record contains several completed achievements pertinent to this endeavor: advanced degrees, published research, authorship of instructional material, documented teaching and technical evaluation, public-service appointments, a sustained federal inspection role, repeated official international-audit participation, and appointment to technical leadership. These activities establish progressively developed capability in the functions the United States plan requires. (See Exhibits A, B, and C.II.)

The publications are completed scientific outputs; the teaching certificates establish actual instruction; the audit declaration identifies specific completed professional activities; and the personnel documents establish sustained service and leadership. The letters explain capabilities observed in those settings and are corroborated by the underlying records. Thus, the claim of readiness has a factual foundation beyond the graduate credentials or the proposed company title.

The entrepreneur guidance is particularly relevant to the relationship between experience and the intended business. Dr. Ferreira's record includes the technical assessments, regulatory exposure, instruction, and supervision that will form its core services. Her proposed central role is defined in

the plan, and the plan allocates additional responsibilities to specialist and support personnel. The resulting connection is specific to the work she proposes to perform. See 6 USCIS-PM F.5(D)(6). (See Exhibits C.I and C.II.)

The inquiry remains prospective. Contracts, investment commitments, ownership records, and other types of startup evidence can be probative when present; Dhanasar does not turn the listed considerations into a requirement that every planned undertaking already possess each form of evidence. Here, the qualifying support is the documented related activity, firsthand professional assessment, defined service-delivery model, and demonstrated financial history. The evidence is offered for those propositions, with proposed relationships and financial forecasts evaluated as future activities. See 26 I&N Dec. at 890; 6 USCIS-PM F.5(D)(6).

Considered together, the materials establish that Dr. Ferreira possesses the scientific preparation, practical inspection and audit experience, technical judgment, and supervisory capabilities to organize and advance the endeavor. The plan applies those capabilities to work in the same professional field. The second prong is therefore satisfied by the related and corroborated record, evaluated under the preponderance standard.

6 - THIRD PRONG: On balance waiving the job offer and labor certification requirements would benefit the United States

The balance favors permitting Dr. Ferreira to organize and direct the proposed preventive-services enterprise. The contribution combines technical judgment developed through research and inspection, experience with official international review of animal-origin establishments, and the capacity to instruct and supervise personnel implementing preventive measures. The plan will apply that preparation through independent engagements and a developing team. These circumstances support waiver when weighed against the ordinary interests served by recruitment for a specified employment opportunity. Dhanasar, 26 I&N Dec. at 890-91. (See Exhibits B, C.I, and C.II.)

A - The independent undertaking makes a conventional sponsored vacancy an impractical fit

The proposed work requires Dr. Ferreira to establish and direct the organization through which the technical services will be delivered. She will oversee the standards applied in projects, coordinate specialists, review findings, supervise training, and guide operations and client relationships. Those responsibilities arise from the undertaking she proposes to build. They are described together with the service categories, phased organization, and field-service model. (See Exhibit C.I.)

A position offered by one production establishment could include some relevant duties, such as managing that establishment's internal safety procedures. It would not encompass the proposed activity in its full form: organizing a service structure that can assess different operations, implement controls for their particular risks, instruct their personnel, and expand through additional specialists. The plan places those responsibilities at the center of her contribution.

Labor certification ordinarily tests the availability of United States workers for a specified job opportunity. That process has value for the employment arrangement it evaluates. Here, the relevant question is whether requiring such an arrangement would adequately address the benefit of permitting this professional to originate and direct the proposed undertaking. The independent project structure and her central technical role make a conventional third-party vacancy an impractical fit for the contribution described in the record. Dhanasar expressly recognizes that the nature of an entrepreneurial endeavor can be relevant to this inquiry. 26 I&N Dec. at 890 n.10.

This reasoning is specific to the plan. The work will combine project selection, technical supervision, instruction, and coordination of different service functions. Those responsibilities will continue across engagements rather than terminate with the completion of one customer's assessment. The waiver will permit pursuit of that organization and delivery model while leaving the requirements governing its professional services intact. (See Exhibit C.I.)

B - The United States would benefit even if qualified domestic workers are available

The balance does not require a showing that United States professionals lack relevant qualifications. Dhanasar permits consideration of the petitioner's contribution even assuming that qualified domestic workers are available. 26 I&N Dec. at 891. The benefit here is the addition of her documented experience to a service structure designed to strengthen preventive implementation in production and trade.

Her federal inspection and international-audit record is especially pertinent. The signed declaration identifies ten audits in animal-origin establishments from 2022 through 2025. The September 2022 FSIS materials identify her as veterinarian in charge during a United States-related visit. This experience provides a practical basis for evaluating how operating procedures and records are examined in official sanitary review. Her research background adds the capacity to interpret biological information and the limitations of diagnostic findings. Her teaching and leadership record adds experience communicating technical requirements and coordinating the people who apply them. (See Exhibit C.II.)

The proposed services require that combination in practice. An assessment can identify a deficient record or procedure, but correction also requires understanding the hazard, selecting an appropriate control, explaining its execution, and checking whether it operates as intended. Dr. Ferreira's preparation supports those connected tasks. The United States can benefit from having an additional technically prepared professional organize their delivery across relevant operations, even where other specialists also provide valuable services. (See Exhibits B, C.I, and C.II.)

The plan also provides a route for other professionals to participate. Food-safety and veterinary-public-health specialists are included in the initial structure; later phases add regulatory coordination, auditing, laboratory and quality-control work, and operational support. The proposed enterprise will require those capabilities as project volume develops. Its design therefore includes the organization

and supervision of additional professional activity, alongside the founder's own technical work. (See Exhibit C.I.)

Training extends this complementary contribution to the customer's employees. The plan calls for instruction related to preventive controls, procedures, and corrective action. Personnel who continue to operate the establishment can apply the knowledge after the particular consulting engagement. The benefit to the United States thus includes technical assistance to businesses and the intended strengthening of the workforce responsible for carrying out sanitary measures within them. (See Exhibit C.I.)

C - The documented contribution warrants waiver without depending on an emergency claim

The official food-safety and animal-health sources establish continuing preventive needs and recognized implementation functions. Federal regulations require covered operations to address hazards and maintain the relevant controls. The One Health framework identifies prevention, monitoring, information sharing, and workforce preparation as linked public-health objectives. These sources explain why competent implementation has present value. The connection to this petition is the defined set of services through which Dr. Ferreira proposes to apply her related preparation. (See Exhibit C.I.)

The third-prong analysis gives weight to the combination of those functions with the particular professional record. She has progressed from research and clinical training to instruction, institutional and municipal responsibilities, sustained federal inspection, and repeated international audits. The future work follows that progression: she will coordinate preventive assessments and implementation in animal-origin operations and supervise the technical personnel carrying them out. (See Exhibits A, B, C.I, and C.II.)

Her related experience is therefore available for practical application to an existing need. The proposed implementation will develop through the company's projects and staffing phases. The petition seeks permission to pursue that professional contribution independently, supported by the record of capabilities already acquired. The balance can favor waiver on that basis without attributing the resolution of a nationwide emergency to one business or presuming immediate achievement of every forecast.

D - The planned structure supports the public and workforce interests relevant to the balance

The company anticipates three positions beyond Dr. Ferreira in its initial structure and fourteen beyond her by Year 5. These are demand-dependent projections. Their significance to the balance is the planned organization of additional technical and operational capacity, with responsibilities tied to service delivery. The waiver request supports creation and direction of that structure rather than recruitment solely into an existing employer's vacancy. (See Exhibit C.I.)

The public benefit will also extend through the preventive systems receiving assistance. Consumers and workers rely on sound controls in production regardless of the contractual arrangement under which a specialist helped implement them. The plan's assessment, corrective-action, verification, and training functions concern that protective capacity. The benefit is linked to the functions and production settings identified in the record.

Professional and regulatory requirements will continue to govern execution. Florida veterinary licensure rules and federal HACCP and preventive-control qualifications apply according to the actual activity and the individual assigned to it. The proposed personnel structure separates technical functions, and implementation must allocate regulated work accordingly. The requested immigration waiver concerns the job-offer and labor-certification requirements; it preserves the obligations that protect the public in the services themselves.

E - Third Prong Conclusion

On balance, waiving the job-offer and labor-certification requirements would benefit the United States. Dr. Ferreira's graduate education, federal inspection service, international-audit experience, and technical leadership provide a documented foundation for the proposed preventive food-safety and animal-health services. Her role requires her to organize and direct that work across multiple establishments, making a conventional position with a single employer an impractical fit for the undertaking.

The United States would benefit from her contribution even assuming that qualified domestic workers are available. The planned participation of additional specialists and training of establishment personnel will complement her technical work and support continued implementation of preventive controls. Her central role, relevant professional record, and proposed delivery structure together justify waiver when weighed against the interests ordinarily served by labor certification. The record therefore satisfies the third prong of *Matter of Dhanasar*, 26 I&N Dec. 884, 890–91 (AAO 2016). (See Exhibits B, C.I, and C.II.)

7 - FINAL CONSIDERATIONS - Conclusion

The evidence establishes Dr. Ferreira's eligibility for EB-2 classification and the requested National Interest Waiver by a preponderance of the evidence.

1- **First, she meets the objective classification requirement as a member of the professions holding an advanced degree**. Her master's degree and doctorate in Veterinary Medicine, supported by academic records and an independent evaluation, relate directly to the technical substance of the proposed work. (See Exhibit B.)

2- **Second, the endeavor has substantial merit and national importance**. It will apply preventive systems in animal-origin production and trade through assessments, controls, correction, verification, and staff instruction. The plan defines four service categories, projected engagement volumes, and a phased technical team. The official sources corroborate the public-protection functions served by those activities and their significance to the people and supply relationships beyond the direct customer. (See Exhibit C.I.)
3- **Third, Dr. Ferreira is well positioned**. Her record progresses from scientific and clinical training to academic leadership, municipal public-health practice, institutional food responsibilities, sustained federal inspection service, and documented international audits. Publications, instructional records, and firsthand support letters corroborate the capabilities she proposes to apply. The business plan identifies how those abilities will be organized into defined services. (See Exhibits A, B, C.I, and C.II.)
4- **Finally, the balance favors waiver.** The proposed contribution requires her to establish and direct a technical enterprise serving multiple operations, and the country can benefit from that added preventive capacity even where qualified domestic professionals are available. Its staffing and training model provides a complementary route for additional professional participation.

For these reasons, Dr. Hanna Carolina Campos Ferreira respectfully requests approval of her Form I-140 petition for EB-2 classification under INA section 203(b)(2)(A) and a National Interest Waiver under INA section 203(b)(2)(B)(i).

Thank you for your consideration.

Respectfully submitted,



Otavio Haverroth Silva

California Bar # 343486

Exhibit list

Exhibits:	Pages:
Exhibit A	
Curriculum Vitae	1-15
Exhibit B - Eligibility Criteria: Advanced Degree	
Bachelor’s Degree in Veterinary Medicine	16-35
Master of Science (M.Sc.) Diploma – Veterinary Medicine	36-44
Doctor of Science (Ph.D.) Diploma – Veterinary Medicine	45-53
Postgraduate Specialization Certificate (Graduate-Level) – Veterinary Clinical and Surgical Sciences	54-60
Academic evaluation	61-69
Exhibit C.I - First Prong - Substantial Merit and National Importance	
Business/Professional plan	70-129
Legal Research about the National Importance	130-222
Exhibit C.II - Second Prong - Well Positioned to Advance the Proposed Endeavor	
Professional License and Certification in Veterinary Medicine in Brazil	223-225
Employment Record – Academic Leadership and Teaching Position (Faculty of Veterinary Medicine) and Brazilian Work and Social Security Card (CTPS)	226-244
Official Declaration of Federal Public Service Time – Ministry of Agriculture (including leadership function)	245-261

Professional Experience – Municipal Government Veterinary Officer (City of Diamantina) 262-264

Official Military Incorporation Ordinance – Brazilian Navy 265-323

Official CAPES Declaration Confirming Doctoral Research Fellowship at the University of Minnesota 324-326

Scientific Research Fellowship – Undergraduate Research Scholarship (PIBIC/UFV) 327-329

Certificate of Completion – Italian Language and Culture Course (84 Hours) 330-332

Courses of English 333-346

Research in Veterinary Science - In vitro inhibition of canine distemper virus by flavonoids and phenolic acids: Implications of structural differences for antiviral design 347-354

Surveillance of Neutralizing Antibodies Against Bovine Herpesvirus 1 in Cattle Herds from Different Farming Property Systems 355-361

Detection of Important Peptides for Bovine Cysticercosis Diagnosis in Immunoblot 362-372

Antiviral Potential of Quercetin in Canine Parvovirus 373-385

Presence of the Viral DNA in Oophorous Cumulus Complexes of Cows Clinically Healthy and Naturally Infected by Bovine Herpesvirus 1 (BoHV1) 386-391

Latent Bovine Herpesvirus 1 and 5 in Milk from Naturally Infected Dairy Cattle 392-395

Apoptosis in the late replication phase of Bovine alphaherpesvirus 1 in experimentally infected calves 396-401

Molecular Methodology for the Detection of the Leishmania Genus in Di!erent Biological Samples Extracted from Dogs 402-410

Published Book – Veterinary Microbiology: Practical Applications 411-419

Academic Leadership and Extension Project Participation Documentation	420-423
Certificate of Courses Taught – University Extension Programs (RAEX/UFV)	424-428
University Extension Activity Participation – Federal University of Viçosa (UFV)	429-431
Professional Recognition and Academic Engagement Documentation	432-441
Conference Participation and Research Presentation Certificates	442-445
Conference Participation and Research Presentation Certificates	446-481
Conference Participation and Research Presentation Certificates	482-517
Certificate of Participation as Speaker – III Congress on Innovation, Technology and Public Sustainability (CINTECS)	518-520
Ad Hoc Reviewer and Scientific Event Participation Certificates	521-525
Service on Academic Examination Committees (Thesis and Residency Boards)	526-530
International Government Audit Participation	531-583
Professional Association Membership – Brazilian College of Veterinary Hygienists of Food (CBMVHA)	584-604

Exhibit C.II - Second Prong - Letters of Support and Resume

Dr. José de Oliveira Pinto	605-640
Dr. Ernani Paulino do Lago	641-666
Marcelo Andrade Botelho Mesquita, MSc	667-680

Exhibit C.II - Second Prong - High Salary and Financial Feasibility

Payroll Statement	681-695
Tax Return 2024 and 2025	696-751
Evidence of viability of Business Plan	752-764

Exhibit D - Personal Documents

Hanna Carolina Campos Ferreira’s Passport	765-768
Hanna Carolina Campos Ferreira’s Birth Certificate	769-771
Hanna Carolina Campos Ferreira’s Copy of I-94	772
Hanna Carolina Campos Ferreira’s Evidence of Legal Status	773

Exhibit A

Email: hannaccf@gmail.com

Hanna Carolina Campos Ferreira

Telephone: (31) 99642-4522

Veterinarian, Federal Agricultural Inspection Auditor for the Ministry of Agriculture and Livestock, *Doctor of Science* and *Master of Science* in Veterinary Medicine, Graduate Degree/Specialization in Veterinary Clinical Medicine and Surgery, Second Lieutenant in the Second-Class Reserve of the Brazilian Navy of the Medical Corps. She has experience in research on the pathophysiological, immunological, and genetic interaction between cattle and viral agents; clinical practice with cattle, horses, and small ruminants; zoonosis control; higher education teaching; and inspection of products of animal origin. She is proficient in Portuguese, English, and Italian.

EXPERIENCE

Federal Agricultural Inspection Auditor

Head of the Regional Technical Unit for Agriculture and Livestock

Ministry of Agriculture and Livestock (MAPA) | Montes Claros and Janaúba, Minas Gerais, Brazil/ Santa Cruz do Rio Pardo, São Paulo, Brazil

12/2019 - Present

Auditing and inspecting establishments registered with the federal inspection service/MAPA (cattle slaughterhouses and meatpacking plants, dairies, honey and egg processing plants, animal feed production facilities; certification of products of animal origin; monitoring and conducting international audits from the U.S., European Union, Chile, Malaysia, the Philippines, China, Mexico, and Venezuela at establishments producing products of animal origin; management and biannual training/refresher courses for a team consisting of two veterinarians and approximately 25 sanitary inspection assistants).

Second Lieutenant in the Second Class Reserve of the Medical Corps

Brazilian Navy | Rio de Janeiro, Rio de Janeiro, Brazil

12/2019 - Present

Midshipman of the Second-Class Reserve of the Medical Corps

Brazilian Navy | Rio de Janeiro, Rio de Janeiro, Brazil

06/2019 - 12/2019

Veterinarian serving as a Midshipman at the Brazilian Navy Supply Base, responsible for quality control of food for the military and for zoonosis control in the food warehouse and other related sectors.

Veterinarian

Municipal Government of Diamantina | Diamantina, Minas Gerais, Brazil

12/2018 - 06/2019

Veterinarian working in zoonosis control for the Municipal Government, especially in the fight against cutaneous and visceral leishmaniasis in the municipality's rural and urban areas.

Faculty and Higher Education Program Coordinator

Guanambi Higher Education Center | Guanambi, Bahia, Brazil

04/2016 - 01/2017

Teaching and Coordination of the Undergraduate Program in Veterinary Medicine, lecturing in General Microbiology, Veterinary Microbiology and Veterinary Immunology, and participating in the structuring and administration of the program, including the design of a veterinary hospital, affiliated laboratories, the curriculum, and the pedagogical project. In addition, participated in promoting the 1st Veterinary Medicine Conference at Guanambi College, which included lectures and practical demonstrations addressing various topics in Veterinary Medicine.

EDUCATION

Ph.D. in Veterinary Medicine

Federal University of Viçosa

Viçosa, Minas Gerais, Brazil

09/2016

Doctoral Research Abroad - CAPES Fellow

University of Minnesota

Saint Paul, Minnesota, United States of America

09/2014 to 07/2015

Master's Degree in Veterinary Medicine

Federal University of Viçosa Viçosa,

Minas Gerais, Brazil

04/2012

Specialization Certification (*Lato Sensu* Graduate Program) in Veterinary Clinical Medicine and Surgery

Federal University of Viçosa

Viçosa, Minas Gerais, Brazil

08/2010

Undergraduate Degree in Veterinary Medicine

Federal University of Viçosa

Viçosa, Minas Gerais, Brazil

07/2008

MAIN COURSES / SEMINARS

Lecturer for biannual training/refresher courses for the federal inspection service team, composed of veterinarians and sanitary inspection assistants. 2022 to 2025.

SISBI-POA Audit Training. National School of Agricultural Management. 11/2025.

Lecturer at the 3rd Congress on Innovation, Technology, and Sustainability for Public Management. 08/2025. Montes Claros, Minas Gerais, Brazil.

Issuance of notices of violation and investigation of administrative proceedings for agricultural inspection. National School of Agricultural Management. 04/2025.

Practical and theoretical training on additional requirements for exporting meat products to the U.S. National School of Agricultural Management. 04/2025.

Beef Carcass Grading - Hilton Quota. National School of Agricultural Management. 12/2024.

Inspection of Establishments and Products for Animal Feed. National School of Agricultural Management. 11/2023.

Official verification of the HACCP Program at a cattle slaughterhouse. National School of Agricultural Management. 10/2023.

Qualification and sanitary certification of products of animal origin. National School of Agricultural Management. 06/2023.

Course on the collection, packaging, and shipment of POA and animal feed samples. National School of Agricultural Management. 12/2022.

Meat export requirements for Chile: Classification and grading of carcasses. National School of Agricultural Management. 08/2022.

Knowledge of Italian culture and language
L'Italiano Essenziale Course - Italica
06/2020

Ante-mortem and post-mortem procedures for animals destined for slaughter. National School of Agricultural Management. 04/2020.

CERTIFICATION

ESL 941: Research Writing for the American University – 05/2015 (Completion)

University of Minnesota

Minneapolis, Minnesota, United States of America

PROFESSIONAL LICENSE

Regional Council of Veterinary Medicine of the State of Minas Gerais

MG-10058-VP

PUBLISHED PAPERS

Apoptosis in the late replication phase of *Bovine alphaherpesvirus* 1 in experimentally infected calves
Brazilian Journal of Microbiology
12/2021 - São Paulo, São Paulo, Brazil

Latent *Bovine herpesvirus* 1 and 5 in milk from naturally infected dairy cattle
Journal of Veterinary Medical Science
10/2018 - Tokyo, Japan

Surveillance of neutralizing antibodies against *Bovine herpesvirus* 1 in cattle herds from different farming property systems
Bioscience Journal
06/2014 - Uberlândia, Minas Gerais, Brazil

Presence of the viral DNA in oophorous cumulus complexes of cows clinically healthy and naturally infected by *Bovine herpesvirus* 1 (BoHV1)
Ciência Animal Journal
2014 - Fortaleza, Ceará, Brazil

Antibodies against *Bovine herpesvirus* 1 in dairy herds in the state of Espirito Santo, Brazil
Revista Ceres
04/2014 - Viçosa, Minas Gerais, Brazil

Antiviral Potential of Quercetin Against Canine Parvovirus
Arquivo Brasileiro de Medicina Veterinária e Zootecnia (Brazilian Archives of Veterinary Medicine and Animal Science)
04/2013 - Belo Horizonte, Minas Gerais, Brazil

In vitro inhibition of canine distemper virus by flavonoids and phenolic acids: Implications of structural differences for antiviral design
Research in Veterinary Science
10/2013 - United States

Detection of peptides relevant to the diagnosis of bovine cysticercosis by immunoblotting
Ciência Rural Journal
04/2009 - Santa Maria, Rio Grande do Sul, Brazil

VOLUNTEER WORK

Short-Term Course Taught/Outreach
Principles of Virological Diagnosis in Veterinary Medicine
Lecturer
Federal University of Viçosa
2013 - Viçosa, Minas Gerais, Brazil

Short-Term Course Taught/Outreach
Principles of Virological Diagnosis in Veterinary Medicine
Lecturer
Federal University of Viçosa
2011 - Viçosa, Minas Gerais, Brazil

Federal University of Viçosa Choir under the direction of Conductor Rogério Moreira Campos
Choir member
Federal University of Viçosa
2006 to 2011 - Viçosa, Minas Gerais, Brazil

OTHER SKILLS

Book publication:

Veterinary Microbiology: Practices. 1. ed. Viçosa: Editora UFV, 2015. Vol. 1. 68p.

Participation on Capstone Project Committees (Final Papers for Professional Development/Specialization Programs):

Participation in the examining committee of Amanda Serrado de Almeida. Structural, dimensional, and functional characteristics of Free-Stall barns in the Alto Rio Doce Region. 2014. Capstone Project (Advanced Studies/Specialization in Veterinary Medicine) - Federal University of Viçosa.

Participation in the examining committee of Gertrud Elisa Campos Edler. Occurrence of ketosis in dairy herds in the microregion of Viçosa - MG and association of body condition at calving with the physicochemical composition of milk in early lactation. 2012. Capstone Project (Advanced Studies/Lato Sensu Specialization Program in Veterinary Clinical Medicine and Surgery) - Federal University of Viçosa.

Member of the panel of reviewers:

Brazilian Symposium on Sustainable Agriculture
2013, 2014, and 2015
Federal University of Viçosa
Viçosa, Minas Gerais, Brazil

Abstracts published in proceedings of conferences:

Distribution of antibodies and shedding of Bovine herpesvirus (BoHV-1 and 5) in milk: implications for viral pathogenesis in naturally infected dairy cows. In: American Society for Virology, 2013, Pennsylvania. American Society for Virology/32nd Annual Meeting - Scientific Program & Abstracts. Pennsylvania, 2013. Vol. 32. p. 258.

Subclinical disease associated with infection by Porcine circovirus 2 (PCV-2) on swine herd. In: 21st National Virology Conference, 2010, Gramado, RS. Virus - Reviews & Research. Porto Alegre, RS: Brazilian Society of Virology, 2010. Vol. 15. pp. 188-189.

Evaluation of immunoglobulin G and M production by ELISA in a calf experimentally inoculated with Taenia saginata eggs. In: 3rd Latin American Congress of Food Hygienists, 2007, Porto Seguro, BA - Brazil. Food Hygiene, 2007. Vol. 21. p. 94-94.

Evaluation of Taenia saginata and Taenia crassiceps antigens against different groups of control sera for the diagnosis of bovine cysticercosis by immunoblotting. In: 3rd Latin American Congress of Food Hygienists, 2007, Porto Seguro, BA - Brazil. Food Hygiene, 2007. Vol. 21. pp. 100-100.

Presentations of papers at congresses and symposia:

Evaluation of immune response and viral shedding of infected cattle by Bovine herpesvirus 1. 2015. (Presentation of Work/Congress).

Stimulation of Bovine herpesvirus 1 shedding and humoral response by elevated cortisol levels in naturally infected dairy cows. 2014. (Presentation of Work/Symposium).

Shedding of Bovine herpesvirus 1 and 5 in milk and its implications for the characterization of infection in the productive and latent phases in naturally infected cows. 2014. (Presentation of Work/Symposium).

Distribution of antibodies and DNA elimination of Bovine herpesvirus (BoHV1 and 5) in milk: implications for viral pathogenesis in naturally infected dairy cows. 2012. (Presentation of Work/Congress).

Building a link between field reality and the veterinary medicine program through the exploration of problem-based situations as a teaching methodology. 2012. (Presentation of Work/Symposium).

01/2026

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

E-mail: hannaccf@gmail.com

Hanna Carolina Campos Ferreira

Telefone: (31) 99642-4522

Médica Veterinária, Auditora Fiscal Federal Agropecuária do Ministério da Agricultura e Pecuária, *Doctor Scientiae* e *Magister Scientiae* em Medicina Veterinária, Pós-Graduação/Especialização em Clínica e Cirurgia Veterinárias, Segundo Tenente da Reserva de Segunda Classe da Marinha do Brasil do Quadro de Médicos. Tem experiência em pesquisa da interação fisiopatológica, imunológica e gênica entre bovinos e agentes virais; clínica de bovinos, equinos e pequenos ruminantes; controle de zoonoses; docência de nível superior; inspeção de produtos de origem animal. Tem conhecimento nas línguas portuguesa, inglesa e italiana.

EXPERIÊNCIA

Auditora Fiscal Federal Agropecuária

Chefe de Unidade Técnica Regional de Agricultura e Pecuária

Ministério da Agricultura e Pecuária (MAPA) | Montes Claros e Janaúba, Minas Gerais, Brasil/ Santa Cruz do Rio Pardo, São Paulo, Brasil

12/2019 - Presente

Auditoria e fiscalização de estabelecimentos registrados no serviço de inspeção federal / MAPA (abatedouros frigoríficos de bovinos, laticínios, estabelecimentos beneficiadores de mel e ovos, estabelecimentos produtores de alimentação animal; certificação de produtos de origem animal; acompanhamento e condução de auditorias internacionais dos EUA, União Europeia, Chile, Malásia, Filipinas, China, México, Venezuela em estabelecimentos de produtos de origem animal; gestão e treinamento/reciclagem semestral de equipe composta por dois médicos veterinários e cerca de 25 auxiliares de inspeção sanitária).

Segundo Tenente da Reserva de Segunda Classe do Quadro de Médicos

Marinha do Brasil | Rio de Janeiro, Rio de Janeiro, Brasil

12/2019 - Presente

Guarda-Marinha da Reserva de Segunda Classe do Quadro de Médicos

Marinha do Brasil | Rio de Janeiro, Rio de Janeiro, Brasil

06/2019 - 12/2019

Médica Veterinária atuando no posto de Guarda-Marinha na Base de Abastecimento da Marinha do Brasil como responsável pelo controle de qualidade dos alimentos do corpo militar e do controle de zoonoses do armazém de alimentos e demais setores correlatos.

Médica Veterinária

Prefeitura Municipal de Diamantina | Diamantina, Minas Gerais, Brasil

12/2018 - 06/2019

Médica Veterinária atuando no controle de zoonoses da Prefeitura Municipal, especialmente no enfrentamento contra a doença da leishmaniose cutânea e visceral nas zonas rural e urbana do município.

Docente e Coordenadora de Curso Superior

Centro de Educação Superior de Guanambi | Guanambi, Bahia, Brasil

04/2016 - 01/2017

Docência e Coordenação de Curso de Graduação em Medicina Veterinária, ministrando aulas de Microbiologia Geral, Microbiologia Veterinária e Imunologia Veterinária e participando da estruturação e administração do Curso, incluindo projeção de hospital veterinário, laboratórios vinculados, matriz curricular e projeto pedagógico. Ademais, participou da promoção do I Encontro de Medicina Veterinária da Faculdade Guanambi, no qual houve palestras e demonstrações práticas abordando os diversos conteúdos da Medicina Veterinária.

EDUCAÇÃO

Doutorado em Medicina Veterinária

Universidade Federal de Viçosa

Viçosa, Minas Gerais, Brasil

09/2016

Doutorado Sanduíche no Exterior - Bolsista CAPES

University of Minnesota

Saint Paul, Minnesota, Estados Unidos da América

09/2014 a 07/2015

Mestrado em Medicina Veterinária

Universidade Federal de Viçosa

Viçosa, Minas Gerais, Brasil

04/2012

Especialização (Pós-Graduação *Lato Sensu*) em Clínica e Cirurgia Veterinárias

Universidade Federal de Viçosa

Viçosa, Minas Gerais, Brasil

08/2010

Graduação em Medicina Veterinária

Universidade Federal de Viçosa

Viçosa, Minas Gerais, Brasil

07/2008

PRINCIPAIS CURSOS / SEMINÁRIOS

Palestrante de treinamentos/reciclagens semestrais de equipe do serviço de inspeção federal composta por médicos veterinários e auxiliares de inspeção sanitária. 2022 a 2025.

Treinamento em Auditorias do SISBI-POA. Escola Nacional de Gestão Agropecuária. 11/2025.

Palestrante do III Congresso de Inovação, Tecnologia e Sustentabilidade para Gestão Pública. 08/2025. Montes Claros, Minas Gerais, Brasil.

Emissão de auto de infração e instrução de processos administrativos de fiscalização agropecuária. Escola Nacional de Gestão Agropecuária. 04/2025.

Treinamentos prático e teórico sobre requisitos complementares de exportação de produtos cárneos para os EUA. Escola Nacional de Gestão Agropecuária. 04/2025.

Tipificação de Carcaças de Bovinos - Cota Hilton. Escola Nacional de Gestão Agropecuária. 12/2024.

Fiscalização de Estabelecimentos e de Produtos para Alimentação Animal. Escola Nacional de Gestão Agropecuária. 11/2023.

Verificação oficial do Programa de APPCC em estabelecimento de abate de bovinos. Escola Nacional de Gestão Agropecuária. 10/2023.

Habilitação e certificação sanitária de produtos de origem animal. Escola Nacional de Gestão Agropecuária. 06/2023.

Curso de coleta, acondicionamento e remessa de amostras de POA e alimentos para animais. Escola Nacional de Gestão Agropecuária. 12/2022.

Requisitos de exportação de carne para o Chile: Classificação e tipificação de carcaças. Escola Nacional de Gestão Agropecuária. 08/2022.

Conhecimento da cultura e da língua italiana
Curso L'Italiano Essenziale - Italica
06/2020

Procedimentos ante e post mortem de animais de abate. Escola Nacional de Gestão Agropecuária. 04/2020.

CERTIFICAÇÃO

ESL 941: Research Writing for the American University – 05/2015 (Conclusão)

University of Minnesota

Minneapolis, Minnesota, Estados Unidos da América

LICENÇA PROFISSIONAL

Conselho Regional de Medicina Veterinária do Estado de Minas Gerais

MG-10058-VP

ARTIGOS PUBLICADOS

Apoptosis in the late replication phase of *Bovine alphaherpesvirus* 1 in experimentally infected calves
Brazilian Journal of Microbiology
12/2021 - São Paulo, São Paulo, Brasil

Latent *Bovine herpesvirus* 1 and 5 in milk from naturally infected dairy cattle
Journal of Veterinary Medical Science
10/2018 - Tokyo, Japan

Surveillance of neutralizing antibodies against *Bovine herpesvirus* 1 in cattle herds from different farming property systems
Bioscience Journal
06/2014 - Uberlândia, Minas Gerais, Brasil

Presence of the viral DNA in oophorous cumulus complexes of cows clinically healthy and naturally infected by *Bovine herpesvirus* 1 (BoHV1)
Revista Ciência Animal
2014 - Fortaleza, Ceará, Brasil

Antibodies against *Bovine herpesvirus* 1 in dairy herds in the state of Espirito Santo, Brasil
Revista Ceres
04/2014 - Viçosa, Minas Gerais, Brasil

Potencial antiviral da quercetina sobre o parvovírus canino
Arquivo Brasileiro de Medicina Veterinária e Zootecnia
04/2013 - Belo Horizonte, Minas Gerais, Brasil

In vitro inhibition of canine distemper virus by flavonoids and phenolic acids: Implications of structural differences for antiviral design
Research in Veterinary Science
10/2013 - United States

Detecção de peptídeos importantes para o diagnóstico da cisticercose bovina no immunoblot
Revista Ciência Rural
04/2009 - Santa Maria, Rio Grande do Sul, Brasil

TRABALHO VOLUNTÁRIO

Curso de curta duração ministrado/Extensão
Noções de Diagnóstico Virológico em Medicina Veterinária
Palestrante
Universidade Federal de Viçosa
2013 - Viçosa, Minas Gerais, Brasil

Curso de curta duração ministrado/Extensão
Noções de Diagnóstico Virológico em Medicina Veterinária
Palestrante
Universidade Federal de Viçosa
2011 - Viçosa, Minas Gerais, Brasil

Coral da Universidade Federal de Viçosa sob regência do maestro Rogério Moreira Campos
Coralista
Universidade Federal de Viçosa
2006 a 2011 - Viçosa, Minas Gerais, Brasil

OUTRAS HABILIDADES

Publicação de livro:

Microbiologia Veterinária: Práticas. 1. ed. Viçosa: Editora UFV, 2015. v. 1. 68p.

Participação em bancas de trabalhos de conclusão (Monografias de cursos de aperfeiçoamento/especialização):

Participação em banca de Amanda Serrado de Almeida. Características estruturais, dimensionais e funcionais de galpões do tipo Free-stall na região do Alto Rio Doce. 2014. Monografia (Aperfeiçoamento/Especialização em Programa de Residência em Medicina Veterinária) - Universidade Federal de Viçosa.

Participação em banca de Gertrud Elisa Campos Edler. Ocorrência de cetose em rebanhos leiteiros na microrregião de Viçosa - MG e associação da condição corporal ao parto à composição físico-química do leite no início da lactação. 2012. Monografia (Aperfeiçoamento/Especialização Lato Sensu em Clínica e Cirurgia Veterinárias) - Universidade Federal de Viçosa.

Integrante do corpo de pareceristas:

Simpósio Brasileiro de Agropecuária Sustentável
2013, 2014 e 2015
Universidade Federal de Viçosa
Viçosa, Minas Gerais, Brasil

Resumos publicados em anais de congressos:

Distribution of antibodies and shedding of Bovine herpesvirus (BoHV-1 and 5) in milk: implications for viral pathogenesis in naturally infected dairy cows. In: American Society for Virology, 2013, Pennsylvania. American Society for Virology/32nd Annual Meeting - Scientific Program & Abstracts. Pennsylvania, 2013. v. 32. p. 258.

Subclinical disease associated with infection by Porcine circovirus 2 (PCV-2) on swine herd. In: XXI Encontro Nacional de Virologia, 2010, Gramado, RS. Virus - Reviews & Research. Porto Alegre, RS: Sociedade Brasileira de Virologia, 2010. v. 15. p. 188-189.

Avaliação da produção de imunoglobulinas G e M através do teste ELISA em bezerro inoculado experimentalmente com ovos de Taenia saginata. In: III Congresso Latino-americano de Higienistas de Alimentos, 2007, Porto Seguro, BA - Brasil. Higiene Alimentar, 2007. v. 21. p. 94-94.

Avaliação de antígenos de Taenia saginata e de Taenia crassiceps frente a diferentes grupos de soros-controle no diagnóstico da cisticercose bovina por meio do immunoblot. In: III Congresso Latino-americano de Higienistas de Alimentos, 2007, Porto Seguro, BA - Brasil. Higiene Alimentar, 2007. v. 21. p. 100-100.

Apresentações de trabalhos em congressos e simpósios:

Evaluation of immune response and viral shedding of infected cattle by Bovine herpesvirus 1. 2015. (Apresentação de Trabalho/Congresso).

Estímulo da excreção de Bovine herpesvirus 1 e da resposta humoral por níveis elevados de cortisol em vacas leiteiras naturalmente infectadas. 2014. (Apresentação de Trabalho/Simpósio).

Eliminação de Bovine herpesvirus 1 e 5 no leite e sua implicação na caracterização da infecção nas fases produtiva e latente em vacas naturalmente infectadas. 2014. (Apresentação de Trabalho/Simpósio).

Distribution of antibodies and DNA elimination of Bovine herpesvirus (BoHV1 and 5) in milk: implications for viral pathogenesis in naturally infected dairy cows. 2012. (Apresentação de Trabalho/Congresso).

Construção de vínculo entre a realidade do campo e o curso de Medicina Veterinária através da exploração de situações-problema como metodologia pedagógica. 2012. (Apresentação de Trabalho/Simpósio).

01/2026

Exhibit B - Eligibility Criteria: Advanced Degree

Federative Republic of Brazil
Ministry of Education

Federal University of Viçosa

The President of the Federal University of Viçosa, Minas Gerais,
on July 25, 2008, in the exercise of his duties, hereby confers the degree of

Bachelor of Veterinary Medicine

upon

Hanna Carolina Campos Ferreira

Brazilian, born in the State of Minas Gerais on September 25, 1984,
holder of identity document No. MG-12.992.107 - MG,

in accordance with the regulations of the University, and hereby grants her this diploma so that she may enjoy all the rights and prerogatives conferred upon this degree by the laws of the Republic.

Viçosa, July 30, 2008

-----// signature //-----
President

-----// signature //-----
Graduate

-----// signature //-----
Secretary of Academic Councils

-----// signature //-----
Director of Academic Records

MINISTRY OF EDUCATION
FEDERAL UNIVERSITY FOF VIÇOSA

Diploma registered in book **25**, page **032**, No. **22456**, pursuant to article 48 of law No. 9,394/96.
Viçosa, July 30, 2008.

-----// signature //-----
JOSÉ FÁBIO DE ARAÚJO - Registration No. 2414-7
Director of the Diploma and Certificates Registration Department

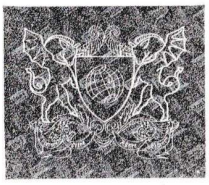
-----// signature //-----
PROFESSOR VICENTE DE PAULA LELIS
Director of Academic Records

PRESIDENT: PROFESSOR CARLOS SIGUEYUKI SEDIYAMA

Secretary of Academic Councils: PROFESSOR PAULO SHIKAZU TOMA

This Diploma was presented to the Regional Council of Veterinary Medicine of the State of Minas Gerais (CRMV-MG) for registration.
Belo Horizonte, November 26, 2008.

-----// signature //-----
Fernando Cruz Laender
President



The Program was recognized by Ministerial Ordinance No. 713 of December 23, 1981, and published in the Official Gazette on December 29, 1981.

Federal University of Viçosa

Academic Record
Av. P.H. Rolfs, No Number – University Campus
36.571-000 – Viçosa – MG – Brazil
Telephone: (31) 3899-2800 Fax: (31) 3899-1241 Email: dre@ufv.br http://www.ufv.br/res

ACADEMIC TRANSCRIPT

Name: HANNA CAROLINA CAMPOS FERREIRA **Enrollment No. 54990**

Father's Name: Yulo Antônio Ferreira de Sá
Mother's Name: Mariane Campos Ferreira
Date of Birth: 09/25/1984 **Place of Birth:** Januária **State:** MG **Nationality:** Brazilian
Identity Document No.: MG-12.992.107 **Issuing Date:** 05/01/2000 **Issuing Authority:** SSP/MG
Voter ID: 145125740221 **Electoral District:** 148 **Polling Station:** 053
Issuing Date: 04/18/2000 **Location:** Januária **State:** MG

High School

Location: Novo Milênio School – Januária – MG
Program: High School Completion Certificate **Completion:** 2002

Program Information

Program: VETERINARY MEDICINE
Recognition: Ordinance No. 713 of 12/23/1981

Authorization: CEPE, Minutes No. 77 of 07/12/1976
Admission Type: Transfer **Year:** 2006 **Transferred from:** UFRRJ – RJ
Date of Degree Conferral: 07/25/2008
Degree Awarded: Bachelor of Veterinary Medicine

University Entrance Examination Scores

Test	Value	Score
**********		
**********		

Assessment of Academic Performance

Grade	Symbols	Grade %
Excellent	A	from 90 to 100
Good	B	from 75 to 89
Satisfactory	C	from 60 to 74
Failed	R	Below 60
Passed	H	
Incomplete Evaluation	I	
Course Registration Cancelled	J	
Enrollment Suspension	K	
Failed due to Absence	L	
Enrolled	M	
Unsatisfactory Performance	N	
Student in Dismissal Process	O	
Satisfactory Performance	S	
Course in Progress	Q	
Leave of Absence	Y	
Special Leave of Absence	W	

Notes:
The minimum grade for approval is 60 (sixty).

VIÇOSA, August 12, 2008

-----// signature //-----
Heloiza Chaves Rios
Director of the Academic Transcript Department

-----// signature //-----
Edson Martinho Ramos
Acting Director of Academic Records

Name: HANNA CAROLINA CAMPOS FERREIRA			Enrollment No. 54990		
Year/Semester	**Code**	**Course Name**	**Credits**	**C.H.**	**Grade**
2006/1	BIO 111	CELL BIOLOGY	3	60	T
2006/1	BIO 131	BASIC ECOLOGY	3	45	T
2006/1	BIO 200	BIOPHYSICS	4	75	T
2006/1	BIO 220	HISTOLOGY AND EMBRYOLOGY	4	75	T
2006/1	BIO 240	GENETICS	4	60	T
2006/1	BIO 250	IMMUNOLOGY	3	60	T
2006/1	BQI 101	BIOCHEMISTRY LABORATORY I	1	30	T
2006/1	BQI 103	BIOCHEMISTRY I	5	75	T
2006/1	BQI 240	PHYSIOLOGICAL CHEMISTRY	3	45	T
2006/1	ERU 300	RURAL ECONOMICS	3	45	T
2006/1	EST 103	ELEMENTS OF STATISTICS	4	60	T
2006/1	MBI 100	GENERAL MICROBIOLOGY	3	60	T
2006/1	TAL 440	PROCESSING OF ANIMAL PRODUCTS	4	75	81
2006/1	VET 100	VETERINARY HISTOLOGY	5	105	T
2006/1	VET 101	VETERINARY ANATOMY I	4	120	T
2006/1	VET 103	VETERINARY ANATOMY II	4	120	T
2006/1	VET 112	VETERINARY PHYSIOLOGY	5	90	T
2006/1	VET 123	VETERINARY PHARMACOLOGY I	4	75	T
2006/1	VET 124	VETERINARY PHARMACOLOGY II	3	45	T
2006/1	VET 140	VETERINARY MICROBIOLOGY	4	75	T
2006/1	VET 145	VETERINARY PARASITOLOGY	5	90	T
2006/1	VET 160	VETERINARY HISTOPATHOLOGY	4	75	T
2006/1	VET 190	INTRODUCTION TO VETERINARY MEDICINE	0	30	S
2006/1	VET 340	BACTERIAL DISEASES	4	75	T
2006/1	VET 344	VIRAL DISEASES	4	75	T
2006/1	VET 346	VETERINARY EPIDEMIOLOGY	4	60	T
2006/1	VET 360	VETERINARY PATHOLOGICAL ANATOMY	6	120	89
2006/1	VET 362	VETERINARY CLINICAL LABORATORY	3	60	T
2006/1	ZOO 212	BREEDING AND MANAGEMENT OF DOMESTIC ANIMALS	3	60	86
2006/1	ZOO 415	EQUINE PRODUCTION	3	60	89
2006/1	ZOO 463	ANIMAL BREEDING	3	45	T
2006/1	ZOO 470	ANIMAL BIOCLIMATOLOGY	3	45	T
2006/2	VET 171	VETERINARY SEMIOLOGY	3	60	72
2006/2	VET 331	VETERINARY ANESTHESIOLOGY	3	60	82
2006/2	VET 342	PARASITIC DISEASES	3	60	75
2006/2	VET 351	INSPECTION OF ANIMAL PRODUCTS II	4	75	76
2006/2	VET 383	ANIMAL REPRODUCTION II	3	60	91
2006/2	ZOO 434	POULTRY PRODUCTION	4	60	89
2007/1	EDU 127	PHILOSOPHY OF SCIENCE	3	45	94
2007/1	ENF 482	CONSERVATION UNITS	3	60	T
2007/1	VET 332	VETERINARY SURGICAL TECHNIQUES	4	90	78
2007/1	VET 337	DIAGNOSTIC IMAGING	3	60	85
2007/1	VET 350	INSPECTION OF ANIMAL PRODUCTS I	4	75	74
2007/1	VET 374	MEDICAL CLINICS OF RUMINANTS AND EQUINES	6	120	63
2007/1	VET 382	ANIMAL REPRODUCTION I	4	90	95
2007/1	ZOO 453	FORAGES AND FORAGE CROPS	3	60	T
2007/2	ERU 430	RURAL ADMINISTRATION	4	75	82
2007/2	ERU 451	RURAL EXTENSION	4	60	80
2007/2	VET 334	GENERAL SURGERY AND VETERINARY OBSTETRICS	5	105	82
2007/2	VET 375	MEDICAL CLINICS OF DOGS AND CATS	4	90	72
2007/2	ZOO 433	SWINE PRODUCTION	4	60	T
2007/2	ZOO 436	DAIRY CATTLE PRODUCTION	4	60	70
2007/2	ZOO 437	BEEF CATTLE PRODUCTION	4	60	89
2008/1	VET 349	SANITATION	4	60	77
2008/1	VET 446	POULTRY DISEASES	3	60	91
2008/1	VET 495	SUPERVISED INTERNSHIP IN VETERINARY MEDICINE	0	450	S
2008/1	ZOO 423	SWINE FARMING	4	60	95
2008/1	ZOO 449	ANIMAL NUTRITION	3	45	84
		Total:	**0208**	**4350**	

VIÇOSA, August 12, 2008

-----// signature //-----
Heloiza Chaves Rios
Director of the Academic Transcript Department

-----// signature //-----
Edson Martinho Ramos
Acting Director of Academic Records

Translator's Note: C.H – Course Hours.

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: April 8, 2026.**

República Federativa do Brasil
Ministério da Educação

Universidade Federal de Viçosa

O Reitor da Universidade Federal de Viçosa, Minas Gerais,
em 25 de julho de 2008, no uso de suas atribuições, confere o grau de

Médico Veterinário

a

Hanna Carolina Campos Ferreira

brasileira, natural do Estado de Minas Gerais, nascida a 25 de setembro de 1984,
portadora da cédula de identidade número MG-12.992.107 - MG,

de acordo com as normas da Universidade e outorga-lhe o presente diploma para que possa gozar de todos os direitos e prerrogativas concedidos a esse grau pelas leis da República.

Viçosa, 30 de julho de 2008

Reitor

Hanna Carolina Campos Ferreira
Diplomado

Secretário de Órgãos Colegiados

Diretor do Registro Escolar

MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE VIÇOSA

Diploma registrado no livro **25**, folha **032**, n.º **22456**, de acordo com o disposto no artigo 48 da Lei n.º 9.394/96.

Viçosa, 30 de julho de 2008.

.....

JOSÉ FÁBIO DE ARAÚJO - Mat. 2414-7
Chefe de Serviço de Registro de Diplomas e Certificados

PROFESSOR VICENTE DE PAULA LELIS
Diretor do Registro Escolar

REITOR: PROFESSOR CARLOS SIGUEYUKI SEDIYAMA

Secretário de Órgãos Colegiados: PROFESSOR PAULO SHIKAZU TOMA

Este diploma foi apresentado ao Conselho Regional de Medicina Veterinária do Estado de Minas Gerais (CRMV-MG), para inscrição. B.Hte 26 de novembro de 2008.

Fernando Cruz Laender
Presidente

O curso foi reconhecido pela Portaria Ministerial n.º 713 de 23 de dezembro de 1981 e publicada no Diário Oficial de 29 de dezembro de 1981.

Universidade Federal de Viçosa

Registro Escolar
Av. P H Rolfs, s/n - Campus Universitário
36.571-000 - Viçosa - MG - Brasil
Telefone: (31) 3899-2800 Fax: (31) 3899-1241 E-mail: dre@ufv.br http://www.ufv.br/res

HISTÓRICO ESCOLAR

Nome: HANNA CAROLINA CAMPOS FERREIRA **Matrícula: 54990**

Nome Pai: Yulo Antônio Ferreira de Sá

Nome Mãe: Mariane Campos Ferreira

Data Nascimento: 25/09/1984 **Naturalidade:** Januária **UF:** MG **Nacionalidade:** Brasileira

Identidade: MG-12.992.107 **Data Expedição:** 01/05/2000 **Orgão de Expedição:** SSP/MG

Título Eleitor: 145125740221 **Zona:** 148 **Seção:** 053

Expedição: 18/04/2000 **Local:** Januária **UF:** MG

2º Grau

Local: Colegium Novo Milênio - Januária - MG

Curso: Certificado de Conclusão do Ensino Médio **Conclusão:** 2002

Informações do Curso

Curso: MEDICINA VETERINÁRIA

Reconhecimento: Portaria nº 713 de 23/12/1981

Autorização: CEPE, Ata nº 77 de 12/07/1976

Forma de Admissão: Transferência **Ano:** 2006 **Origem:** UFRRJ - RJ

Data de Colação de Grau: 25/07/2008

Título Obtido: Médico Veterinário

Notas do Vestibular

Prova	Valor	Nota
**********		
**********		

Avaliação de Rendimento Escolar

Conceito	Símbolo	Rend. %
Excelente	A	de 90 a 100
Bom	B	de 75 a 89
Regular	C	de 60 a 74
Reprovado	R	Abaixo de 60
Isenção	F	
Afastamento/Intercâmbio	G	
Avaliação Incompleta	I	
Cancelamento de Inscrição em Disciplina	J	
Trancamento de Matrícula	K	
Reprovação por Infrequência	L	
Matriculado	M	
Desempenho não-Satisfatório	N	
Aluno em Situação de Desligamento com Processo	O	
Matricula Provisória	P	
Desempenho Satisfatório	S	
Disciplina em Andamento	Q	
Aproveitamento de Créditos	T	
Afastamento	Y	
Afastamento Especial	W	

Observações:
A nota mínima para aprovação é 60 (sessenta).

VIÇOSA, 12 de agosto de 2008

Heloiza Chaves Rios
Chefe da Seção de Históricos Escolares

Edson Martinho Ramos
Diretor Substituto do Registro Escolar

Nome: Hanna Carolina Campos Ferreira **Matrícula: 54990**

Ano/Semestre	Código	Nome da Disciplina	Créditos	C.H.	Nota
2006/1	BIO 111	BIOLOGIA CELULAR	3	60	T
2006/1	BIO 131	ECOLOGIA BÁSICA	3	45	T
2006/1	BIO 200	BIOFÍSICA	4	75	T
2006/1	BIO 220	HISTOLOGIA E EMBRIOLOGIA	4	75	T
2006/1	BIO 240	GENÉTICA	4	60	T
2006/1	BIO 250	IMUNOLOGIA	3	60	T
2006/1	BQI 101	LABORATÓRIO DE BIOQUÍMICA I	1	30	T
2006/1	BQI 103	BIOQUÍMICA I	5	75	T
2006/1	BQI 240	QUÍMICA FISIOLÓGICA	3	45	T
2006/1	ERU 300	ECONOMIA RURAL	3	45	T
2006/1	EST 103	ELEMENTOS DE ESTATÍSTICA	4	60	T
2006/1	MBI 100	MICROBIOLOGIA GERAL	3	60	T
2006/1	TAL 440	PROCESSAMENTO DE PRODUTOS DE ORIGEM ANIMAL	4	75	81
2006/1	VET 100	HISTOLOGIA VETERINÁRIA	5	105	T
2006/1	VET 101	ANATOMIA VETERINÁRIA I	4	120	T
2006/1	VET 103	ANATOMIA VETERINÁRIA II	4	120	T
2006/1	VET 112	FISIOLOGIA VETERINÁRIA	5	90	T
2006/1	VET 123	FARMACOLOGIA VETERINÁRIA I	4	75	T
2006/1	VET 124	FARMACOLOGIA VETERINÁRIA II	3	45	T
2006/1	VET 140	MICROBIOLOGIA VETERINÁRIA	4	75	T
2006/1	VET 145	PARASITOLOGIA VETERINÁRIA	5	90	T
2006/1	VET 160	HISTOPATOLOGIA VETERINÁRIA	4	75	T
2006/1	VET 190	INTRODUÇÃO À MEDICINA VETERINÁRIA	0	30	S
2006/1	VET 340	DOENÇAS BACTERIANAS	4	75	T
2006/1	VET 344	DOENÇAS VIRAIS	4	75	T
2006/1	VET 346	EPIDEMIOLOGIA VETERINÁRIA	4	60	T
2006/1	VET 360	ANATOMIA PATOLÓGICA VETERINÁRIA	6	120	89
2006/1	VET 362	LABORATÓRIO CLÍNICO VETERINÁRIO	3	60	T
2006/1	ZOO 212	CRIAÇÃO E EXPLORAÇÃO DOS ANIMAIS DOMÉSTICOS	3	60	86
2006/1	ZOO 415	EQÜIDEOCULTURA	3	60	89
2006/1	ZOO 463	MELHORAMENTO ANIMAL	3	45	T
2006/1	ZOO 470	BIOCLIMATOLOGIA ANIMAL	3	45	T
2006/2	VET 171	SEMIOLOGIA VETERINÁRIA	3	60	72
2006/2	VET 331	ANESTESIOLOGIA VETERINÁRIA	3	60	82
2006/2	VET 342	DOENÇAS PARASITÁRIAS	3	60	75
2006/2	VET 351	INSPEÇÃO DE PRODUTOS DE ORIGEM ANIMAL II	4	75	76
2006/2	VET 383	REPRODUÇÃO ANIMAL II	3	60	91
2006/2	ZOO 434	PRODUÇÃO AVÍCOLA	4	60	89
2007/1	EDU 127	FILOSOFIA DA CIÊNCIA	3	45	94
2007/1	ENF 482	UNIDADES DE CONSERVAÇÃO	3	60	T
2007/1	VET 332	TÉCNICA OPERATÓRIA VETERINÁRIA	4	90	78
2007/1	VET 337	DIAGNÓSTICO POR IMAGEM	3	60	85
2007/1	VET 350	INSPEÇÃO DE PRODUTOS DE ORIGEM ANIMAL I	4	75	74
2007/1	VET 374	CLÍNICA MÉDICA DE RUMINANTES E EQUÍDEOS	6	120	63
2007/1	VET 382	REPRODUÇÃO ANIMAL I	4	90	95
2007/1	ZOO 453	FORRAGENS E PLANTAS FORRAGEIRAS	3	60	T
2007/2	ERU 430	ADMINISTRAÇÃO RURAL	4	75	82
2007/2	ERU 451	EXTENSÃO RURAL	4	60	80
2007/2	VET 334	CIRURGIA GERAL E OBSTETRÍCIA VETERINÁRIAS	5	105	82
2007/2	VET 375	CLÍNICA MÉDICA DE CÃES E GATOS	4	90	72
2007/2	ZOO 433	PRODUÇÃO DE SUÍNOS	4	60	T
2007/2	ZOO 436	PRODUÇÃO DE BOVINOS DE LEITE	4	60	70
2007/2	ZOO 437	PRODUÇÃO DE BOVINOS DE CORTE	4	60	89
2008/1	VET 349	SANEAMENTO	4	60	77
2008/1	VET 446	DOENÇAS DE AVES	3	60	91
2008/1	VET 495	ESTÁGIO SUPERVISIONADO EM MEDICINA VETERINÁRIA	0	450	S
2008/1	ZOO 423	SUINOCULTURA	4	60	95
2008/1	ZOO 449	NUTRIÇÃO ANIMAL	3	45	84
		Total:	**0208**	**4350**	

VIÇOSA, 12 de agosto de 2008

Heloiza Chaves Rios
Chefe da Seção de Históricos Escolares

Edson Martinho Ramos
Diretor Substituto do Registro Escolar

Federal Rural University of Rio de Janeiro
Office of the Dean of Undergraduate Studies - DAARG
DRA - Academic Records Division

[DAARG stamp]

Academic Records System

Informational Academic Transcript

12/16/2008 - 2:44:29 PM

Enrollment No.: **200306521-9** | Name: **HANNA CAROLINA CAMPOS FERREIRA**

Parents: YULO ANTONIO FERREIRA DE SA
MARIANE CAMPOS FERREIRA

Date of Birth: 09/25/1984

CPF: 06741091637 | Military Document /
Identity Document No.: 12992107 | Issuing Authority: SSP/MG | Issuing Date: 05/01/2000
Voter ID: 145125740221 | Electoral District: 148 | Polling Station: 0053

Program: **VETERINARY MEDICINE**
Recognition: Decree No. 23,858 (02/08/1934)
Total mandatory credits: 279
Total elective credits: 4
Minimum Duration: 10 semesters Maximum Duration: 16 semesters

Secondary Education Completion: 2002
Institution: Novo Milênio School
City: Januária
State: MG

University Entrance Examination:
2003 – UFRRJ

Total Score = 1687

Subject	Grade
BIOLOGY	548.0
PHYSICS	447.0
GEOGRAPHY	604.0
HISTORY	659.0
MATHEMATICS	510.0
CHEMISTRY	545.0
PORTUGUESE LANGUAGE	702.0
WRITING	531.0
FOREIGN LANGUAGE	568.0
BIOLOGY (FREE RESPONSE)	628.0
CHEMISTRY (FREE RESPONSE)	630.0

Grading Scale

A (Excellent) = 9.0 to 10.0
B (Very Good) = 7.5 to 8.9
C (Good) = 6.0 to 7.4
D (Satisfactory) = 5.0 to 5.9
R (Poor) = 0.0 to 4.9
E (Enrollment Suspension)
F (Insufficient Performance No Attendance)
H (Withdrawal)
W (Transfer Credit)
Y (Course Equivalency)

Academic Status
AP = Passed
RM, RF = Failed due to grade / attendance
AB = Withdrawal
AE, AI = External / Internal credit transfer
ED = Course equivalency
RI = Incomplete performance
AC, NC = Req. Completed / Not Completed

Grades H and F are considered equivalent to grade R.
The minimum passing grade is D. The minimum passing score is 5.0.
One credit corresponds to 15 class hours.

In accordance with Resolution No. 030/2008/CEPE, as of the first academic term of 2008, the evaluation of students' academic performance at UFRRJ began to be expressed in numerical grades instead of letter grades.

Notes:

2003/II - Transfer credits were granted for courses previously taken at the State University of Montes Claros, in accordance with process No. 7297/03.
2006-1 - Automatic enrollment suspension - Resolution No. 053/06, of 05/19/2006.
2006-1 - Transferred from UFRRJ to the Federal University of Viçosa, in accordance with Transfer Guide No. 028/06, of 06/06/2006.

Term - 2003 - 2

Code	Course	Credits	Grade	Status
IB101	ANIMAL ANATOMY I	8	B	AP
IB108	CELL BIOLOGY	4	W	AE
IB152	ANIMAL HISTOLOGY I	4	B	AP
IB302	BIOPHYSICS	4	C	AP
IC281	INTRODUCTION TO BIOSTATISTICS	4	B	AP
IC290	INTRODUCTION TO COMPUTING	2	W	AE
IC337	FUNDAMENTALS OF CHEMISTRY	4	W	AE

Term - 2003 - 2

Code	Course	Credits	Grade	Status
IV101	DEONTOLOGY AND VETERINARY MEDICAL LEGISLATION	2	C	AP
IV404	RESEARCH METHODOLOGY	2	B	AP

Credits attempted: 24	Credits earned: 24	Cumulative credits: 34	GPA: 2.75

Term - 2004 - 1

Code	Course	Credits	Grade	Status
IB103	ANIMAL ANATOMY II	8	B	AP
IB153	ANIMAL HISTOLOGY II	5	B	AP
IC283	BIOSTATISTICS	4	C	AP
IC346	GENERAL BIOCHEMISTRY	8	C	AP
IV217	GENERAL MICROBIOLOGY	4	B	AP
IZ321	ANIMAL EXTERIOR AND BREEDS	2	C	AP

Credits attempted: 31	Credits earned: 31	Cumulative credits: 65	GPA: 2.55

Term - 2004 - 2

Code	Course	Credits	Grade	Status
IB155	EMBRYOLOGY	2	B	AP
IB306	ANIMAL PHYSIOLOGY I	4	B	AP
IB309	PHYSIOLOGICAL CHEMISTRY	4	C	AP
IB450	BASIC GENETICS	4	C	AP
IF126	GENERAL ECOLOGY	2	A	AP
IH403	AGRARIAN LAW AND LEGISLATION	2	A	AP
IV218	VETERINARY IMMUNOLOGY	4	C	AP
IV401	MEDICAL ZOOLOGY AND PARASITOLOGY I	6	B	AP
IZ115	FORAGE PLANTS	2	B	AP

Credits attempted: 30	Credits earned: 30	Cumulative credits: 95	GPA: 2.73

Term - 2005 - 1

Code	Course	Credits	Grade	Status
IB303	PHARMACOLOGY I	4	B	AP
IB307	ANIMAL PHYSIOLOGY II	4	C	AP
IB451	INTRODUCTION TO ANIMAL BREEDING GENETICS	3	B	AP
IF102	NATURAL RESOURCES CONSERVATION	2	A	AP
IV219	VETERINARY BACTERIOLOGY	4	A	AP
IV221	VETERINARY VIROLOGY	4	C	AP
IV402	PARASITOLOGY II	6	C	AP

Credits attempted: 27	Credits earned: 27	Cumulative credits: 122	GPA: 2.70

Term - 2005 - 2

Code	Course	Credits	Grade	Status
IB304	PHARMACOLOGY II	4	C	AP
IH210	AGRICULTURAL ECONOMICS	4	B	AP
IV125	GENERAL PATHOLOGICAL ANATOMY	6	B	AP

Term - 2005 - 2

Code	Course	Credits	Grade	Status
IV137	APPLIED EPIDEMIOLOGY	2	A	AP
IV220	VETERINARY MYCOLOGY	4	B	AP
IV309	CLINICAL PATHOLOGY	6	B	AP
IZ317	ANIMAL BIOCLIMATOLOGY	3	A	AP

Credits attempted: 29	Credits earned: 29	Cumulative credits: 151	GPA: 3.03

Term - 2006 - 1

Code	Course	Credits	Grade	Status
ZZ003	TRANSFERRED FROM THE UNIVERSITY	0		

Credits attempted: 0	Credits earned: 0	Cumulative credits: 0	
		Cumulative GPA: 2.75 (Cumulative Average: 8.51)	

-----// signature //-----
Zaida Maria P. S. de Souza
Head of SHE
SIAPE 0386942
UFRRJ

STATE UNIVERSITY OF MONTES CLAROS
GENERAL SECRETARIAT

Recognized by Ministerial Ordinance No. 1116 of 07/21/1994

ACADEMIC TRANSCRIPT

Name: HANNA CAROLINA CAMPOS FERREIRA	**Enrollment No.: 0091987**

Parents: YULO ANTÔNIO FERREIRA DE SÁ / MARIANE CAMPOS FERREIRA		
Date of Birth: 09/25/1984 Place of Birth: JANUÁRIA /		Nationality: BRAZILIAN
Identity Document No.: MG-12.992.107	Issuing Date: 05/01/2000	Issuing Authority: MG
Military Service: XXX	No.:	Issuing Authority:
Voter ID: 145125740221	Electoral District: 148	Polling Station: 53

SECONDARY EDUCATION OR EQUIVALENT		
Institution: NOVO MILÊNIO SCHOOL		
Location: JANUÁRIA / MG		Year of Completion: 2002

SELECTION PROCESS - Year: 2002
University Entrance Examination: STATE UNIVERSITY OF MONTES CLAROS
Total Score: 88.93

Program: BIOLOGICAL SCIENCES – BACHELOR'S DEGREE
Degree: Bachelor's

Term	Year / Semester	Course	CH	Final Grade	Final Status
1	2003 / 1	CELL BIOLOGY	80	83	Passed
1	2003 / 1	BIOLOGICAL DIVERSITY	60	87	Passed
1	2003 / 1	PHILOSOPHY	60	95	Passed
1	2003 / 1	INFORMATICS	60	98	Passed
1	2003 / 1	MATHEMATICS	60	89	Passed
1	2003 / 1	GENERAL CHEMISTRY	80	86	Passed
2	2003 / 2	BOTANY OF LOWER PLANTS	80	…	Enrollment Suspended
2	2003 / 2	PHYSICS APPLIED TO BIOLOGY	60	…	Enrollment Suspended
2	2003 / 2	HISTOLOGY	80	…	Enrollment Suspended
2	2003 / 2	SCIENTIFIC METHODOLOGY	60	…	Enrollment Suspended
2	2003 / 2	ORGANIC CHEMISTRY	80	…	Enrollment Suspended
2	2003 / 2	ZOOLOGY I	80	…	Enrollment Suspended
2	2004 / 2	BOTANY OF LOWER PLANTS	80	-	Enrollment Suspended
2	2004 / 2	PHYSICS APPLIED TO BIOLOGY	60	-	Enrollment Suspended
2	2004 / 2	HISTOLOGY	80	-	Enrollment Suspended
2	2004 / 2	SCIENTIFIC METHODOLOGY	60	-	Enrollment Suspended
2	2004 / 2	ORGANIC CHEMISTRY	80	-	Enrollment Suspended
2	2004 / 2	ZOOLOGY I	60	-	Enrollment Suspended
		Total Hours:	**400**	class hours	

Renewal of Program Recognition: State Decree unnumbered , of 03/16/2006 - Official Gazette of Minas Gerais OF 03/17/2006.

Degree Conferral: XXX	**Diploma Issuance:** XXX

Notes: **Enrollment in the Biological Sciences / Bachelor's Degree program was suspended in the 2nd term during the second semester of 2003 and 2004.**
- The student was considered WITHDRAWN for failure to renew enrollment in accordance with the academic calendar.

Professor Darcy Ribeiro University Campus
Telephone: (0xx38) 3229-8040 Fax: (0xx3B) 3229-8043
P.O. Box No. 126 – Montes Claros / MG – ZIP Code: 39.401-089
http://www.unimontes.br – Email: secretariageral@unimontes.br

Translator's Note: CH – Course Hours.

Name: HANNA CAROLINA CAMPOS FERREIRA	Enrollment No.: 0091987

-----// signature //-----
MARIA JOSÉ VIEIRA ROCHA
General Secretary

-----// signature //-----
MARIA DAS MERCÊS BORÉM C. MACHADO
Director of C.C.B.S.

Montes Claros/MG, 12/02/2008

[stamp]
Maria José Vieira Rocha
General Secretary
Masp 1.046.538-3

Professor Darcy Ribeiro University Campus
Telephone: (0xx38) 3229-8040 Fax: (0xx3B) 3229-8043
P.O. Box No. 126 – Montes Claros / MG – ZIP Code: 39.401-089
http://www.unimontes.br – Email: secretariageral@unimontes.br

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura.

_____ **Date: April 23, 2026.**

Universidade Federal Rural do Rio de Janeiro
Decanato de Ensino de Graduação - DAARC
DRA - Divisão de Registros Acadêmicos

Sistema de Controle Acadêmico

Histórico Escolar Informativo

16/12/2008 14:44:29

DECANATO DE ENSINO E GRADUAÇÃO - Divisão de Registro Acadêmico - UFRRJ

Matrícula: **200306521-9** | Nome: **HANNA CAROLINA CAMPOS FERREIRA**

Filiação: YULO ANTONIO FERREIRA DE SA
MARIANE CAMPOS FERREIRA

Nascimento: 25/9/1984

CPF: 06741091637 | Doc. Militar /
Identidade: 12992107 | Orgão: SSP/MG | Emissão: 1/5/2000
Título de eleitor: 145125740221 | Zona: 148 | Seção: 0053

Curso: **MEDICINA VETERINARIA**
Reconhecido: Decreto 23.858 (8/2/1934)
Total de créditos obrigatórios: 279
Total de créditos optativos: 4
Tempo Mínimo: 10 períodos | Tempo Máximo: 16 períodos

Conclusão do 2° Grau: 2002
Entidade: Colegium Novo Milênio
Cidade: Januária
Estado: MG

Vestibular: 2003 - UFRRJ

Total de pontos = 1687

Matéria	Nota
BIOLOGIA	548.0
FISICA	447.0
GEOGRAFIA	604.0
HISTORIA	659.0
MATEMATICA	510.0
QUIMICA	545.0
LINGUA PORTUGUESA	702.0
REDAÇAO	531.0
LINGUA ESTRANGEIRA	568.0
BIOLOGIA DISCURSIVA	628.0
QUIMICA DISCURSIVA	630.0

Conceitos

A (Excelente) = 9,0 a 10,0
B (Muito Bom) = 7,5 a 8,9
C (Bom) = 6,0 a 7,4
D (Regular) = 5,0 a 5,9
R (Deficiente) = 0,0 a 4,9
E (Trancamento)
F (Rendimento Inc. Sem Freqüência)
H (Abandono)
W (Aproveit. Externo)
Y (Equivalência Disc)

Situação Acadêmica
AP = Aprovado
RM, RF = Reprovado por média / faltas
AB = Abandono
AE, AI = Aproveitamento externo / interno
ED = Equivalência de disciplina
RI = Rendimento incompleto
AC, NC = Atividade cumprida / não cumpr.

Os conceitos H e F terão equivalência ao conceito R.
O conceito mínimo para aprovação é D. A nota mínima para aprovação é 5.0.
Um crédito correspondente a 15 horas aula.

De acordo com a Deliberação 030/2008/CEPE, a partir do 1° período letivo de 2008, o critério de expressão do aproveitamento acadêmico dos discentes da UFRRJ passa a ser expresso em notas em substituição aos conceitos.

Observações:

2003/II - Obteve aproveitamentos externos de disciplinas, por ter cursado disciplinas em comum na Universidade Estadual de Montes Claros, conforme processo nº7297/03.
2006-1 - Trancamento automático de matrícula - Deliberação 053/06 de 19/05/2006.
2006-1 - Transferido da UFRRJ para a Universidade Federal d_ Viçosa, conforme Guia de Transferência nº 028/06, de 06/06/06.

Período - 2003 - 2

Código	Disciplina	Créditos	Conceito	Situação
IB101	ANATOMIA ANIMAL I	8	B	AP
IB108	BIOLOGIA CELULAR	4	W	AE
IB152	HISTOLOGIA ANIMAL I	4	B	AP
IB302	BIOFISICA	4	C	AP
IC281	INTRODUÇAO A BIOESTATISTICA	4	B	AP
IC290	INTRODUÇAO A COMPUTAÇAO	2	W	AE
IC337	FUNDAMENTOS EM QUIMICA	4	W	AE

Histórico Escolar Informativo

Matrícula: **200306521-9** | Nome: **HANNA CAROLINA CAMPOS FERREIRA** |

Período - 2003 - 2

Código	Disciplina	Créditos	Conceito	Situação
IV101	DEONTOLOGIA E LEGISLAÇAO MEDICA VETERINARIA	2	C	AP
IV404	METODOLOGIA DA PESQUISA	2	B	AP

Créditos solicitados : 24	Créditos obtidos : 24	Créditos acumulados : 34	IA: 2,75

Período - 2004 - 1

Código	Disciplina	Créditos	Conceito	Situação
IB103	ANATOMIA ANIMAL II	8	B	AP
IB153	HISTOLOGIA ANIMAL II	5	B	AP
IC283	BIOESTATISTICA	4	C	AP
IC346	BIOQUIMICA GERAL	8	C	AP
IV217	MICROBIOLOGIA GERAL	4	B	AP
IZ321	EXTERIOR E RAÇAS	2	C	AP

Créditos solicitados : 31	Créditos obtidos : 31	Créditos acumulados : 65	IA: 2,55

Período - 2004 - 2

Código	Disciplina	Créditos	Conceito	Situação
IB155	EMBRIOLOGIA	2	B	AP
IB306	FISIOLOGIA ANIMAL I	4	B	AP
IB309	QUIMICA FISIOLOGICA	4	C	AP
IB450	GENETICA BASICA	4	C	AP
IF126	ECOLOGIA GERAL	2	A	AP
IH403	DIREITO AGRARIO E LEGISLAÇAO	2	A	AP
IV218	IMUNOLOGIA VETERINARIA	4	C	AP
IV401	ZOOLOGIA MEDICA E PARASITOLOGIA I	6	B	AP
IZ115	PLANTAS FORRAGEIRAS	2	B	AP

Créditos solicitados : 30	Créditos obtidos : 30	Créditos acumulados : 95	IA: 2,73

Período - 2005 - 1

Código	Disciplina	Créditos	Conceito	Situação
IB303	FARMACOLOGIA I	4	B	AP
IB307	FISIOLOGIA ANIMAL II	4	C	AP
IB451	INTRODUÇAO A GENETICA DO MELHORAMENTO ANIMAL	3	B	AP
IF102	CONSERVAÇAO DE RECURSOS NATURAIS	2	A	AP
IV219	BACTERIOLOGIA VETERINARIA	4	A	AP
IV221	VIROLOGIA VETERINARIA	4	C	AP
IV402	PARASITOLOGIA II	6	C	AP

Créditos solicitados : 27	Créditos obtidos : 27	Créditos acumulados : 122	IA: 2,70

Período - 2005 - 2

Código	Disciplina	Créditos	Conceito	Situação
IB304	FARMACOLOGIA II	4	C	AP
IH210	ECONOMIA AGRARIA	4	B	AP
IV125	ANATOMIA PATOLOGICA GERAL	6	B	AP

Histórico Escolar Informativo

Matrícula: 200306521-9	Nome: HANNA CAROLINA CAMPOS FERREIRA	Página - 3

Período - 2005 - 2

Código	Disciplina	Créditos	Conceito	Situação
IV137	EPIDEMIOLOGIA APLICADA	2	A	AP
IV220	MICOLOGIA VETERINARIA	4	B	AP
IV309	PATOLOGIA CLINICA	6	B	AP
IZ317	BIOCLIMATOLOGIA ANIMAL	3	A	AP

Créditos solicitados : 29	Créditos obtidos : 29	Créditos acumulados : 151	IA: 3,03

Período - 2006 - 1

Código	Disciplina	Créditos	Conceito	Situação
ZZ003	TRANSFERIDO DA UNIVERSIDADE	0		

Créditos solicitados : 0	Créditos obtidos : 0	Créditos acumulados : 0	
			IAA: 2,75 (CRA: 8,51)

Zaida M. P. S. de Souza
Chefe da SHE
SIAPE 0386942
UFRRJ

UNIVERSIDADE ESTADUAL DE MONTES CLAROS
SECRETARIA GERAL

Reconhecida pela Portaria Ministerial Nº 1116 de 21/07/1994

HISTÓRICO ESCOLAR

Nome: HANNA CAROLINA CAMPOS FERREIRA	**Matrícula: 0091987**

Filiação: YULO ANTÔNIO FERREIRA DE SÁ / MARIANE CAMPOS FERREIRA			
Data de Nascimento: 25/09/1984	Naturalidade: JANUÁRIA /		Nacionalidade: BRASILEIRA
Identidade: MG-12.992.107	Data de Expedição: 01/05/2000	Órgão Expedidor: MG	
Serviço Militar: XXX	Nº:	Órgão Expedidor:	
Título de Eleitor: 145125740221	Zona: 148	Seção: 53	

ENSINO MÉDIO OU EQUIVALENTE

Estabelecimento: COLEGIUM NOVO MILÊNIO

Sede: JANUÁRIA / MG Ano de Conclusão: 2002

PROCESSO SELETIVO - Ano: 2002

Concurso Vestibular: UNIVERSIDADE ESTADUAL DE MONTES CLAROS

Total de Pontos: 88,93

Curso : CIÊNCIAS BIOLÓGICAS - BACHARELADO

Habilitação: Bacharelado

Série Período	Ano Semestre	Disciplina	CH	Média Final	Situação Final
1	2003 / 1	BIOLOGIA CELULAR	80	83	Aprovado
1	2003 / 1	DIVERSIDADE BIOLÓGICA	60	87	Aprovado
1	2003 / 1	FILOSOFIA	60	95	Aprovado
1	2003 / 1	INFORMÁTICA	60	98	Aprovado
1	2003 / 1	MATEMÁTICA	60	89	Aprovado
1	2003 / 1	QUÍMICA GERAL	80	86	Aprovado
2	2003 / 2	BOTÂNICA DE VEGETAIS INFERIORES	80	...	Matrícula trancada
2	2003 / 2	FÍSICA APLICADA À BIOLOGIA	60	...	Matrícula trancada
2	2003 / 2	HISTOLOGIA	80	...	Matrícula trancada
2	2003 / 2	METODOLOGIA CIENTÍFICA	60	...	Matrícula trancada
2	2003 / 2	QUÍMICA ORGÂNICA	80	...	Matrícula trancada
2	2003 / 2	ZOOLOGIA I	80	...	Matrícula trancada
2	2004 / 2	BOTÂNICA DE VEGETAIS INFERIORES	80	-	Matrícula trancada
2	2004 / 2	FÍSICA APLICADA À BIOLOGIA	60	-	Matrícula trancada
2	2004 / 2	HISTOLOGIA	80	-	Matrícula trancada
2	2004 / 2	METODOLOGIA CIENTÍFICA	60	-	Matrícula trancada
2	2004 / 2	QUÍMICA ORGÂNICA	80	-	Matrícula trancada
2	2004 / 2	ZOOLOGIA I	60	-	Matrícula trancada

Total da carga horária: **400** horas/aulas

Renovação de Reconhecimento do Curso: Decreto Estadual s/nº de 16/03/06 - D.O.MG. DE 17/03/2006.

Colação de Grau: XXX **Expedição de Diploma:** XXX

Observações: **Trancou Matricula no curso de Ciências Biológicas / Bacharelado no 2º período no 2º semestre de 2003 e 2004.**
- Acadêmica considerada DESISTENTE por não renovar matricula conforme calendário escolar.

Campus Universitário Professor Darcy Ribeiro
Telefone: (0xx38) 3229-8040 Fax: (0xx38) 3229-8043
Caixa Postal nº 126 - Montes Claros / MG - cep: 39.401-089
http://www.unimontes.br - e-mail: secretariageral@unimontes.br

Nome: HANNA CAROLINA CAMPOS FERREIRA	Matrícula: 0091987

MARIA JOSÉ VIEIRA ROCHA
Secretária Geral

MARIA DAS MERCÊS BORÉM C. MACHADO
Diretora do C.C.B.S.

Montes Claros/MG , 02/12/2008

Maria José Vieira Rocha
Secretária Geral
Masp 1.046.538-3

Campus Universitário Professor Darcy Ribeiro
Telefone: (0xx38) 3229-8040 Fax: (0xx38) 3229-8043
Caixa Postal nº 126 - Montes Claros / MG - cep: 39.401-089
http://www.unimontes.br - e-mail: secretariageral@unimontes.br

Federative Republic of Brazil
Ministry of Education

Federal University of Viçosa

The President of the Federal University of Viçosa, Minas Gerais,
on April 16, 2012, in the exercise of her duties, hereby confers the degree of

Master of Science

upon

Hanna Carolina Campos Ferreira

Brazilian, born in the State of Minas Gerais on September 25, 1984,
holder of identity document No. MG-12.992.107 - MG,

in accordance with the regulations of the University, and hereby grants her this diploma so that she may enjoy all the rights, honors, and privileges pertaining to the aforementioned degree, having fulfilled the requirements of the

Master's Program in Veterinary Medicine

Viçosa, June 28, 2012

-----// signature //-----
President

-----// signature //-----
Graduate

-----// signature //-----
Secretary of Academic Councils

-----// signature //-----
Director of Academic Records

MINISTRY OF EDUCATION
FEDERAL UNIVERSITY FOF VIÇOSA

Diploma registered in book **09**, page **195**, No. **11259**, pursuant to article 48 of law No. 9,394/96.

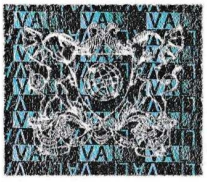
Viçosa, June 28, 2012.

-----// signature //-----
JOSÉ FÁBIO DE ARAÚJO - Registration No. 2414-7
Director of the Diploma and Certificates Registration Department

-----// signature //-----
PROFESSOR GIOVANA FIGUEIREDO ROSSI
Director of Academic Records

PRESIDENT: PROFESSOR NILDA DE FÁTIMA FERREIRA SOARES

SECRETARY OF ACADEMIC COUNCILS: PROFESSOR MARIA DAS GRAÇAS SOARES FLORESTA



Diploma registered in accordance with Ministerial Ordinances No. 2,264, of December 19, 1997, published in the Official Gazette No. 248-E, of December 23, 1997, and No. 1,418, of December 23, 1998, published in the Official Gazette No. 247-E, of December 24, 1998.

Federal University of Viçosa

Academic Record – Viçosa Campus
Av. P.H. Rolfs, No Number – University Campus
36570-000 – Viçosa – MG – Brazil
Telephone: (31) 3899-2800 Fax: (31) 3899-1241 Email: dre@ufv.br www.ufv.br/res CNPJ: 25.944.455/0001-96

ACADEMIC TRANSCRIPT

Program: MASTER'S PROGRAM IN VETERINARY MEDICINE
Name: HANNA CAROLINA CAMPOS FERREIRA **Enrollment No. 54990**

Father's Name: Yulo Antônio Ferreira de Sá
Mother's Name: Mariane Campos Ferreira
Date of Birth: 09/25/1984 **Place of Birth:** Januária **State:** MG **Nationality:** Brazilian
Identity Document No.: MG-12.992.107 **Issuing Authority:** SSP/MG
Voter ID: 145125740221 **Electoral District:** 148 **Polling Station:** 053
Location: Januária **State:** MG

Undergraduate Degree

Program: VETERINARY MEDICINE **Completion:** 07/25/2008
Institution: Federal University of Viçosa
Location: Viçosa – MG
Registration No.: 22456 **Book No.:** 25 **Page No.:** 32 **Date of Registration:** 07/30/2008 **Institution of Registration:** MEC/UFV

Master's Degree

Thesis Title:

BOVINE HERPESVIRUS (BoHV-1 AND/OR BoHV-5): ROUTES OF SHEDDING, VIREMIA, AND SEROLOGY IN NATURALLY INFECTED DAIRY COWS

Date of Defense: 02/10/2012

Degree Awarded: Magister Scientiae in Veterinary Medicine **Date:** 04/16/2012

Notes:
Three credits earned as a non-degree student at the Federal University of Minas Gerais were recognized, in accordance with the Graduate Council meeting held on 05/13/2011.

VIÇOSA, April 14, 2014

-----// signature //-----
José Antônio Lira
Acting Director of the Academic Administration Office

-----// signature //-----
Giovana Figueiredo Rossi
Director of Academic Records

Program: MASTER'S PROGRAM IN VETERINARY MEDICINE
Name: HANNA CAROLINA CAMPOS FERREIRA **Enrollment No. 54990**

Year/Semester	Code	Course Name	Credits	C.H.	Grade
2010/1	BIO 650	CELLULAR IMMUNOLOGY	4	60	A
2010/1	LET 610	INSTRUMENTAL ENGLISH I	4	60	S
2010/1	VET 640	BACTERIAL AND RICKETTSIAL DISEASES OF IMPORTANCE IN VET. MEDICINE	4	60	B
2010/1	VET 644	VIROLOGY OF VIRAL DISEASES OF DOMESTIC ANIMALS	4	60	A
2010/2	EDU 660	HIGHER EDUCATION TEACHING METHODOLOGY	3	60	A
2010/2	VET 646	EPIDEMIOLOGICAL METHODS APPLIED TO VETERINARY RESEARCH	4	60	A
2010/2	VET 778	TEACHING INTERNSHIP III	3	90	A
2010/2	VET 797	SEMINAR	0	15	S
2011/1	VET 799	RESEARCH	0	0	S
2011/2	VET 799	RESEARCH	0	0	S
		Total:	**0026**	**450**	

Assessment of Academic Performance

Grade	Symbol	Grade Percentage
Excellent	A	from 90 to 100
Good	B	from 75 to 89
Satisfactory	C	from 60 to 74
Failed	R	Below 60
Passed	H	
Incomplete Evaluation	I	
Course Registration Cancelled	J	
Enrollment Suspension	K	
Failed due to Absence	L	
Enrolled	M	
Unsatisfactory Performance	N	
Student in Dismissal Process	O	
Satisfactory Performance	S	
Course in Progress	Q	
Leave of Absence	Y	
Special Leave of Absence	W	

VIÇOSA, April 14, 2014

-----// signature //-----
José Antônio Lira
Acting Director of the Academic Administration Office

-----// signature //-----
Giovana Figueiredo Rossi
Director of Academic Records

Translator's Note: C.H – Course Hours.

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: April 8, 2026.**

República Federativa do Brasil
Ministério da Educação

Universidade Federal de Viçosa

A Reitora da Universidade Federal de Viçosa, Minas Gerais,
em 16 de abril de 2012, no uso de suas atribuições, confere o título de

Magister Scientiae

a

Hanna Carolina Campos Ferreira

brasileira, natural do Estado de Minas Gerais, nascida a 25 de setembro de 1984,
portadora da cédula de identidade número MG-12.992.107 - MG,

de acordo com as normas da Universidade e outorga-lhe o presente diploma
para que possa gozar de todos os direitos, honras e privilégios inerentes ao mencionado
título, por haver satisfeito as exigências do Programa de

Mestrado em Medicina Veterinária

Viçosa, 28 de junho de 2012

Soares
Reitora

Hanna Carolina Campos Ferreira
Diplomado

Secretária de Órgãos Colegiados

Diretora do Registro Escolar

MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE VIÇOSA

Diploma registrado no livro **09**, folha **195**, n.º **11259**, de acordo com o disposto no artigo 48 da Lei n.º 9.394/96.

Viçosa, 28 de junho de 2012.

JOSÉ FÁBIO DE ARAÚJO - Mat. 2414-7
Chefe de Serviço de Registro de Diplomas e Certificados

PROFESSORA GIOVANA FIGUEIREDO ROSSI
Diretora do Registro Escolar

REITORA: PROFESSORA NILDA DE FÁTIMA FERREIRA SOARES

Secretária de Órgãos Colegiados: PROFESSORA MARIA DAS GRAÇAS SOARES FLORESTA



Diploma registrado de acordo com o disposto nas Portarias Ministeriais n.º 2.264, de 19 de dezembro de 1997, publicada no Diário Oficial de 23 de dezembro de 1997 e n.º 1.418, de 23 de dezembro de 1998, publicada no Diário Oficial de 24 de dezembro de 1998.

Universidade Federal de Viçosa

Registro Escolar - Campus Viçosa
Av. P.H. Rolfs, s/n - Campus Universitário
36570-000 - Viçosa - MG - Brasil
Telefone: (31) 3899-2800 Fax: (31) 3899-1241 Email: dre@ufv.br www.ufv.br/res CNPJ: 25.944.455/0001-96

HISTÓRICO ESCOLAR

Curso: MESTRADO EM MEDICINA VETERINÁRIA
Nome: HANNA CAROLINA CAMPOS FERREIRA **Matrícula: 54990**

Nome Pai: Yulo Antônio Ferreira de Sá
Nome Mãe: Mariane Campos Ferreira
Data Nascimento: 25/09/1984 **Naturalidade:** Januária **UF:** MG **Nacionalidade:** Brasileira
Identidade: MG-12.992.107 **Orgão de Expedição:** SSP/MG
Título Eleitor: 145125740221 **Zona:** 148 **Seção:** 053
Local: Januária **UF:** MG

Graduação

Curso: MEDICINA VETERINÁRIA **Conclusão:** 25/07/2008
Estabelecimento: Universidade Federal de Viçosa
Local: Viçosa - MG
Nº Registro: 22456 **Nº Livro:** 25 **Nº Folha:** 32 **Data Registro:** 30/07/2008 **Instituição Registro:** MEC/UFV

Mestrado

Título da Dissertação:

HERPESVÍRUS BOVINO (BoHV-1 E/OU BoHV-5): VIAS DE ELIMINAÇÃO, VIREMIA E SOROLOGIA DE VACAS LEITEIRAS NATURALMENTE INFECTADAS

Data da Defesa: 10/02/2012

Título Obtido: Magister Scientiae em Medicina Veterinária **Data:** 16/04/2012

Observações:

Foram aproveitados 3 créditos obtidos quando estudante especial da Universidade Federal de Minas Gerais, conforme reunião do Conselho de Pós-Graduação no dia 13/05/2011.

VIÇOSA, 14 de abril de 2014

José Antônio Iria
Chefe Pro Tempore do Serviço de Controle Acadêmico

Giovana Figueiredo Rossi
Diretora do Registro Escolar

Curso: Mestrado em Medicina Veterinária

Nome: Hanna Carolina Campos Ferreira **Matrícula: 54990**

Ano/Semestre	Código	Nome da Disciplina	Créditos	C.H.	Conceito
2010/1	BIO 650	IMUNOLOGIA CELULAR	4	60	A
2010/1	LET 610	INGLÊS INSTRUMENTAL I	4	60	S
2010/1	VET 640	DOENCAS BACTERIANAS E RICKETTSIAIS DE IMPORT. EM MEDICINA VETERINÁRIA	4	60	B
2010/1	VET 644	VIROL.DOENCAS VIRAIS DOS ANIMAIS DOMEST.	4	60	A
2010/2	EDU 660	METODOLOGIA DO ENSINO SUPERIOR	3	60	A
2010/2	VET 646	MÉTODOS EPIDEMIOLÓGICOS APLICADOS À PESQUISA VETERINÁRIA	4	60	A
2010/2	VET 778	ESTAGIO EM ENSINO III	3	90	A
2010/2	VET 797	SEMINARIO	0	15	S
2011/1	VET 799	PESQUISA	0	0	S
2011/2	VET 799	PESQUISA	0	0	S
		Total:	**0026**	**450**	

Avaliação do Rendimento Escolar

Conceito	Símbolo	Rendimento Percentual
Excelente	A	de 90 a 100
Bom	B	de 75 a 89
Regular	C	de 60 a 74
Reprovado	R	Abaixo de 60
Aprovado	H	
Avaliação Incompleta	I	
Cancelamento de Inscrição em Disciplina	J	
Trancamento de Matrícula	K	
Reprovação por Infrequência	L	
Matriculado	M	
Desempenho não-Satisfatório	N	
Aluno em Situação de Desligamento com Processo	O	
Desempenho Satisfatório	S	
Disciplina em Andamento	Q	
Afastamento	Y	
Afastamento Especial	W	

VIÇOSA, 14 de abril de 2014

José Antônio Iria
Chefe Pro Tempore do Serviço de Controle Acadêmico

Giovana Figueiredo Rossi
Diretora do Registro Escolar

Federative Republic of Brazil
Ministry of Education

Federal University of Viçosa

The President of the Federal University of Viçosa, Minas Gerais, on September 20, 2016, in the exercise of her duties, hereby confers the degree of

Doctor of Science

upon

Hanna Carolina Campos Ferreira

Brazilian, born in the State of Minas Gerais on September 25, 1984,
holder of identity document No. MG-12.992.107 - MG,

in accordance with the regulations of the University, and hereby grants her this diploma so that she may enjoy all the rights, honors, and privileges pertaining to the aforementioned degree, having fulfilled the requirements of the

Doctoral Program in Veterinary Medicine

Viçosa, December 2, 2016

-----// signature //-----
President

-----// signature //-----
Graduate

-----// signature //-----
Secretary of Academic Councils

-----// signature //-----
Director of Academic Records

MINISTRY OF EDUCATION
FEDERAL UNIVERSITY FOF VIÇOSA

54990

Diploma registered in book **12**, page **364**, No. **15365**, pursuant to article 48 of law No. 9,394/96.

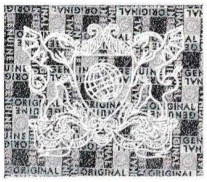
Viçosa, December 2, 2016

-----// signature //-----
JOSÉ FÁBIO DE ARAÚJO - Registration No. 2414-7
Director of the Diploma and Certificates Registration Department

-----// signature //-----
EDSON MARTINHO RAMOS
Director of Academic Records

PRESIDENT: PROFESSOR NILDA DE FÁTIMA FERREIRA SOARES

SECRETARY OF ACADEMIC COUNCILS: PROFESSOR JOSÉ HENRIQUE DE OLIVEIRA



Diploma registered in accordance with Ministerial Ordinances No. 2,264, of December 19, 1997, published in the Official Gazette No. 248-E, of December 23, 1997, and No. 1,418, of December 23, 1998, published in the Official Gazette No. 247-E, of December 24, 1998.

Federal University of Viçosa

Academic Record – Viçosa Campus
Av. P.H. Rolfs, No Number – University Campus
36570-000 – Viçosa – MG – Brazil
Telephone: (31) 3899-2800 Fax: (31) 3899-1241 Email: dre@ufv.br www.ufv.br/res CNPJ: 25.944.455/0001-96

ACADEMIC TRANSCRIPT

PROGRAM: DOCTORAL PROGRAM IN VETERINARY MEDICINE
NAME: HANNA CAROLINA CAMPOS FERREIRA **Enrollment No. 54990**

Father's Name: Yulo Antônio Ferreira de Sá
Mother's Name: Mariane Campos Ferreira
Date of Birth: 09/25/1984 **Place of Birth:** Januária **State:** MG **Nationality:** Brazilian
Identity Document No.: MG-12.992.107 **Issuing Authority:** SSP/MG
Voter ID: 145125740221 **Electoral District:** 148 **Polling Station:** 053
Location: Januária **State:** MG

Undergraduate Degree

Program: VETERINARY MEDICINE **Completion:** 07/25/2008
Institution: Federal University of Viçosa **Location:** Viçosa – MG
Registration No.: 22456 **Book No.:** 25 **Page No.:** 32 **Date of Registration:** 07/30/2008 **Institution of Registration:** MEC/UFV

Master's Degree

Program: MASTER'S PROGRAM IN VETERINARY MEDICINE **Completion:** 04/16/2012
Institution: Federal University of Viçosa **Location:** Viçosa – MG

Doctorate Degree

Dissertation Title:

LATENT AND PRODUCTIVE INFECTION OF BOVINE HERPESVIRUSES

Date of Defense: 07/05/2016

Degree Awarded: Doctor Scientiae in Veterinary Medicine **Date:** 09/20/2016

Notes:

****
****
In 2014/1, the student passed the QUALIFYING EXAMINATION

Viçosa, September 26, 2016

-----// signature //-----
Maria do Carmo Vieira
Director of the Graduate Studies Office

-----// signature //-----
Edson Martinho Ramos
Director of Academic Records

PROGRAM: DOCTORAL PROGRAM IN VETERINARY MEDICINE
NAME: HANNA CAROLINA CAMPOS FERREIRA **Enrollment No. 54990**

Year/Semester	Code	Course Name	Credits	C.H.	Grade
2012/1	BIO 651	HUMORAL IMMUNOLOGY	4	75	A
2012/1	VET 652	DIAGNOSTIC METHODS IN VETERINARY MICROBIOLOGY	4	60	A
2012/1	VET 791	EXPERIMENTAL METHODS IN VETERINARY MEDICINE	2	30	A
2012/2	BQI 630	CELLULAR BIOCHEMISTRY	4	60	A
2012/2	BQI 632	MOLECULAR EPIDEMIOLOGY APPLIED TO INFECTIOUS AND PARASITIC AGENTS	4	60	A
2012/2	VET 776	TEACHING INTERNSHIP I	1	30	A
2012/2	VET 777	TEACHING INTERNSHIP II	2	60	A
2012/2	VET 795	MOLECULAR EPIDEMIOLOGY OF INFECTIOUS DISEASES IN ANIMALS	2	30	A
2013/1	MBI 620	STRUCTURE AND FUNCTION OF NUCLEIC ACIDS	4	60	A
2013/1	VET 790	ADVANCED TOPICS IN ANIMAL VIROLOGY	3	45	A
2013/1	VET 797	SEMINAR	2	30	S
2013/2	VET 799	RESEARCH	0	0	S
2014/1	VET 799	RESEARCH	0	0	S
2014/2	VET 799	RESEARCH	0	0	S
2015/1	VET 799	RESEARCH	0	0	S
2015/2	VET 799	RESEARCH	0	0	S
2016/1	VET 799	RESEARCH	0	0	S
		Total:	**0032**	**540**	

Assessment of Academic Performance		
Grade	**Symbol**	**Grade Percentage**
Excellent	A	from 90 to 100
Good	B	from 75 to 89
Satisfactory	C	from 60 to 74
Failed	R	Below 60
Passed	H	
Incomplete Evaluation	I	
Course Registration Cancelled	J	
Enrollment Suspension	K	
Failed due to Absence	L	
Enrolled	M	
Unsatisfactory Performance	N	
Student in Dismissal Process	O	
Satisfactory Performance	S	
Course in Progress	Q	
Leave of Absence	Y	
Special Leave of Absence	W	

Viçosa, September 26, 2016

-----// signature //-----
Maria do Carmo Vieira
Director of the Graduate Studies Office

-----// signature //-----
Edson Martinho Ramos
Director of Academic Records

Translator's Note: C.H – Course Hours.

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: April 8, 2026.**

República Federativa do Brasil
Ministério da Educação

Universidade Federal de Viçosa

A Reitora da Universidade Federal de Viçosa, Minas Gerais,
em 20 de setembro de 2016, no uso de suas atribuições, confere o título de

Doctor Scientiae

a

Hanna Carolina Campos Ferreira

brasileira, natural do Estado de Minas Gerais, nascida a 25 de setembro de 1984,
portadora da cédula de identidade número MG-12.992.107 - MG,

de acordo com as normas da Universidade e outorga-lhe o presente diploma
para que possa usufruir de todos os direitos, honras e privilégios inerentes ao mencionado
título, por haver satisfeito as exigências do Programa de

Doutorado em Medicina Veterinária

Viçosa, 02 de dezembro de 2016

Reitora

Secretário de Órgãos Colegiados

Hanna Carolina Campos Ferreira
Diplomada

Diretor do Registro Escolar

MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE VIÇOSA

54990

Diploma registrado no livro **12**, folha **364**, n.º **15365**, de acordo com o disposto no artigo 48 da Lei n.º 9.394/96.

Viçosa, 02 de dezembro de 2016.

JOSÉ FÁBIO DE ARAÚJO - Mat. 2414-7
Chefe de Serviço de Registro de Diplomas e Certificados

EDSON MARTINHO RAMOS
Diretor do Registro Escolar

REITORA: PROFESSORA NILDA DE FÁTIMA FERREIRA SOARES

Secretário de Órgãos Colegiados: PROFESSOR JOSÉ HENRIQUE DE OLIVEIRA

Diploma registrado de acordo com o disposto nas Portarias Ministeriais n.º 2.264, de 19 de dezembro de 1997, publicada no Diário Oficial n.º 248-E, de 23 de dezembro de 1997, e n.º 1.418, de 23 de dezembro de 1998, publicada no Diário Oficial n.º 247-E, de 24 de dezembro de 1998.

Universidade Federal de Viçosa

Registro Escolar - Campus Viçosa

Av. P.H. Rolfs, s/n - Campus Universitário

36570-000 - Viçosa - MG - Brasil

Telefone: (31) 3899-2800 Fax: (31) 3899-1241 Email: dre@ufv.br www.ufv.br/res CNPJ: 25.944.455/0001-96

HISTÓRICO ESCOLAR

Curso: DOUTORADO EM MEDICINA VETERINÁRIA

Nome: HANNA CAROLINA CAMPOS FERREIRA **Matrícula: 54990**

Nome Pai: Yulo Antônio Ferreira de Sá

Nome Mãe: Mariane Campos Ferreira

Data Nascimento: 25/09/1984 **Naturalidade:** Januária **UF:** MG **Nacionalidade:** brasileira

Identidade: MG-12.992.107 **Orgão de Expedição:** SSP/MG

Título Eleitor: 145125740221 **Zona:** 148 **Seção:** 053

Local: Januária **UF:** MG

Graduação

Curso: MEDICINA VETERINÁRIA **Conclusão:** 25/07/2008

Estabelecimento: Universidade Federal de Viçosa **Local:** Viçosa - MG

Nº Registro: 22456 **Nº Livro:** 25 **Nº Folha:** 32 **Data Registro:** 30/07/2008 **Instituição Registro:** MEC/UFV

Mestrado

Curso: MESTRADO EM MEDICINA VETERINÁRIA **Conclusão:** 16/04/2012

Instituição: Universidade Federal de Viçosa **Local:** Viçosa - MG

Doutorado

Título da Tese:

LATENT AND PRODUCTIVE INFECTION OF BOVINE HERPESVIRUSES

Data da Defesa: 05/07/2016

Título Obtido: Doctor Scientiae em Medicina Veterinária **Data:** 20/09/2016

Observações:

****
****

Em 2014/1, a estudante foi aprovada no EXAME DE QUALIFICAÇÃO

VIÇOSA, 26 de setembro de 2016

Maria do Carmo Vieira
Chefe do Serviço de Pós-Graduação

Edson Martinho Ramos
Diretor de Registro Escolar

Curso: Doutorado em Medicina Veterinária
Nome: Hanna Carolina Campos Ferreira **Matrícula: 54990**

Ano/Semestre	Código	Nome da Disciplina	Créditos	C.H.	Conceito
2012/1	BIO 651	IMUNOLOGIA HUMORAL	4	75	A
2012/1	VET 652	MÉTODOS DE DIAGNÓSTICO EM MICROBIOLOGIA VETERINÁRIA	4	60	A
2012/1	VET 791	EXPERIMENTAÇÃO EM MEDICINA VETERINÁRIA	2	30	A
2012/2	BQI 630	BIOQUÍMICA CELULAR	4	60	A
2012/2	BQI 632	EPIDEMIOLOGIA MOLECULAR APLICADA A AGENTES INFECCIOSOS E PARASITÁRIOS	4	60	A
2012/2	VET 776	ESTAGIO EM ENSINO I	1	30	A
2012/2	VET 777	ESTAGIO EM ENSINO II	2	60	A
2012/2	VET 795	EPIDEMIOLOGIA MOLECULAR DE DOENÇAS INFECCIOSAS DE ANIMAIS	2	30	A
2013/1	MBI 620	ESTRUTURA E FUNCAO DE ACIDOS NUCLEICOS	4	60	A
2013/1	VET 790	TÓPICOS AVANÇADOS EM VIROLOGIA ANIMAL	3	45	A
2013/1	VET 797	SEMINARIO	2	30	S
2013/2	VET 799	PESQUISA	0	0	S
2014/1	VET 799	PESQUISA	0	0	S
2014/2	VET 799	PESQUISA	0	0	S
2015/1	VET 799	PESQUISA	0	0	S
2015/2	VET 799	PESQUISA	0	0	S
2016/1	VET 799	PESQUISA	0	0	S
		Total:	**0032**	**540**	

Avaliação do Rendimento Escolar

Conceito	Símbolo	Rendimento Percentual
Excelente	A	de 90 a 100
Bom	B	de 75 a 89
Regular	C	de 60 a 74
Reprovado	R	Abaixo de 60
Aprovado	H	
Avaliação Incompleta	I	
Cancelamento de Inscrição em Disciplina	J	
Trancamento de Matrícula	K	
Reprovação por Infrequência	L	
Matriculado	M	
Desempenho não-Satisfatório	N	
Aluno em Situação de Desligamento com Processo	O	
Desempenho Satisfatório	S	
Disciplina em Andamento	Q	
Afastamento	Y	
Afastamento Especial	W	

VIÇOSA, 26 de setembro de 2016

Maria do Carmo Vieira
Chefe do Serviço de Pós-Graduação

Edson Martinho Ramos
Diretor de Registro Escolar

Federative Republic of Brazil
Ministry of Education

Federal University of Viçosa

Department of Academic Records

CERTIFICATE OF SPECIALIZATION

("Lato sensu" Graduate Program)

The President of the Federal University of Viçosa, in the exercise of her legal duties, hereby certifies the HANNA CAROLINA CAMPOS FERREIRA, holder of Identity Document No. MG-12.992.107-SSP/MG, completed on August 2010 the specialization program in VETERINARY CLINICAL MEDICINE AND SURGERY, taught with a duration of 375 hours.

Viçosa(MG), August 2, 2011.

-----// signature //-----
Nilda de Fátima Ferreira Soares
President

-----// signature //-----
Maria das Graças Soares Floresta
Secretary of Academic Councils

FEDERAL UNIVERSITY FOF VIÇOSA

Registered on page **187**, under number **4100**, of book number **01.**

Viçosa, **08/02/2011.**

-----// signature //-----
José Fábio de Araújo - Registration No. 2414-7
Director of the Diploma and Certificates Registration Department

-----// signature //-----
Giovana Figueiredo Rossi
Director of Academic Records

Federal University of Viçosa

Academic Record – Viçosa Campus
Av. P.H. Rolfs, No Number – University Campus
36.571-000 – Viçosa – MG – Brazil
Telephone: (31) 3899-2800 Fax: (31) 3899-1241 Email: dre@ufv.br http://www.ufv.br/res

Specialization Program Academic Transcript – "Lato Sensu" Graduate Program

Name: HANNA CAROLINA CAMPOS FERREIRA **Enrollment No. 54990**

Father's Name: Yulo Antônio Ferreira de Sá
Mother's Name: Mariane Campos Ferreira
Date of Birth: 09/25/1984 **Place of Birth:** Januária **State:** MG **Nationality:** Brazilian
Identity Document No.: MG-12.992.107 **Issuing Date:** 05/01/2000 **Issuing Authority:** SSP/MG
Voter ID: 145125740221 **Electoral District:** 148 **Polling Station:** 053
Issuing Date: 04/18/2000 **Location:** Januária **State:** MG

Program Information

Program: Veterinary Clinical Medicine and Surgery
Duration: March 2009 to August 2010

Code	Course Name	C.H	Grade	Instructor
VET 531	ANESTHETIC TECHNIQUES	45	90	Luiz Gonzaga Pompermayer – DS
VET 537	RADIODIAGNOSTICS	45	100	Maria Cristina Ferrarini Nunes Soares Hage – DS
VET 570	CLINICAL MEDICINE AND SURGERY OF LARGE ANIMALS I	120	88	José Dantas Ribeiro Filho – DS
VET 572	CLINICAL MEDICINE AND SURGERY OF LARGE ANIMALS II	150	81	Ernani Paulino do Lago – DS
VET 597	SEMINAR	15	80	Lissandro Gonçalves Conceição – DS
VET 599	CAPSTONE PROJECT	30	100	Lissandro Gonçalves Conceição – DS
	Total:	**375**		

This Academic Transcript shall not be valid when presented together with a Master's or Doctoral diploma obtained in a program in which the above credits have been fully or partially recognized.

Notes:
CAPSTONE PROJECT: Aspects related to the behavior of dairy cows, with emphasis on the free-stall housing system.
ADVISOR: Prof. Ernani Paulino do Lago
GRADE: 100

The student participated in activities at the Veterinary Hospital, totaling 1,300 hours.

In compliance with Resolution No. 1, of June 8, 2007, of the National Council of Education/Chamber of Higher Education (CNE/CES).

VIÇOSA – MG, August 2, 2011.

-----// signature //-----
José Antônio Lima
Director of the Special Courses Department

-----// signature //-----
Giovana Figueiredo Rossi
Director of Academic Records

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: April 8, 2026.**

República Federativa do Brasil
Ministério da Educação

Universidade Federal de Viçosa

Diretoria de Registro Escolar

CERTIFICADO DE ESPECIALIZAÇÃO

(Pós-Graduação "lato sensu")

A Reitora da Universidade Federal de Viçosa, no uso de suas atribuições legais, certifica que HANNA CAROLINA CAMPOS FERREIRA, portadora da Carteira de Identidade número MG-12.992.107-SSP/MG, concluiu, em agosto de 2010, o curso de especialização em CLÍNICA E CIRURGIA VETERINÁRIAS, ministrado com carga horária de 375 horas.

Viçosa(MG), 02 de agosto de 2011.

Nilda de Fátima Ferreira Soares
Reitora

Maria das Graças Soares Floresta
Secretária de Órgãos Colegiados

UNIVERSIDADE FEDERAL DE VIÇOSA

Registrado à folha **187**, sob o número **4100,** do livro número **01**.

Viçosa, **02/08/2011.**

José Fábio de Araújo - Matr. 2414-7
Chefe de Serviço de Registro de Diplomas e Certificados

Giovana Figueiredo Rossi
Diretora de Registro Escolar

Universidade Federal de Viçosa

Registro Escolar - Campus Viçosa
Av. P.H. Rolfs, s/n - Campus Universitário
36570-000 - Viçosa - MG - Brasil
Telefone: (31) 3899-2800 Fax: (31) 3899-1241 Email: dre@ufv.br www.ufv.br/res

Histórico Escolar do Curso de Especialização - Pós-Graduação "Lato Sensu"

Nome: Hanna Carolina Campos Ferreira **Matrícula: 54990**

Nome Pai: Yulo Antônio Ferreira de Sá

Nome Mãe: Mariane Campos Ferreira

Data Nascimento: 25/09/1984 **Naturalidade:** Januária **UF:** MG **Nacionalidade:** Brasileira

Identidade: MG-12.992.107 **Data Expedição:** 01/05/2000 **Orgão de Expedição:** SSP/MG

Título Eleitor: 145125740221 **Zona:** 148 **Seção:** 053

Expedição: 18/04/2000 **Local:** Januária **UF:** MG

Informações do Curso

Curso: Clínica e Cirurgia Veterinárias

Período de Realização: Março de 2009 a Agosto de 2010

Código	Nome da Disciplina	C.H.	C/Nota	Professor responsável
VET 531	TÉCNICAS ANESTÉSICAS	45	90	Luiz Gonzaga Pompermayer - DS
VET 537	RADIODIAGNÓSTICO	45	100	Maria Cristina Ferrarini Nunes Soares Hage - DS
VET 570	CLÍNICA E CIRURGIA DE GRANDES ANIMAIS I	120	88	José Dantas Ribeiro Filho - DS
VET 572	CLÍNICA E CIRURGIA DE GRANDES ANIMAIS II	150	81	Ernani Paulino do Lago - DS
VET 597	SEMINÁRIO	15	80	Lissandro Gonçalves Conceição - DS
VET 599	MONOGRAFIA	30	100	Lissandro Gonçalves Conceição - DS
	Total:	**375**		

Este Histórico Escolar não terá validade quando apresentado junto com o Diploma de Mestre ou Doutor, obtido em curso no qual tenham sido aproveitados, no todo ou em parte, os créditos acima.

Observações:
MONOGRAFIA: Aspectos relacionados ao comportamento de vacas leiteiras, com ênfase no sistema de estabulação livre (Free-Stall).
ORIENTADOR: Prof. Ernani Paulino do Lago
NOTA: 100

O aluno participou de atividades no Hospital Veterinário, totalizando uma carga horária de 1.300 horas.

Atendida a resolução nº 1, de 8 de junho de 2007 do CNE/CES.

VIÇOSA - MG, 02 de agosto de 2011.

José Antônio Iria
Chefe da Seção de Cursos Especiais

Giovana Figueiredo Rossi
Diretora do Registro Escolar

SINCE 1999

World Academic Research Center, Inc.

Foreign Credentials Evaluation and Translation Services

Memberships:

***AEA**: American Evaluation Association*
***CIES**: Comparative and International Education Society*
***NAFSA**: Association of International Educators*
***TAICEP**: The Association for International Credential Evaluation Professionals*

Academic Credential Evaluation Report

Document by Document

Date	: May 4, 2026	**Candidate's Name:**	Hanna Carolina Campos Ferreira
Country:	Brazil	**Purpose:**	Immigration

Documentation(s) Researched:

- Transcripts and the degree of Doctor of Veterinary Medicine (*grau de Médico Veterinârio)* granted by the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF)*
- Transcripts and the Specialization Postgraduate Lato sensu Certificate *(Certificado de Especialização Pós-Graduação Lato sensu)* for the completion of the specialization course in Veterinary Clinics and Surgery *(curso de especialização em Clinica e Cirurgia Veterinárias)* granted by the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF)*
- Transcripts and the degree of Master of Science *(titulo de Magister Scientiae)* for the completion of the Program for the Degree of Master in Veterinary Medicine *(Programa de Mestrado em Medicina Veterinária)* granted by the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF)*
- Transcripts and the degree of Doctor of Science *(titulo de Doctor Scientiae)* for the completion of the Program for the Degree of Doctor in Veterinary Medicine *(Programa de Doutorado em Medicina Veterinária)* granted by the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF)*

1825 NW Corporate Blvd., Suite 110
Boca Raton, FL 33431
Tel: (561) 807-6330 ~ Fax: (561) 807-6331
E-mail: evaluations@foreigndegrees.com
Web: http:// www.foreigndegrees.com

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***CIES**: Comparative and International Education Society*
***NAFSA**: Association of International Educators*
***TAICEP**: The Association for International Credential Evaluation Professionals*

Academic Credential Evaluation Report

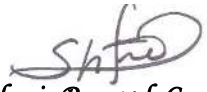
Document by Document

Date	: May 4, 2026	**Candidate's Name:**	Hanna Carolina Campos Ferreira
Country:	Brazil	**Purpose:**	Immigration

U.S. Educational Equivalency:

Based on the documentation(s) submitted for evaluation, World Academic Research Center, Inc. concludes that Ms. Campos Ferreira's education in Brazil is considered *functionally equivalent to the U.S. degrees of Doctor of Veterinary Medicine, Graduate Certificate in Veterinary Science, Master of Science in Veterinary Medicine and Doctor of Philosophy in Veterinary Medicine* granted by a regionally accredited institution of higher education in the United States of America.

***WARC* Evaluator:**
Mackenzy Schwarz, *Senior Evaluator and Executive Director*



World Academic Research Center, Inc.
Credentials Evaluation Resume and Translation Service

1825 NW Corporate Blvd., Suite 110
Boca Raton, FL 33431
Tel: (561) 807-6330 ~ Fax: (561) 807-6331
E-mail: evaluations@foreigndegrees.com
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***CIES**: Comparative and International Education Society*

***NAFSA**: Association of International Educators*

***TAICEP**: The Association for International Credential Evaluation Professionals*

Academic Credential Evaluation Report

Document by Document

Date	: May 4, 2026	**Candidate's Name:**	Hanna Carolina Campos Ferreira
Country:	Brazil	**Purpose:**	Immigration

Ms. Campos Ferreira pursued undergraduate study from 2006/1 to 2008/1 at the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF),* a recognized (accredited) institution of higher education in Brazil, after having transferred from the Federal Rural University of Rio de Janeiro *(Universidade Federal Rural do Rio de Janeiro),* a recognized (accredited) institution of higher education in Brazil where she studied from 2003/2 to 2006/1 . The Federal University of Viçosa (UFV) is one of the oldest higher education institutions in Brazil. It was inaugurated as the Higher School of Agriculture and Veterinary Medicine (ESAV) on August 28, 1926. ESAV was transformed into the Rural University of the State of Minas Gerais (UREMG) in 1948 and federalized as UFV in 1969. In addition to the campus located in the city of Viçosa, the University has, since 2006, the UFV – Florestal and UFV – Rio Paranaíba campuses, located in Florestal (MG) and Rio Paranaíba (MG), respectively. Initially, the institution stood out in Agricultural Sciences, with courses in Agriculture and Veterinary Medicine. Today, in addition to continuing to be a reference in the area, it also has excellence in teaching, research and extension in Biological, Exact and Human Sciences. The Federal University of Viçosa (UFV) offers secondary and technical education, undergraduate courses, and graduate programs across its three campuses, where more than 20,000 students are enrolled. In total, the University has graduated over 60,000 professionals and supervised the defense of more than 12,000 master's dissertations and 4,000 doctoral theses. The admission into the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF)* requires the completion of secondary education in Brazil or similar, the equivalent of the U.S. high school diploma.

Ms. Campos Ferreira completed the undergraduate course in Veterinary Medicine *(Curso de Medicina Veterinária)* in the 1st semester of 2008 and was granted the degree of Doctor of Veterinary Medicine (*grau de Médico Veterinârio)* by the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF)* on July 25, 2008. This is ***equivalent to the U.S. degree of Doctor of Veterinary Medicine*** granted by a regionally accredited institution of higher education in the United States of America.

1825 NW Corporate Blvd., Suite 110
Boca Raton, FL 33431
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Web: http:// www.foreigndegrees.com

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World Academic Research Center, Inc.

Foreign Credentials Evaluation and Translation Services

Memberships:

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***NAFSA**: Association of International Educators*

***TAICEP**: The Association for International Credential Evaluation Professionals*

Academic Credential Evaluation Report

Document by Document

Date	: May 4, 2026	**Candidate's Name:**	Hanna Carolina Campos Ferreira
Country:	Brazil	**Purpose:**	Immigration

Ms. Campos Ferreira pursued graduate study from March 2009 to August 2010 at the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF),* a recognized (accredited) institution of higher education in Brazil. In 1978, the Federal University of Viçosa began the construction of the current Department of Veterinary Medicine and its Veterinary Hospital. Recognition of the undergraduate course by the Ministry of Education (MEC) came in 1981, through decree number 713, dated December 23rd, the same year the first class of Veterinary Doctors graduated. From then on, many achievements followed, such as the creation of the Specialization Course in Veterinary Clinic and Surgery (Lato Sensu) in 1994. The Veterinary Hospital has its own administrative structure, federal and outsourced employees, and infrastructure suitable for the development of undergraduate and postgraduate teaching activities. Several sectors are used in a shared manner by the Veterinary Clinic and Surgery areas. These environments have various equipment, which are the responsibility of the DVT Head to own and maintain. The Veterinary Clinical Laboratory is located in the Veterinary Hospital of the Department of Veterinary Medicine, UFV campus. The laboratory is responsible for performing hematological, serum and urinary biochemical analyses, biological fluids (pleural, peritoneal, pericardial and cerebrospinal fluid), hemostasis, blood gas analysis, among other laboratory tests for patients treated at the UFV Veterinary Hospital and those referred externally. Among other activities, the laboratory collaborates in the teaching of Veterinary Clinical Pathology in the undergraduate course, in the Veterinary Medicine Residency Program, and in research developed by students and professors of the Postgraduate Program (Master's and Doctorate) of the Department.

Ms. Campos Ferreira completed the specialization course in Veterinary Clinics and Surgery *(curso de especialização em Clinica e Cirurgia Veterinárias)* in 2010 and was granted the Specialization Postgraduate Lato sensu Certificate *(Certificado de Especialização Pós-Graduação Lato sensu)* by the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF)* in August 2010. This is ***equivalent to the U.S. Graduate Certificate in Veterinary Science*** granted by a regionally accredited institution of higher education in the United States of America.

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Academic Credential Evaluation Report

Document by Document

Date	: May 4, 2026	**Candidate's Name:**	Hanna Carolina Campos Ferreira
Country:	Brazil	**Purpose:**	Immigration

Ms. Campos Ferreira pursued further graduate study from March 2010/1 to 2012/1 at the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF),* a recognized (accredited) institution of higher education in Brazil. The Postgraduate Program in Veterinary Medicine began its academic activities in March 1996 with the approval of the master's course. The Program has a group of advisors comprised of professors and graduates from Doctoral programs at renowned Brazilian and foreign institutions, fully committed to teaching activities at the undergraduate, postgraduate, extension, and research levels, all on a full-time basis. The program's main objective is the development of research and teaching in the various areas of veterinary medicine, including morphology, physiology, and pathology of domestic and wild animals, preventive veterinary medicine and public health, inspection of products of animal origin, reproduction, nutrition and animal production, and veterinary clinical and surgical practices. These activities enable the training of professionals to work in scientific research, technological development, and higher education, supplying science-generating and technology-producing institutions with highly qualified professionals. The Postgraduate Program in Veterinary Medicine at UFV encompasses diverse areas of expertise, organized into interdisciplinary research lines, which provide students with the opportunity to develop relevant and innovative research with a strong impact on animal health and society. The program stands out for its high level of scientific output, state-of-the-art laboratory infrastructure and the qualifications of its faculty. Furthermore, the program offers ongoing support to students in their academic and professional journey, promoting complementary training activities such as workshops, seminars, lectures, and supervised internships.

Ms. Campos Ferreira completed the postgraduate Program for the Degree of Master in Veterinary Medicine *(Programa de Mestrado em Medicina Veterinária)* on February 10, 2012 and was granted the degree of Master of Science *(titulo de Magister Scientiae)* by the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF)* on April 16, 2012. This is ***equivalent to the U.S. degree if Master of Science in Veterinary Medicine*** granted by a regionally accredited institution of higher education in the United States of America.

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Academic Credential Evaluation Report

Document by Document

Date	: May 4, 2026	**Candidate's Name:**	Hanna Carolina Campos Ferreira
Country:	Brazil	**Purpose:**	Immigration

Ms. Campos Ferreira pursued further graduate study from March 2012/1 to 2016/1 at the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF),* a recognized (accredited) institution of higher education in Brazil. In March 2005, the Federal University of Viçosa - UFV began to offer its Doctoral course in Veterinary Medicine, representing a scientific advancement in academic activities already underway and initiating the training of qualified doctors. This is a high-level doctoral program, evaluated by CAPES with an international standard of excellence. Lasting 48 months (4 years), the course requires a prior master's degree and focuses on training researchers, with modern infrastructure, qualified faculty, and institutional partnerships. It features experienced faculty such as Andréa Pacheco Batista Borges and Alex Pauvolid-Corrêa, among other specialists in veterinary medicine. The program encompasses various sub-areas of veterinary medicine with a focus on scientific research such as biotechnology, diagnosis and control of animal diseases, epidemiology and quality control of products of animal origin, veterinary clinical medicine, diagnostic imaging and surgical and anesthetic methods applied to animals, morpho-physiology of domestic and wild animals, reproduction and animal production. The Doctoral program encourages scientific production through partnerships with other renowned institutions and a qualified technical and teaching staff, with professors working in Brazil and abroad. The coordinating committee (PPGMV) publishes calls for applications, generally with activities beginning in the first semester of each year.

Ms. Campos Ferreira completed the postgraduate Program for the Degree of Doctor in Veterinary Medicine *(Programa de Doutorado em Medicina Veterinária)* on July 5, 2016 and was granted the degree of Doctor of Science *(titulo de Doctor Scientiae)* by the Federal University of Viçosa *(Universidade Federal de Viçosa-UVF)* on September 20, 2016. This is ***equivalent to the U.S. degree of Doctor of Philosophy in Veterinary Medicine*** granted by a regionally accredited institution of higher education in the United States of America.

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AACRAO EDGE (Electronic Database for Global Education) online database, Version 1.0 by American Association of Collegiate Registrars and Admissions Officers (AACRAO).

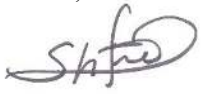
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A Guide to Educational Systems Around the World. Washington DC: NAFSA: National Association of International Educators.

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***WARC* Evaluator:**
Mackenzy Schwarz, *Senior Evaluation and Executive Director*



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Date	: May 4, 2026	**Candidate's Name:**	Hanna Carolina Campos Ferreira
Country:	Brazil	**Purpose:**	Immigration

CORPORATE PROFILE

Founded in 1999 and incorporated in 2004, ***World Academic Research Center, Inc.*** *(WARC)* is a private organization located in Boca Raton, Florida which evaluates and translates foreign educational credentials and issues a detailed report of equivalency in terms of the educational system in the United States. All of our consultants have significant years of experience and extensive knowledge in the international education field. Our multilingual staff has significant exposure to both the U.S. and world educational systems via professional Immigration, teaching posts and academic study. *WARC* consultants have authored articles, contributed to publications, presented seminars in the international education field and attended professional conferences. *WARC* follows the highest standards of educational evaluation guidelines as recommended by U.S. admissions offices and various publications by the American Association of Collegiate Registrars and Admission Officers (AACRAO), the Association of International Educators (NAFSA) and ministries of education throughout the world.

Executive Director

Mackenzy Schwarz – Bachelor of Arts in International Studies and French
University of Miami, Coral Gables, Florida (1993-1995)

Ms. Mackenzy Schwarz has been working in the international education and professional work experience evaluation field **since 1995**. She studied International Studies at the University of Miami in Coral Gables, Florida. Ms. Schwarz has ***thirty-one years of experience*** in the field of foreign credential evaluation. She was Manager of the Evaluations Division for a foreign credential evaluation service firm in South Florida for over five years and served as Associate Foreign Credential Evaluator and Francophone Expert at a credential evaluation company in Miami, Florida for over five years. Ms. Mackenzy Schwarz is an active member of the Association for International Credential Evaluation Professionals *(TAICEP)* and the Association of International Educators *(NAFSA)*.

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Country:	Brazil	**Purpose:**	Immigration

Foreign credential evaluation reports (including transfer credit assessment) for foreign educated individuals from around the world prepared by Ms. Schwarz have been accepted by various colleges, universities, private entities, licensing boards, United States Citizenship and Immigration Services since 192.00. Ms. Schwarz has evaluated foreign educational documents for the purposes of immigration, applications for various professional licensing boards in the United States (CPA examination, architecture, dentistry, engineering, law, medical laboratory technology, Production Engineering, and teacher certification), applications for admission to U.S. high schools, colleges and universities and applications for Immigration. Ms. Schwarz presented a professional seminar for U.S. university admissions officers on the educational systems of France and Haiti and conducted in-service training sessions on the educational systems of France, Morocco, South Korea and Haiti. Ms. Schwarz trained new evaluators and student assistants in the foreign educational evaluation process and contributed as the Francophone Expert on the publication entitled: *JS&A Guide to Admission of International Freshman Applicants*. Ms. Schwarz was also a contributor on the education of France and Haiti for the handbook entitled: *A Guide to Educational Systems Around the World*, published by NAFSA in 1999. In addition, she has attended numerous professional local and national conferences in the international education field.

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Exhibit C.I - First Prong - Substantial Merit and National Importance

Integra
Health Systems LLC

BUSINESS PLAN 2026



Name: Hanna Carolina Campos Ferreira
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Position: General Manager & Technical Director

Prepared by:
Nextus Plan

Contents

1.0 EXECUTIVE SUMMARY 3
1.1 Nature and Scope of the Business 5
1.2 Mrs. Hanna Carolina Campos Ferreira's Expertise 6
2.0 THE COMPANY 7
2.1 Company's Targets 10
2.2 Need for the Company's Services 11
2.3 Company's Expansion 13
2.4 Company's Economic Benefits 14
2.4.1 Financial Highlights Chart 15
2.4.2 Federal, State and Payroll Taxes Chart 15
2.5 Summary of Investment 16
2.5.1 Startup Requirements Table 17
3.0 COMPANY'S SERVICES 17
4.0 INDUSTRY OVERVIEW 20
4.1 Industry Analysis 21
4.2 Major Market Segmentation 25
4.3 Business Location 26
5.0 STRATEGY AND IMPLEMENTATION 28
5.1 Swot Analysis 29
5.2 Website and Digital Marketing 30
5.2.1 Website Strategy 31
5.2.2 Digital Marketing Strategy 32
5.3 Sales Forecast 32
5.3.1 Annual Sales Forecast Table 34
5.4.2 Annual Sales Chart 35
6.0 MANAGEMENT STRUCTURE 35
6.1 Staffing Requirements 35
6.2 Annual Personnel Plan Table 37
6.3 Five-Year Personnel Plan Table 38
6.4 Organizational Chart – Year 5 38
6.5 Duties and Responsibilities 39
7.0 FINANCIAL SUMMARY 40
7.1 Break-even Analysis 41
7.1.1 Break-even Analysis Chart 42
7.2 Profit and Loss Assumptions 42
7.2.1 Annual Profit and Loss Table 43
7.2.2 Annual Expenses x Sales Chart 44
7.2.3 Annual Profit Chart 44
7.3 Cash Flow Assumptions 45
7.3.1 Annual Cash Flow Table 46
7.3.2 Annual Net Cash Flow and Cash Balance Chart 47
7.4 Balance Sheet Assumptions 47
7.4.1 Annual Balance Sheet Table 48
8.0 MRS. HANNA CAROLINA CAMPOS FERREIRA'S NATIONAL-LEVEL IMPACT 49
9.0 INDIRECT JOBS CREATION - ECONOMIC POLICY INSTITUTE 51
9.1 Distressed Communities 52
APPENDIX 1

1.0 Executive Summary

Integra Health Systems LLC will be established by Mrs. Hanna Carolina Campos Ferreira as a specialized food safety, animal health, and regulatory support company focused on sanitary compliance, inspection systems, zoonotic disease prevention, and technical support involving products of animal origin within the United States market. The company will be headquartered in Miami, Florida, a strategic location due to its role as a major logistics and international trade hub connecting the United States with Latin American export markets and global food supply chains.

The company's primary objective is to support manufacturers of products of animal origin, food processing facilities, laboratories, and agricultural institutions through technical services focused on improving food safety systems, sanitary compliance, export readiness, operational reliability, and disease prevention programs.

Integra Health Systems LLC will provide a portfolio of specialized technical services, including:

- Food Safety and USDA Compliance Support
- HACCP and Preventive Control Program Development
- Animal Health and Zoonotic Disease Prevention Programs
- Technical Audits and Export Readiness Assessments

These services are designed to support food manufacturers and agricultural operations in reducing sanitary risks, improving regulatory compliance, strengthening export readiness, supporting disease prevention measures, and maintaining operational standards required for domestic commercialization and international trade involving products of animal origin.

The company will be launched with an initial investment of approximately $50,000, allocated toward office infrastructure, software systems, technical equipment, licensing, marketing activities, insurance coverage, working capital, and operational resources necessary to support the company's initial activities and future expansion.

The business will operate under a scalable service-based structure capable of supporting projects throughout Florida and additional U.S. markets as operations expand.

Founder Background

Mrs. Hanna Carolina Campos Ferreira is a Veterinarian, Federal Agricultural Auditor with the Brazilian Ministry of Agriculture and Livestock (MAPA), and researcher with extensive experience in food safety, sanitary inspection, animal health, zoonotic disease control, and products of animal origin regulation.

Throughout her professional career, she has conducted audits and inspections involving federally inspected slaughterhouses, dairy facilities, honey and egg processing establishments, and animal feed production operations. Her experience also includes participation in international audits involving export requirements associated with the United States, European Union, China, Mexico, Chile, and other international markets.

Mrs. Ferreira also possesses extensive academic and scientific experience involving veterinary medicine, infectious diseases, virology, zoonotic disease prevention, and food safety-related research. She holds a Doctorate and Master's Degree in Veterinary Medicine from the Federal University of Viçosa and completed research activities at the University of Minnesota in the United States.

Her professional background combines regulatory inspection experience, scientific research, sanitary auditing, and technical training activities, providing the technical foundation necessary to lead the company's proposed activities in the United States.

National Impact and Economic Relevance

The United States food production and agricultural sectors play a critical role in supporting public health, national food security, international trade, and supply chain stability.[1] Manufacturers and processors of products of animal origin must comply with strict sanitary, operational, and export-related requirements to maintain access to domestic and international markets.[2]

Integra Health Systems LLC is structured to support these operational and regulatory demands by providing technical services focused on food safety systems, sanitary compliance, export readiness, animal health protection, and zoonotic disease prevention.

The company's activities will contribute to:

- improving food safety and sanitary compliance practices,
- supporting regulatory readiness for manufacturers of products of animal origin,
- reducing operational and biological risks within food production environments,
- supporting zoonotic disease prevention and animal health initiatives,
- and strengthening the safety and integrity of food supply chain operations.

These contributions are particularly relevant in Florida and other regions with strong agricultural production, food import/export activity, and international trade involving products of animal origin.

The company will also contribute to workforce development through the hiring of technical, administrative, and operational personnel in the United States as operations expand.

Alignment with U.S. National Priorities

The activities of Integra Health Systems LLC align with important U.S. priorities involving food safety, agricultural security, public health protection, zoonotic disease prevention, export compliance, and supply chain resilience.

The company's services directly support national objectives including:

- strengthening food safety and sanitary oversight systems,
- supporting regulatory compliance for products of animal origin,
- improving prevention and monitoring of zoonotic and infectious diseases,

[1] https://www.usgs.gov/programs/environmental-health-program/science/helping-secure-our-nations-food-supply-intersection-0

[2] https://www.traceone.com/resources/plm-compliance-blog/us-fda-usda-food-regulation-updates

- supporting the operational integrity of food supply chains,
- and enhancing sanitary preparedness within agricultural and food production sectors.

The company's activities are also aligned with broader federal initiatives involving food safety modernization, agricultural protection, disease prevention, and public health preparedness, including:

- United States Department of Agriculture (USDA) – Food Safety and Inspection Service (FSIS).[3]
- U.S. Food and Drug Administration (FDA) – Food Safety Modernization Act (FSMA).[4]
- Centers for Disease Control and Prevention (CDC) – One Health and Zoonotic Disease Programs.[5]
- U.S. Department of Health and Human Services (HHS) – Public Health Preparedness Initiatives.[6]
- Animal and Plant Health Inspection Service (APHIS) – Animal Health Protection Programs.[7]
- National Institute of Food and Agriculture (NIFA) – Food Safety and Agricultural Research Programs.[8]

By operating from Miami, Florida, and focusing on food safety systems, sanitary compliance, animal health, and zoonotic disease prevention, Integra Health Systems LLC is positioned to support public health protection, regulatory preparedness, and operational integrity within critical sectors of the United States agricultural and food production economy.

1.1 Nature and Scope of the Business

Integra Health Systems LLC's activities will primarily focus on food safety systems, sanitary compliance, animal health programs, zoonotic disease prevention, and regulatory support involving products of animal origin within the United States market. The company will support food manufacturers, processing facilities, agricultural operations, laboratories, and institutions operating throughout Florida and other U.S. regions involved in food production, import/export activities, and agricultural supply chain operations.

Integra Health Systems LLC will provide specialized technical services involving sanitary inspection support, HACCP implementation, export readiness assessments, disease prevention protocols, and operational compliance activities associated with food safety and animal health regulations.

1. **Food Safety and USDA Compliance Support:** Integra Health Systems LLC will provide technical support services for manufacturers of products of animal origin seeking to improve sanitary compliance and align operations with USDA and international food safety requirements. Services will include evaluation of operational procedures, sanitary documentation reviews, inspection preparation, regulatory gap assessments, compliance

[3] https://www.fsis.usda.gov
[4] https://www.fda.gov/food/guidance-regulation-food-and-dietary-supplements/food-safety-modernization-act-fsma
[5] https://www.cdc.gov/one-health/index.html
[6] https://www.hhs.gov/programs/emergency-preparedness/index.html
[7] https://www.aphis.usda.gov/
[8] https://www.nifa.usda.gov/

monitoring support, and technical assistance involving food safety systems and export eligibility requirements.

2. **HACCP and Preventive Control Program Development:** The company will develop and implement HACCP plans, preventive control systems, sanitary standard operating procedures (SSOPs), and self-control programs for slaughterhouses, dairy facilities, meat processors, egg processing establishments, honey producers, and other food production operations. Services will also include risk analysis, traceability procedures, corrective action protocols, verification activities, and technical training for operational personnel.
3. **Animal Health and Zoonotic Disease Prevention Programs:** Integra Health Systems LLC will provide technical services related to animal health monitoring, zoonotic disease prevention, biosafety procedures, and sanitary risk reduction within agricultural and food production environments. Services will include disease prevention protocols, sanitary monitoring activities, epidemiological support, technical reporting, and operational procedures designed to reduce biological risks and strengthen public health protection.
4. **Technical Audits and Export Readiness Assessments:** The company will provide technical operational reviews and export readiness assessments for establishments involved in the production and commercialization of products of animal origin. Services will include facility evaluations, review of sanitary procedures, operational compliance verification, preparation for regulatory inspections, corrective action support, and technical assessments associated with domestic and international commercialization requirements.

Through these activities, Integra Health Systems LLC will support food safety, sanitary compliance, disease prevention, operational reliability, and regulatory preparedness within critical sectors of the United States agricultural and food production economy.

1.2 Mrs. Hanna Carolina Campos Ferreira's Expertise

Mrs. Hanna Carolina Campos Ferreira is a Veterinarian, Federal Agricultural Auditor with the Brazilian Ministry of Agriculture and Livestock (MAPA), researcher, and technical specialist with extensive experience in food safety, sanitary inspection, animal health, zoonotic disease control, and regulatory compliance involving products of animal origin.

She currently serves as a Federal Agricultural Auditor and Regional Technical Unit Chief within MAPA, where she is responsible for auditing and inspecting establishments registered under the Federal Inspection Service, including slaughterhouses, dairy facilities, honey and egg processing operations, and animal feed manufacturers. Her responsibilities also include sanitary certification procedures, operational compliance verification, and supervision of food safety and inspection protocols involving products of animal origin.

Throughout her professional career, Mrs. Ferreira has participated in and coordinated international audits involving export requirements associated with the United States, European Union, China, Mexico, Chile, Malaysia, Philippines, and other international markets. Her experience includes technical evaluations related to sanitary compliance, export certification standards, operational readiness, and regulatory requirements applicable to food production facilities operating within international supply chains.

Mrs. Ferreira also has direct experience involving zoonotic disease prevention and public health protection. She previously worked as a Veterinarian for the Municipality of Diamantina, Brazil, where she participated in zoonotic disease control activities involving visceral and cutaneous leishmaniasis prevention programs in urban and rural areas.

In addition to her regulatory and operational experience, Mrs. Ferreira possesses a strong scientific and academic background involving veterinary medicine, virology, infectious diseases, microbiology, and animal health research. She holds a Doctorate and Master's Degree in Veterinary Medicine from the Federal University of Viçosa and completed a CAPES-sponsored doctoral research program at the University of Minnesota in the United States.

Her academic and scientific activities include research involving bovine herpesvirus, viral pathogenesis, immunological response, zoonotic disease prevention, and infectious disease monitoring in livestock populations. She has authored and co-authored scientific publications in national and international journals involving veterinary virology, food safety-related diseases, and animal health monitoring.

Mrs. Ferreira has also participated in technical training and continuing education activities involving HACCP verification procedures, export certification requirements, sanitary inspection systems, animal feed inspection, and food safety regulatory protocols. Her training includes programs specifically related to export requirements for meat products intended for the United States market and official verification procedures involving HACCP systems in federally inspected establishments.

Additionally, she has experience in technical instruction, academic coordination, and workforce training activities. She previously served as a university professor and coordinator for a Veterinary Medicine program, teaching courses involving microbiology, immunology, and veterinary sciences while also participating in curriculum development and laboratory planning activities.

Mrs. Ferreira's background combines regulatory inspection expertise, scientific research, operational auditing, zoonotic disease prevention, international compliance exposure, and technical leadership, providing the specialized foundation necessary to lead the activities proposed by Integra Health Systems LLC within the United States food safety and agricultural sectors.

2.0 The Company

To support market entry and long-term operational growth, Integra Health Systems LLC will adopt a phased workforce expansion strategy, beginning with a lean technical and operational structure in Year 1 and progressively expanding its internal team in alignment with service demand, project volume, and operational growth through Year 5.

This operational approach reflects the company's initial focus on establishing client relationships, supporting food safety and sanitary compliance projects, and developing its presence within the U.S. agricultural and food production sectors, followed by the gradual expansion of its technical, regulatory, and operational capacity to support increasing service demand and project complexity.

Organizational Structure – Year 1

During its first year of operations, Integra Health Systems LLC will maintain a controlled organizational structure focused on establishing operations, securing initial clients, and executing food safety, sanitary compliance, animal health, and export readiness projects. The company will prioritize technical service delivery, operational coordination, and business development activities while maintaining operational efficiency and cost control.

The Year 1 organizational structure will include:

- **1 General Manager & Technical Director – Mrs. Hanna Carolina Campos Ferreira:** Responsible for overall business management, operational oversight, technical supervision, client engagement, and coordination of all food safety, sanitary compliance, and animal health-related activities. Mrs. Ferreira will oversee HACCP implementation projects, sanitary assessments, export readiness evaluations, zoonotic disease prevention initiatives, regulatory support services, and technical operational activities while supervising the company's project execution and operational structure.
- **1 Food Safety Specialist:** Responsible for supporting HACCP implementation, preventive control program development, sanitary procedure reviews, food safety documentation, operational compliance assessments, and technical support activities involving products of animal origin.
- **1 Veterinary Public Health Specialist:** Responsible for supporting animal health monitoring activities, zoonotic disease prevention programs, sanitary risk assessments, biosafety procedures, and technical evaluations involving food production environments and agricultural operations.
- **1 Marketing and Business Development Specialist:** Responsible for supporting market expansion, client acquisition, industry outreach, relationship development, and promotional activities involving food manufacturers, agricultural operations, laboratories, and institutions operating within the food production sector.

In this initial phase, additional technical, laboratory, accounting, and regulatory activities will be directly supported by Mrs. Ferreira and, when necessary, through limited subcontracted support. This structure allows the company to maintain operational flexibility while establishing a stable client base and expanding its presence within the U.S. food safety and agricultural sectors.

Organizational Structure – Year 5

By Year 5, Integra Health Systems LLC plans to expand its operations to support a larger volume of food safety projects, sanitary compliance activities, export readiness assessments, zoonotic disease prevention initiatives, and technical operational engagements throughout the United States food production and agricultural sectors. The company will increase its workforce to support higher operational demand, strengthen internal execution capacity, and maintain consistency across multiple technical projects and client engagements.

The planned Year 5 organizational structure will include:

- **1 General Manager & Technical Director:** Continues to oversee business strategy, operational management, technical supervision, client relationships, and overall company performance.
- **2 Food Safety Specialists:** Responsible for supporting HACCP implementation, preventive control systems, sanitary assessments, compliance reviews, food safety documentation, operational audits, and technical support activities involving food production establishments.
- **2 Veterinary Public Health Specialists:** Responsible for supporting zoonotic disease prevention initiatives, animal health programs, biosafety procedures, sanitary monitoring activities, epidemiological support, and public health-related technical operations.
- **2 Regulatory Compliance Coordinators:** Responsible for coordinating export documentation, regulatory reviews, inspection preparation activities, operational compliance monitoring, corrective action implementation, and support involving USDA and international regulatory requirements.
- **2 Technical Auditors:** Responsible for conducting operational assessments, sanitary inspections, technical audits, compliance verification activities, and export readiness evaluations involving food production and processing facilities.
- **2 Laboratory and Quality Control Analysts:** Responsible for supporting quality assurance activities, laboratory coordination, sample management procedures, technical reporting, and verification activities associated with food safety and sanitary compliance operations.
- **2 Administrative and Operations Coordinators:** Responsible for scheduling management, operational logistics, documentation control, internal coordination, client communication, invoicing support, and administrative operational activities.
- **1 Marketing and Business Development Specialist:** Responsible for supporting business expansion, industry outreach, strategic partnerships, client relationship development, and market positioning activities.
- **1 Accounting and Financial Analyst:** Responsible for bookkeeping support, payroll coordination, financial controls, budgeting activities, operational reporting, and accounting management support.

Organizational Scalability and Operational Alignment

This phased organizational structure allows Integra Health Systems LLC to expand in a controlled and operationally sustainable manner while aligning hiring decisions with project demand, operational complexity, and service delivery requirements. The company's initial structure prioritizes technical execution, operational coordination, and client acquisition, while the expanded structure supports increased project volume, larger operational engagements, and broader food safety and animal health activities throughout the United States.

By maintaining clear operational separation between management oversight, technical food safety services, regulatory support functions, public health activities, laboratory coordination, and administrative operations, Integra Health Systems LLC will be positioned to deliver specialized technical services, maintain consistency across multiple client engagements, and support long-term operational growth within the U.S. food safety and agricultural sectors.

2.1 Company's Targets

Integra Health Systems LLC will focus on delivering specialized food safety, sanitary compliance, animal health, and regulatory support services to manufacturers of products of animal origin, food processing facilities, agricultural operations, laboratories, and institutions throughout the United States. The company's primary objective is to address operational and regulatory challenges associated with food safety systems, sanitary inspection requirements, zoonotic disease prevention, export readiness, and compliance involving products intended for domestic commercialization and international trade.

The company will provide implementation-focused technical services designed to improve food safety procedures, strengthen sanitary compliance, reduce biological and operational risks, support export eligibility requirements, and improve regulatory preparedness within food production and agricultural environments.

Primary Market Focus

1. Manufacturers of Products of Animal Origin

The company's primary target market includes slaughterhouses, meat processors, dairy facilities, honey processing operations, egg processing establishments, and animal feed manufacturers requiring technical support involving food safety systems, HACCP implementation, sanitary compliance, and export readiness activities.

Integra Health Systems LLC will support these organizations through sanitary assessments, HACCP development, operational compliance reviews, technical audits, inspection preparation activities, and support involving USDA-related food safety requirements and international export standards.

Secondary Market Focus

2. Agricultural Operations and Livestock Producers

The company will support agricultural operations and livestock producers requiring technical support involving zoonotic disease prevention, biosafety procedures, sanitary monitoring activities, and animal health-related operational protocols designed to reduce biological risks and strengthen sanitary management practices.

3. Laboratories, Universities, and Research Institutions

Integra Health Systems LLC will support laboratories, academic institutions, and research organizations involved in animal health, food safety, microbiology, infectious disease monitoring, and zoonotic disease prevention activities. Services may include technical collaboration, sanitary support activities, operational assessments, and research-related technical assistance involving food production and public health initiatives.

4. Food Import and Export Operations

The company will support organizations involved in international food trade requiring operational compliance support, export readiness evaluations, sanitary verification procedures,

and technical assessments associated with domestic and international regulatory requirements involving products of animal origin.

Strategic Positioning

Integra Health Systems LLC is positioned as a specialized food safety, animal health, and sanitary compliance company focused on practical operational support, regulatory preparedness, and execution-oriented technical services. The company will focus on delivering highly specialized expertise supported by Mrs. Hanna Carolina Campos Ferreira's experience involving federal sanitary inspection, international audit participation, zoonotic disease prevention, and regulatory oversight activities involving products of animal origin.

Rather than competing with general business advisory firms or low-cost service providers, Integra Health Systems LLC will focus on specialized technical activities requiring direct experience involving food safety systems, sanitary inspection procedures, export compliance, zoonotic disease prevention, and operational food safety management.

2.2 Need for the Company's Services

The United States food production and agricultural sectors continue to face increasing operational and regulatory demands involving food safety compliance, zoonotic disease prevention, export certification requirements, sanitary monitoring, and operational risk management.[9] Manufacturers of products of animal origin and agricultural organizations require specialized technical support to maintain compliance with regulatory standards, reduce biological risks, improve operational reliability, and strengthen food safety procedures.

Integra Health Systems LLC is structured to address these operational and regulatory challenges by providing specialized technical services focused on food safety systems, sanitary compliance, export readiness, zoonotic disease prevention, and regulatory support activities.

1. Growing Demand for Food Safety and Sanitary Compliance

Manufacturers of products of animal origin operate within highly regulated environments requiring strict compliance with sanitary and food safety standards.[10] Failures involving food safety systems, sanitary procedures, or operational compliance may result in operational interruptions, product recalls, financial losses, and public health risks.

Integra Health Systems LLC will support these organizations through HACCP implementation, sanitary assessments, operational evaluations, compliance reviews, and technical support activities designed to strengthen food safety procedures and reduce operational risks.

2. Increasing Need for Export Readiness and International Compliance

Food manufacturers involved in international commercialization must comply with strict operational and sanitary requirements associated with USDA regulations and international export standards.[11] Many organizations require specialized technical support to prepare

[9] https://www.gao.gov/assets/gao-25-107571.pdf
[10] https://www.ecfr.gov/current/title-21/chapter-I/subchapter-E/part-507
[11] https://www.fsis.usda.gov/inspection/import-export

facilities, procedures, and operational systems for export-related inspections and certification activities.

The company will provide technical operational assessments, export readiness evaluations, inspection preparation support, sanitary verification procedures, and regulatory coordination activities associated with domestic and international commercialization requirements.

3. Public Health and Zoonotic Disease Prevention Requirements

The agricultural and food production sectors continue to face growing concerns involving zoonotic diseases, biological contamination risks, and foodborne illness prevention.[12] Agricultural organizations and food manufacturers require technical support involving biosafety procedures, sanitary monitoring activities, and disease prevention measures designed to strengthen public health protection and operational safety.

Integra Health Systems LLC will support these organizations through zoonotic disease prevention programs, sanitary risk assessments, biosafety procedures, epidemiological support activities, and technical operational evaluations.

4. Shortage of Specialized Food Safety and Animal Health Expertise

The food production and agricultural sectors require highly specialized professionals with direct experience involving sanitary inspection systems, food safety regulations, export compliance procedures, zoonotic disease prevention, and operational food safety management.[13] There is a continuing demand for professionals capable of supporting complex food safety and regulatory activities involving products of animal origin.

Integra Health Systems LLC addresses this need by providing specialized technical expertise supported by Mrs. Ferreira's extensive background involving federal inspection systems, international audits, animal health monitoring, and sanitary compliance activities.

Meeting the Demand for Food Safety and Animal Health Services

To address these operational and regulatory needs, Integra Health Systems LLC will provide:

- Food safety assessments and operational compliance reviews
- HACCP implementation and preventive control program development
- Technical audits and export readiness evaluations
- Zoonotic disease prevention and biosafety support services
- Regulatory compliance support involving products of animal origin
- Technical operational support for food manufacturers and agricultural organizations

By addressing these operational challenges, the company will support stronger food safety procedures, improved sanitary compliance, reduced biological risks, and enhanced public health protection throughout the United States food production and agricultural sectors.

[12] https://www.ncsl.org/environment-and-natural-resources/agriculture-biosecurity-risks-state-perspectives
[13] https://agclassroom.org/discover-agriculture-careers/food-systems-pathway/

2.3 Company's Expansion

Integra Health Systems LLC is structured for scalable and sustainable growth as a specialized food safety, animal health, and sanitary compliance company headquartered in Miami, Florida. The company's expansion strategy is designed to align with increasing demand for food safety systems, export readiness assessments, zoonotic disease prevention initiatives, and regulatory support services throughout the United States agricultural and food production sectors.

1. Service Expansion

Initially, the company will focus on food safety assessments, HACCP implementation, sanitary compliance reviews, export readiness activities, and zoonotic disease prevention support services. As operations expand, Integra Health Systems LLC plans to increase its capabilities involving operational audits, laboratory coordination support, biosafety programs, epidemiological monitoring activities, and larger regulatory compliance projects involving products of animal origin.

2. Geographic Expansion

The company will initially focus on Florida and surrounding regional markets, leveraging Miami's strategic location as an international trade and logistics hub connecting the United States with Latin American and global food supply chains. As operations mature, Integra Health Systems LLC plans to expand its services throughout additional U.S. agricultural and food production markets.

3. Team Growth

Workforce expansion will follow a phased approach aligned with operational demand, project volume, and revenue growth. The company plans to progressively hire Food Safety Specialists, Veterinary Public Health Specialists, Regulatory Compliance Coordinators, Technical Auditors, Laboratory and Quality Control Analysts, Administrative and Operations Coordinators, and additional operational personnel to support increasing service demand.

4. Strategic Industry Relationships

Integra Health Systems LLC plans to establish long-term working relationships with food manufacturers, agricultural organizations, laboratories, universities, regulatory support organizations, and food import/export operations to strengthen service capabilities and support operational growth throughout the food production sector.

5. Continuous Operational Improvement

The company will continue investing in technical training, food safety methodologies, sanitary assessment procedures, regulatory compliance capabilities, operational technologies, and industry certifications to maintain operational efficiency and support evolving food safety and public health requirements.

6. Long-Term Growth Outlook

Through this structured expansion strategy, Integra Health Systems LLC aims to establish itself as a recognized food safety, animal health, and sanitary compliance services provider within the United States agricultural and food production sectors. The company will contribute to

improving food safety systems, operational compliance, zoonotic disease prevention, export readiness, and public health protection throughout critical sectors of the U.S. economy.

2.4 Company's Economic Benefits

Integra Health Systems LLC is projected to generate significant economic contributions to the United States through sustained revenue growth, creation of specialized technical jobs, and ongoing tax contributions during its first five years of operation.

During its first year of operations, Integra Health Systems LLC is projected to generate approximately $442,000 in total revenue. As the company expands its operational capacity, technical workforce, and client base throughout Florida and additional U.S. agricultural and food production markets, revenue is projected to increase steadily, reaching approximately $2,004,370 by Year Five.

The company's projected growth reflects increasing demand for specialized technical services involving food safety systems, sanitary compliance, export readiness, zoonotic disease prevention, and operational support activities associated with products of animal origin. The company's operational structure is designed to support multiple technical projects simultaneously while maintaining operational efficiency and high-value service delivery.

Gross margin is projected to increase from approximately $388,960 in Year One to $1,763,845 by Year Five, reflecting the company's specialized service structure and the increasing demand for technical expertise involving food safety, animal health, and regulatory compliance within the U.S. agricultural and food production sectors.

Net profit is expected to increase from approximately $19,608 in Year One to $160,918 by Year Five. This projected profitability will support continued operational expansion, workforce growth, investment in technical infrastructure and operational resources, and the expansion of the company's food safety and regulatory support capabilities throughout the United States.

Tax Contributions and Fiscal Impact

In addition to revenue generation and workforce expansion, Integra Health Systems LLC is projected to generate substantial tax contributions at the federal and state levels through corporate taxes and payroll-related tax obligations.

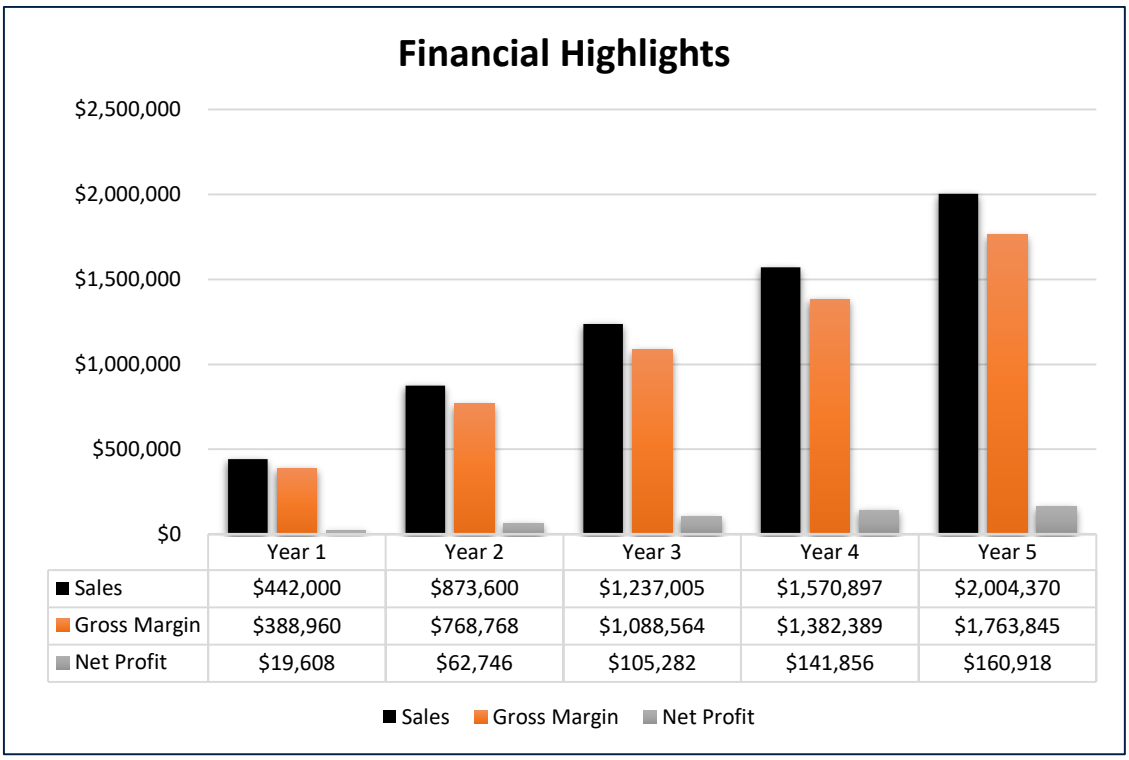
Total tax contributions are projected to increase from approximately $33,152 in Year One to approximately $186,593 by Year Five. Over the five-year projection period, the company is expected to generate cumulative tax contributions of approximately $560,588.

The projected five-year tax contributions include:

- Federal and State Taxes: $181,384
- Payroll Taxes: $379,204

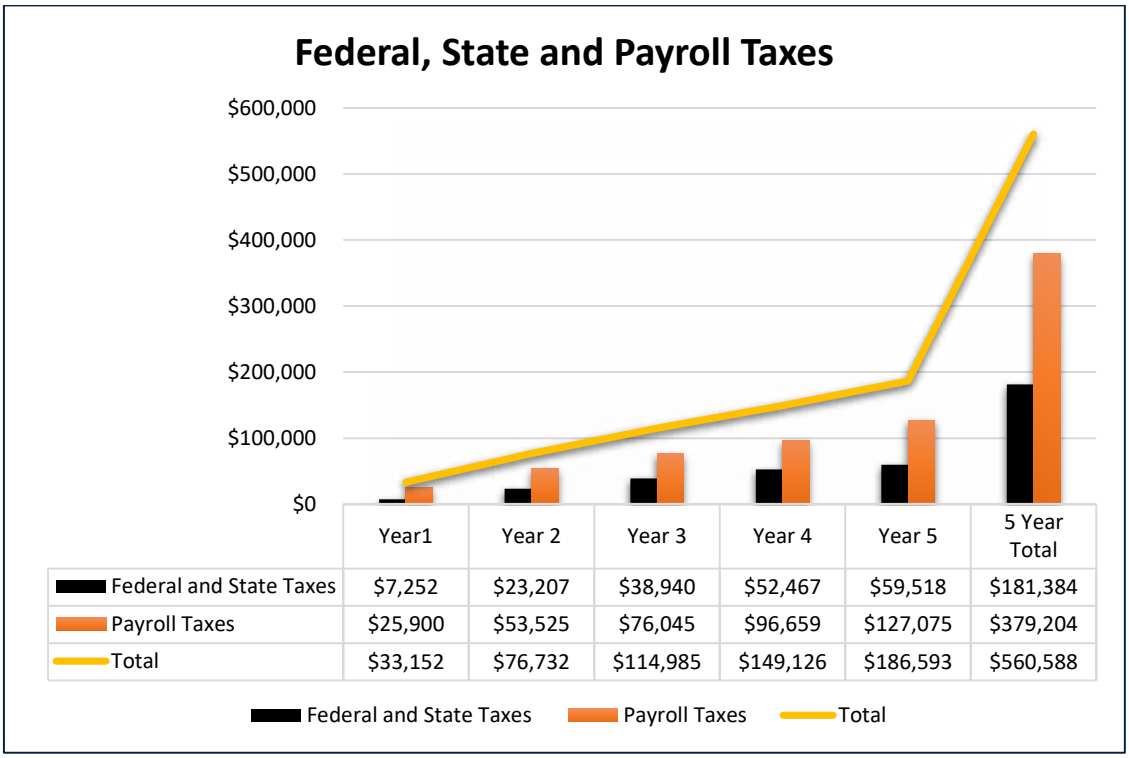
These projected tax contributions demonstrate the company's potential economic impact through business growth, payroll expansion, and ongoing operational activities within the United States food safety, agricultural, and public health-related sectors.

2.4.1 Financial Highlights Chart



	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	$442,000	$873,600	$1,237,005	$1,570,897	$2,004,370
Gross Margin	$388,960	$768,768	$1,088,564	$1,382,389	$1,763,845
Net Profit	$19,608	$62,746	$105,282	$141,856	$160,918

2.4.2 Federal, State and Payroll Taxes Chart



	Year1	Year 2	Year 3	Year 4	Year 5	5 Year Total
Federal and State Taxes	$7,252	$23,207	$38,940	$52,467	$59,518	$181,384
Payroll Taxes	$25,900	$53,525	$76,045	$96,659	$127,075	$379,204
Total	$33,152	$76,732	$114,985	$149,126	$186,593	$560,588

2.5 Summary of Investment

Integra Health Systems LLC has established a structured startup investment plan to support the launch of its food safety, animal health, and sanitary compliance operations in the United States. The company will commit a total initial investment of approximately $50,000 to support operational setup, office infrastructure, technical resources, regulatory preparation, marketing activities, and working capital necessary to begin operations.

The investment structure has been designed to support food safety assessments, HACCP implementation activities, sanitary compliance projects, export readiness evaluations, and technical support services involving products of animal origin throughout Florida and additional U.S. markets.

Startup expenses are projected at approximately $43,500 and are allocated toward business registration, licensing activities, office setup, technical and regulatory materials, laboratory support equipment, marketing activities, administrative infrastructure, and operational preparation requirements necessary to support the company's launch.

The company will also maintain approximately $6,500 in working capital reserves to support operational expenses, payroll obligations, marketing activities, and initial project execution requirements during the early stages of operation.

Total Capital Requirements

- Total Startup Expenses: $43,500
- Working Capital: $6,500
- Total Initial Investment: $50,000

This investment structure reflects Mrs. Hanna Carolina Campos Ferreira's financial commitment to establishing and operating Integra Health Systems LLC in the United States. The proposed investment allocation is designed to support operational readiness, technical service delivery, regulatory support activities, and long-term business scalability within the U.S. food safety and agricultural sectors.

2.5.1 Startup Requirements Table

Startup	
Requirements	
Startup Expenses	
Business Registration and Legal Fees	$3,500
Professional Licensing, Permits, and Insurance	$8,000
Office Lease Deposit and Initial Rent	$6,000
Technical and Regulatory Reference Materials	$5,000
Website Development and Branding	$3,000
Marketing and Industry Outreach	$5,000
Laboratory and Technical Support Equipment	$6,000
Office Furniture and Equipment	$4,500
Accounting and Administrative Setup	$2,500
Total Startup Expenses	$43,500
Working Capital	$6,500
Total Requirements	**$50,000**

3.0 Company's Services

Integra Health Systems LLC will provide a specialized portfolio of food safety, animal health, sanitary compliance, and regulatory support services focused on products of animal origin, zoonotic disease prevention, HACCP implementation, export readiness, and operational compliance activities for food manufacturers, agricultural operations, laboratories, and institutions throughout the United States.

The company's service offerings are designed to address critical operational and regulatory challenges involving food safety systems, sanitary inspection requirements, biological risk management, export certification standards, and public health protection associated with the production and commercialization of products of animal origin.

Integra Health Systems LLC will focus on implementation-driven technical services that improve food safety procedures, strengthen sanitary compliance, reduce biological risks, support operational readiness, and maintain compliance with domestic and international food safety requirements.

The company's services are organized into four core areas:

1. Food Safety and USDA Compliance Support

Integra Health Systems LLC will provide specialized technical support services focused on food safety systems, sanitary compliance, and operational readiness for manufacturers of products of animal origin.

Many food manufacturers face operational and regulatory challenges associated with sanitary inspection requirements, export certification procedures, operational compliance deficiencies, and evolving food safety standards. The company will support food production establishments

through operational assessments, sanitary evaluations, regulatory support activities, and implementation of food safety procedures designed to strengthen compliance and reduce operational risks.

Key activities include:

- Operational food safety assessments and sanitary evaluations
- USDA and export-related compliance support activities
- Review of sanitary procedures and operational documentation
- Inspection preparation and corrective action support
- Verification of operational compliance requirements
- Technical support involving products of animal origin
- Food safety procedure implementation activities
- Technical reporting and compliance documentation support

These services enable food manufacturers and agricultural operations to improve sanitary compliance, strengthen food safety procedures, reduce operational risks, and maintain readiness for domestic and international regulatory requirements.

2. HACCP and Preventive Control Program Development

Integra Health Systems LLC will provide technical services focused on HACCP implementation, preventive control systems, sanitary standard operating procedures (SSOPs), and operational food safety programs for establishments involved in the production and processing of products of animal origin.

Many food production facilities require structured food safety systems to maintain regulatory compliance, reduce contamination risks, and improve operational reliability. The company will support these organizations through development, implementation, and verification of operational food safety procedures aligned with regulatory standards and industry requirements.

Key activities include:

- HACCP plan development and implementation
- Preventive control and self-control program development
- Sanitary Standard Operating Procedure (SSOP) preparation
- Operational risk analysis and hazard identification
- Traceability and corrective action procedure development
- Food safety documentation and monitoring procedures
- Employee training related to food safety systems
- Verification and validation support activities

These services enable food production establishments to improve operational food safety management, strengthen preventive controls, reduce contamination risks, and maintain compliance with regulatory food safety requirements.

3. Animal Health and Zoonotic Disease Prevention Programs

Integra Health Systems LLC will provide technical services focused on animal health monitoring, zoonotic disease prevention, biosafety procedures, and sanitary risk reduction within agricultural and food production environments.

Agricultural operations and food production facilities continue to face increasing concerns involving biological contamination, infectious disease monitoring, and zoonotic disease prevention. The company will support these organizations through technical operational evaluations, sanitary monitoring activities, biosafety procedures, and disease prevention support services designed to strengthen public health protection and operational safety.

Key activities include:

- Zoonotic disease prevention and biosafety support
- Animal health monitoring activities
- Sanitary risk assessments and operational evaluations
- Epidemiological support and technical reporting
- Biological risk reduction procedures
- Operational sanitation and hygiene assessments
- Technical support involving disease prevention protocols
- Public health-related operational guidance

These services enable agricultural organizations and food production facilities to reduce biological risks, strengthen sanitary procedures, improve disease prevention efforts, and support public health protection initiatives.

4. Technical Audits and Export Readiness Assessments

Integra Health Systems LLC will provide technical operational reviews and export readiness assessments for establishments involved in the production, processing, and commercialization of products of animal origin.

Many food manufacturers seeking access to domestic and international markets require technical support involving operational compliance verification, sanitary inspections, export readiness preparation, and regulatory alignment activities. The company will support these organizations through technical audits, compliance evaluations, operational reviews, and corrective action support services.

Key activities include:

- Technical audits and sanitary inspections
- Export readiness evaluations and operational reviews
- Verification of regulatory compliance procedures
- Inspection preparation and corrective action planning
- Operational gap assessments and technical reporting
- Documentation review and compliance monitoring
- Facility assessments involving food production operations
- Technical support associated with export certification activities

These services enable food manufacturers and agricultural operations to strengthen operational compliance, improve export readiness, maintain regulatory alignment, and support long-term participation within domestic and international food supply chains.

4.0 Industry Overview

The United States food production and agricultural sectors play a critical role in supporting public health, national food security, international trade, and supply chain stability. The production, processing, transportation, and commercialization of products of animal origin require strict sanitary oversight, operational compliance, and continuous monitoring to reduce biological risks and maintain food safety standards throughout the supply chain.

The food safety, animal health, and sanitary compliance industry has become increasingly important as food manufacturers, agricultural operations, and regulatory agencies face growing operational and public health challenges involving foodborne illnesses, zoonotic diseases, export compliance requirements, biological contamination risks, and evolving regulatory standards.[14]

A major factor driving demand within the industry is the increasing complexity of domestic and international food safety regulations. Manufacturers of products of animal origin must comply with operational requirements involving HACCP systems, preventive controls, sanitary procedures, traceability protocols, export certification standards, and inspection readiness activities associated with agencies such as the USDA, FDA, and international regulatory authorities.

In addition, the agricultural and food production sectors continue to experience increasing concerns involving zoonotic diseases and biological contamination risks.[15] Public health authorities and food manufacturers require stronger biosafety procedures, disease prevention measures, sanitary monitoring systems, and operational risk management practices to reduce the spread of infectious diseases and protect both animal and human health.

Another important trend shaping the industry is the continued expansion of international food trade and export activities. Companies involved in the commercialization of products of animal origin increasingly require technical support involving export readiness assessments, operational compliance verification, sanitary certification procedures, and implementation of regulatory standards required for access to international markets.[16]

The industry is also experiencing growing demand for technical professionals with specialized expertise involving sanitary inspection systems, food safety regulations, zoonotic disease prevention, animal health monitoring, and operational compliance activities. Many food manufacturers and agricultural organizations face difficulties maintaining internal technical resources capable of managing evolving regulatory requirements and operational food safety systems.

[14] https://www.fda.gov/food/guidance-regulation-food-and-dietary-supplements/food-safety-modernization-act-fsma
[15] https://www.ncsl.org/environment-and-natural-resources/agriculture-biosecurity-risks-state-perspectives
[16] https://www.aphis.usda.gov/animal-product-export

At the same time, the United States continues to prioritize food safety modernization, agricultural protection, and public health preparedness through federal initiatives involving foodborne illness prevention, sanitary inspection systems, supply chain security, and disease prevention programs. Regulatory agencies and industry stakeholders continue to increase investments in operational compliance, food safety technologies, traceability systems, and preventive control procedures designed to strengthen the integrity of the national food supply chain.

Within this operational environment, companies providing food safety support services, sanitary compliance activities, HACCP implementation, export readiness assessments, zoonotic disease prevention programs, and regulatory support services occupy an important position within the U.S. agricultural and food production economy.[17] These organizations support operational compliance, strengthen public health protection, reduce biological risks, and contribute to the continuity and reliability of food supply chain operations throughout the United States.

Integra Health Systems LLC operates within this specialized segment of the U.S. food safety and animal health industry, focusing on sanitary compliance, operational food safety systems, zoonotic disease prevention, export readiness, and regulatory support activities involving products of animal origin. By addressing operational and regulatory challenges involving food safety, animal health, and sanitary preparedness, the company contributes directly to broader national priorities involving public health protection, food security, agricultural safety, and supply chain resilience within the United States.

4.1 Industry Analysis

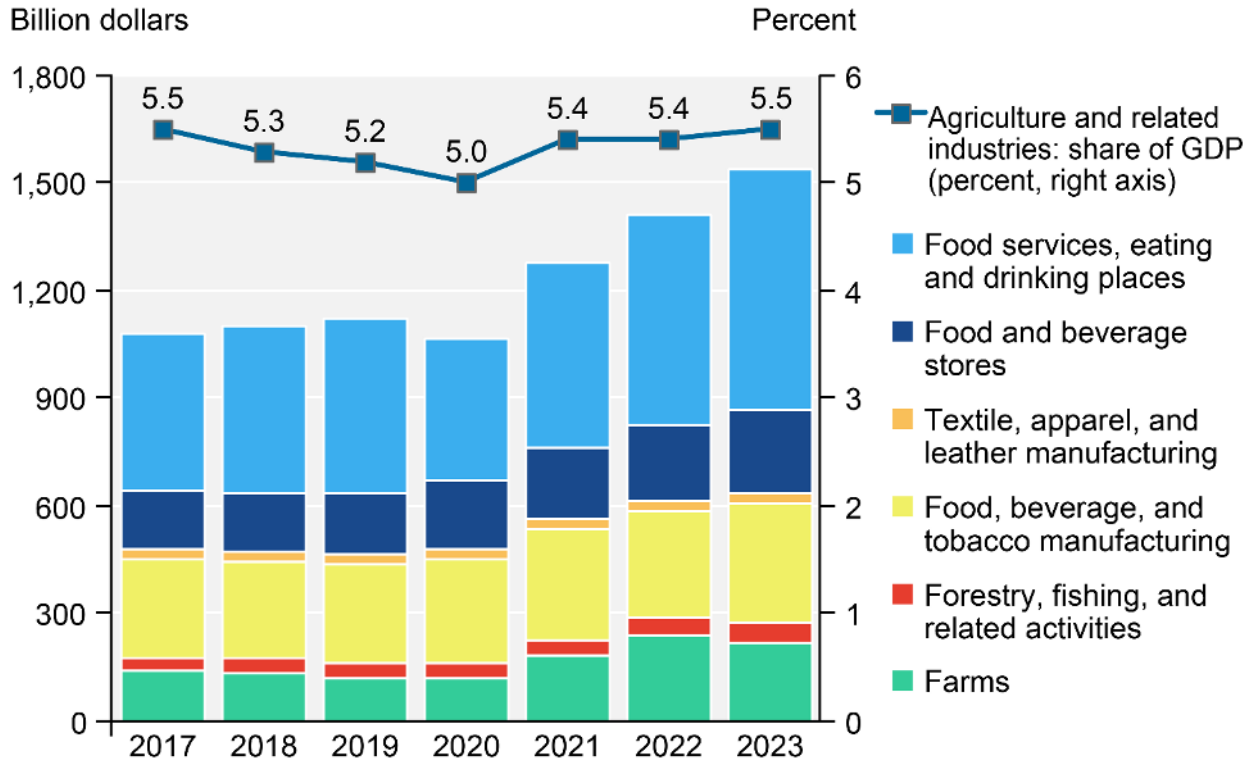
The United States food production, animal health, and food safety industry represents a critical component of the national economy, supporting public health, agricultural production, international trade, supply chain continuity, and domestic food security. The industry continues to experience increasing demand for specialized technical services associated with sanitary compliance, food safety systems, zoonotic disease prevention, export certification, and operational risk management involving products of animal origin.

According to the United States Department of Agriculture (USDA), the U.S. food and agriculture sector contributed approximately $1.5 trillion to the U.S. gross domestic product (GDP) in 2023, representing approximately 5.5% of the national economy.[18] The industry supports millions of jobs across food production, processing, transportation, distribution, and export-related activities.

[17] https://www.fsis.usda.gov/inspection/compliance-guidance/haccp

[18] https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy

Value added to U.S. GDP by agriculture and related industries, 2017–23

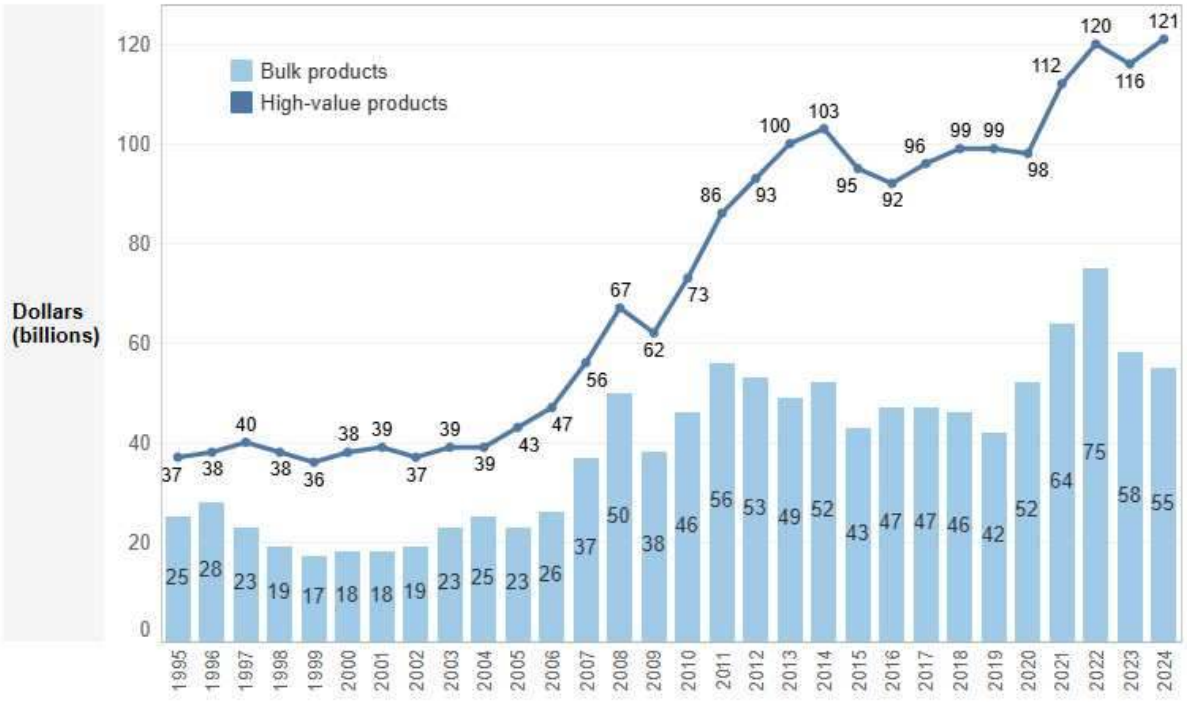


Note: GDP = Gross Domestic Product.
Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of Economic Analysis, Value Added by Industry, September 26, 2024 release.

The United States also maintains one of the world's largest food export markets. According to the USDA Economic Research Service, U.S. agricultural exports exceeded $175 billion in recent years, with meat, dairy, poultry, eggs, and other animal-origin products representing a significant portion of international trade activities.[19] This large-scale production and export environment increases the importance of sanitary inspection systems, food safety controls, operational compliance, and export readiness procedures.

[19] https://www.ers.usda.gov/topics/international-markets-us-trade/us-agricultural-trade/us-agricultural-trade-at-a-glance

Figure 1: U.S. exports of bulk and high-value commodities,1995–24



A major factor driving growth within the food safety and sanitary compliance sector is the increasing complexity of domestic and international food safety regulations. Manufacturers of products of animal origin must comply with strict operational requirements involving Hazard Analysis and Critical Control Point (HACCP) systems, preventive controls, traceability procedures, sanitation programs, export certification requirements, and inspection protocols established by agencies such as the USDA Food Safety and Inspection Service (FSIS) and the U.S. Food and Drug Administration (FDA).

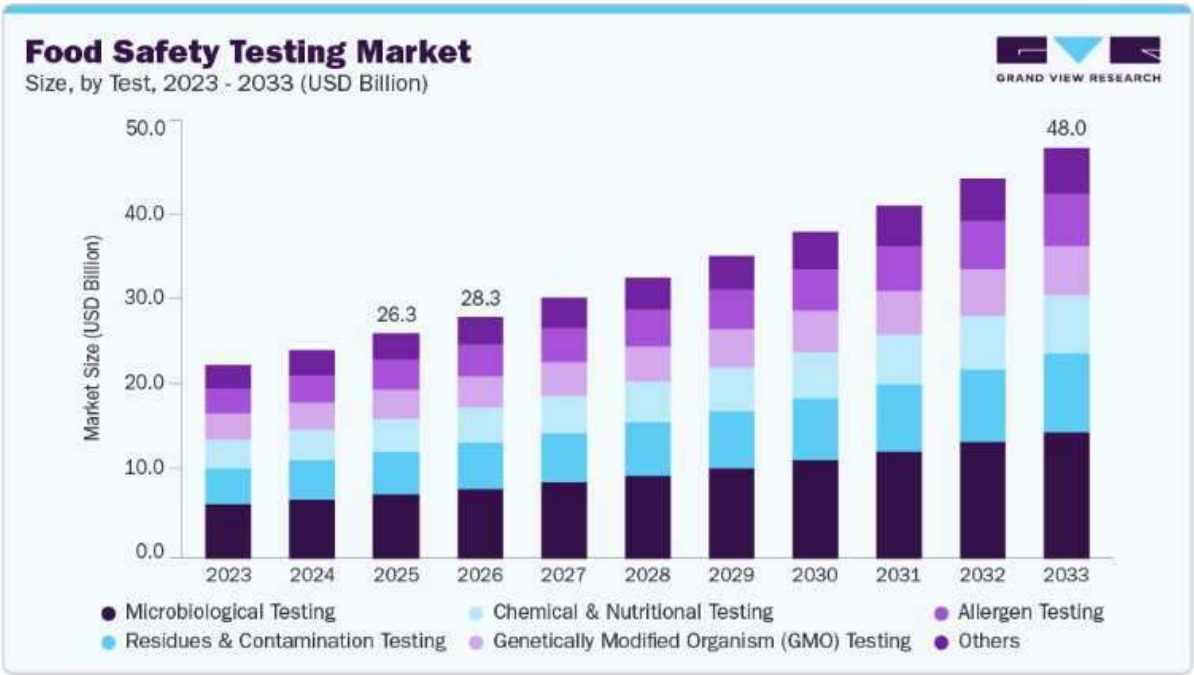
At the same time, foodborne illnesses and zoonotic diseases continue to represent major public health and economic concerns within the United States. According to the Centers for Disease Control and Prevention (CDC), approximately 48 million Americans experience foodborne illnesses annually, resulting in approximately 128,000 hospitalizations and 3,000 deaths each year.[20] These conditions create significant operational pressure on food manufacturers, agricultural operations, and regulatory agencies to strengthen sanitary procedures, improve food safety systems, and reduce biological contamination risks.

Another important trend shaping the industry is the increasing concern involving zoonotic diseases and biological threats associated with animal production systems and food supply chains. According to the CDC, approximately 75% of emerging infectious diseases affecting humans originate from animals.[21] This ongoing public health concern has increased demand for

[20] https://www.cdc.gov/food-safety/data-research/facts-stats/index.html
[21] https://www.cdc.gov/one-health/about/about-zoonotic-diseases.html

professionals and organizations capable of supporting animal health monitoring, biosafety procedures, epidemiological assessments, and zoonotic disease prevention programs.

The food safety testing and compliance industry also continues to experience strong growth due to increasing regulatory oversight and consumer demand for safer food products. According to Grand View Research, the global food safety testing market was valued at more than $24 billion and is projected to continue growing significantly due to stricter food safety regulations, increased international trade, and rising concerns involving contamination and foodborne pathogens.[22]



In addition, the growing expansion of international food trade continues to increase demand for export readiness assessments, sanitary audits, operational compliance verification, and regulatory support services involving products of animal origin. Food manufacturers seeking access to international markets must comply with increasingly complex sanitary and operational requirements involving inspection systems, traceability standards, export certifications, and disease prevention procedures.

Another major industry challenge is the shortage of specialized professionals with direct expertise involving sanitary inspection systems, food safety regulations, zoonotic disease prevention, export compliance, and operational food safety management. Food production facilities, agricultural organizations, and regulatory stakeholders increasingly require experienced professionals capable of supporting complex operational and regulatory activities associated with products of animal origin.

These industry conditions demonstrate sustained and growing demand for companies capable of providing food safety support services, HACCP implementation, sanitary compliance

[22] https://www.grandviewresearch.com/industry-analysis/food-safety-testing-industry

assessments, zoonotic disease prevention programs, export readiness evaluations, and regulatory support activities. As food manufacturers and agricultural organizations continue facing increasing regulatory pressure, biological risks, and operational complexity, specialized technical service providers occupy an increasingly important role within the U.S. agricultural and food production economy.

Integra Health Systems LLC operates within this specialized and growing segment of the food safety, animal health, and sanitary compliance industry, focusing on operational food safety systems, zoonotic disease prevention, export readiness, and regulatory support involving products of animal origin. By delivering implementation-focused technical services, the company directly supports broader national priorities involving public health protection, food security, agricultural safety, disease prevention, and supply chain resilience throughout the United States.

4.2 Major Market Segmentation

Integra Health Systems LLC will operate within the specialized food safety, animal health, and sanitary compliance sectors of the United States agricultural and food production industry. The company's services are designed to support organizations involved in the production, processing, commercialization, inspection, and export of products of animal origin, as well as institutions involved in public health, laboratory analysis, and zoonotic disease prevention activities.

The company's target market is segmented into the following primary categories:

1. Meat Processing and Slaughterhouse Facilities

This segment includes slaughterhouses, meat processors, poultry processing facilities, and establishments involved in the production and commercialization of beef, pork, poultry, and other animal-origin products regulated under USDA and food safety requirements.

These organizations require technical support involving HACCP implementation, sanitary inspection preparation, export readiness, operational compliance verification, preventive control systems, and food safety monitoring activities. Due to strict regulatory oversight and growing export requirements, this segment represents one of the company's primary market opportunities.

2. Dairy, Egg, Honey, and Animal-Origin Food Manufacturers

This segment includes dairy processing facilities, egg processing operations, honey production establishments, and manufacturers involved in the processing and commercialization of products of animal origin.

These businesses require operational food safety systems, sanitary compliance procedures, traceability protocols, biosafety measures, and technical support involving domestic and international food safety standards. The increasing complexity of food safety regulations continues to drive demand for specialized technical support services within this segment.

3. Agricultural Operations and Livestock Producers

This segment includes livestock producers, cattle operations, poultry operations, swine farms, feed operations, and agricultural organizations involved in animal production activities.

These organizations require support involving animal health monitoring, zoonotic disease prevention, biosafety procedures, epidemiological support, and sanitary risk management activities designed to reduce biological risks and strengthen operational safety within food production environments.

4. Food Import and Export Companies

This segment includes companies involved in the importation, exportation, distribution, and commercialization of products of animal origin within domestic and international markets.

Organizations operating within this segment frequently require technical support involving export readiness assessments, sanitary certification procedures, operational compliance verification, inspection preparation activities, and alignment with USDA, FDA, and international regulatory requirements.

5. Laboratories, Universities, and Research Institutions

This segment includes diagnostic laboratories, veterinary laboratories, universities, research centers, and public health institutions involved in food safety, microbiology, infectious diseases, animal health, and zoonotic disease monitoring activities.

These organizations may require technical collaboration, operational support, sanitary evaluations, research assistance, biosafety procedures, and consulting support involving food safety systems and disease prevention initiatives.

6. Government and Regulatory Support Activities

Integra Health Systems LLC may also support organizations and projects associated with regulatory preparedness, operational food safety improvement initiatives, sanitary assessments, and public health-related operational activities involving products of animal origin.

This segment includes opportunities associated with technical operational support, workforce training, compliance assessments, and implementation of food safety and sanitary monitoring procedures aligned with federal and state regulatory priorities.

Through these market segments, Integra Health Systems LLC will support critical operational, sanitary, and public health activities within the United States agricultural and food production sectors while contributing to stronger food safety systems, improved regulatory compliance, and enhanced public health protection.

4.3 Business Location

Integra Health Systems LLC will be headquartered in Miami, Florida, a strategic location for companies operating within the food safety, agricultural, import/export, and international trade sectors. Miami serves as one of the primary logistics and commercial gateways connecting the United States with Latin America and global markets, making the region highly relevant for

operations involving products of animal origin, food distribution, agricultural imports and exports, and regulatory compliance activities.

Florida maintains one of the largest agricultural economies in the United States. According to the Florida Department of Agriculture and Consumer Services, agriculture contributes more than $180 billion annually to the state's economy and supports a large network of food production facilities, logistics operations, livestock activities, import/export companies, and food distribution systems.[23] The state's strong agricultural and trade infrastructure creates ongoing demand for food safety systems, sanitary compliance services, export readiness support, and animal health-related technical activities.

Miami-Dade County also plays an important role in international food trade and logistics operations. The region contains major transportation corridors, distribution centers, international cargo operations, and port infrastructure supporting the movement of food products between the United States, Latin America, Europe, and other global markets.[24] Companies involved in the importation and exportation of products of animal origin must comply with strict operational, sanitary, and regulatory requirements, increasing the need for specialized technical support involving food safety and export compliance.

Another important factor supporting the company's location strategy is Florida's large concentration of food manufacturers, processing facilities, agricultural operations, and import/export businesses. The state contains a significant number of establishments involved in meat processing, dairy production, poultry operations, animal feed manufacturing, seafood processing, and food distribution activities, all of which require sanitary compliance systems, operational food safety procedures, and regulatory oversight support.

Miami also offers access to a multilingual and internationally connected business environment, which is particularly relevant for organizations involved in cross-border food trade and regulatory coordination activities involving Latin American markets. Mrs. Hanna Carolina Campos Ferreira's international audit experience and exposure to export-related food safety requirements position the company to support organizations operating within these international commercial environments.

In addition, Florida continues to prioritize public health preparedness, agricultural protection, food safety monitoring, and disease prevention initiatives due to the state's large population, international transportation activity, and extensive agricultural operations.[25] These conditions contribute to sustained demand for technical services involving food safety systems, zoonotic disease prevention, sanitary inspections, and operational compliance support.

By establishing operations in Miami, Florida, Integra Health Systems LLC will be strategically positioned to support food manufacturers, agricultural organizations, laboratories, and import/export operations requiring specialized technical expertise involving food safety, sanitary compliance, animal health, and regulatory readiness within the United States market.

[23] https://floridaagricultureauthority.com/florida-agriculture-industry-overview
[24] https://www.miamidade.gov/global/government/international-trade/home.page
[25] https://www.floridahealth.gov/community-environmental-public-health/emergency-preparedness-response/

5.0 Strategy and Implementation

Integra Health Systems LLC's strategy is focused on delivering specialized food safety, animal health, sanitary compliance, and regulatory support services through disciplined operational execution, technical quality, and gradual operational growth. The company's implementation approach is designed to support food safety systems, operational compliance, export readiness, zoonotic disease prevention, and public health protection for food manufacturers, agricultural operations, laboratories, and organizations throughout the United States.

The company will operate through a project-based and technical field-service operational model, allowing Integra Health Systems LLC to support food production facilities, agricultural organizations, import/export operations, laboratories, and institutions throughout Florida and additional U.S. markets.

Service Delivery Strategy

Integra Health Systems LLC will provide implementation-focused technical services involving food safety assessments, HACCP implementation, sanitary compliance reviews, export readiness evaluations, zoonotic disease prevention programs, and regulatory support activities associated with products of animal origin.

Projects will be executed through structured operational phases including facility evaluations, sanitary assessments, operational reviews, food safety documentation analysis, compliance verification activities, corrective action planning, technical reporting, and operational monitoring procedures. This approach supports operational consistency, technical accuracy, and efficient project execution.

Client Acquisition and Market Entry

The company's client acquisition strategy will focus on slaughterhouses, meat processors, dairy facilities, food manufacturers, agricultural operations, laboratories, food import/export companies, and institutions requiring specialized food safety and sanitary compliance support services.

Integra Health Systems LLC will leverage Mrs. Hanna Carolina Campos Ferreira's regulatory experience, international audit participation, technical background, and knowledge involving sanitary inspection systems and export compliance activities to establish initial client relationships and expand long-term operational partnerships within the food production and agricultural sectors.

Business development activities will include direct industry networking, participation in agricultural and food safety events, strategic relationships with food manufacturers and laboratories, digital marketing initiatives, educational presentations, and direct outreach to organizations involved in products of animal origin and international food trade activities.

Operational Implementation

Operational execution will be supervised by Mrs. Hanna Carolina Campos Ferreira, who will oversee technical standards, project coordination, operational activities, regulatory support

procedures, and workforce supervision. Operational services will follow structured sanitary procedures, food safety protocols, compliance verification standards, biosafety measures, and regulatory requirements to ensure high-quality technical service delivery.

As operational demand increases, the company will gradually expand its workforce by hiring additional Food Safety Specialists, Veterinary Public Health Specialists, Regulatory Compliance Coordinators, Technical Auditors, Laboratory and Quality Control Analysts, and Administrative and Operations Coordinators aligned with project growth and operational needs.

Technical Framework and Continuous Improvement

The company will utilize food safety methodologies, HACCP systems, sanitary assessment procedures, operational compliance frameworks, technical reporting systems, and regulatory monitoring processes to support food safety projects, sanitary compliance activities, export readiness assessments, and zoonotic disease prevention services.

Operational procedures will remain aligned with USDA requirements, FDA regulations, HACCP principles, preventive control standards, sanitary inspection protocols, and public health-related operational practices.

Integra Health Systems LLC will continuously monitor operational performance, project execution quality, sanitary compliance activities, technical assessment procedures, and client satisfaction to improve operational efficiency and maintain high technical standards throughout its long-term growth strategy.

5.1 Swot Analysis

Strengths

- Specialized technical expertise in food safety, animal health, sanitary inspection, zoonotic disease prevention, and products of animal origin.
- Founder's regulatory background as a Federal Agricultural Auditor with direct experience in inspection and auditing of slaughterhouses, dairy facilities, honey and egg processors, and animal feed establishments.
- Experience with international audits involving the United States, European Union, China, Mexico, Chile, and other export markets.
- Strong academic foundation with a Doctorate and Master's Degree in Veterinary Medicine and research experience in infectious diseases and animal health.
- Ability to support HACCP and sanitary compliance programs for companies seeking stronger food safety systems and export readiness.
- Positioning in Miami, Florida, a strategic location for food trade, logistics, and business connections with Latin American markets.
- Scalable service-based model that allows the company to expand without major inventory or manufacturing infrastructure.

- Alignment with U.S. priorities related to food safety, public health, agricultural security, zoonotic disease prevention, and supply chain resilience.

Weaknesses

- New company in the U.S. market, requiring time to build brand recognition, client relationships, and referral networks.
- Initial dependence on the founder's expertise, especially during the early phase of technical service delivery and client acquisition.

Opportunities

- Growing demand for food safety and sanitary compliance support among food manufacturers and processors.
- Increased regulatory pressure involving HACCP, preventive controls, traceability, sanitation, and export certification.
- Expansion of U.S. food import and export activities, creating demand for export readiness and compliance services.
- Public health concerns involving foodborne illnesses, which continue to drive investment in prevention and operational controls.
- Rising concern over zoonotic diseases, increasing the need for animal health monitoring and biosafety programs.
- Opportunities to serve companies producing products of animal origin, including meat, dairy, eggs, honey, and animal feed.
- Potential partnerships with laboratories, universities, agricultural organizations, and food industry groups.
- Long-term geographic expansion into other U.S. agricultural and food production markets beyond Florida.

Threats

- Competition from established food safety firms, regulatory service providers, and industry specialists already operating in the U.S.
- Changes in federal or state food safety regulations, which may require continuous technical updates and operational adaptation.
- Economic pressure on food manufacturers, which may delay investments in external technical support or compliance projects.

5.2 Website and Digital Marketing

Integra Health Systems LLC's website and digital marketing strategy will support brand positioning, market visibility, client acquisition, and long-term relationship development within the U.S. food safety, agricultural, and animal health sectors. The company's digital presence will focus on clearly presenting its technical expertise involving food safety systems, sanitary

compliance, zoonotic disease prevention, export readiness, and regulatory support activities associated with products of animal origin.

The company's website will function as a central platform to present its services, operational capabilities, technical expertise, and regulatory experience while supporting communication with food manufacturers, agricultural operations, laboratories, and organizations throughout the United States.

5.2.1 Website Strategy

1. Professional and Industry-Focused Design

The company's website will feature a professional and operationally focused design aligned with the food safety, agricultural, and public health sectors. The platform will present the company's technical services, operational capabilities, regulatory expertise, and contact information in a clear and accessible structure.

2. Service-Oriented Content Structure

The website will include dedicated sections for each core service area, including:

- Food Safety and USDA Compliance Support
- HACCP and Preventive Control Program Development
- Animal Health and Zoonotic Disease Prevention Programs
- Technical Audits and Export Readiness Assessments

Content will focus on operational challenges, sanitary compliance requirements, regulatory expectations, food safety risks, and the company's implementation-focused technical approach.

3. Founder and Technical Expertise Section

The website will include a dedicated section highlighting Mrs. Hanna Carolina Campos Ferreira's professional background, federal inspection experience, international audit participation, scientific research activities, and technical expertise involving food safety, animal health, zoonotic diseases, and sanitary inspection systems.

4. Industry and Technical Content

Integra Health Systems LLC will publish technical and educational content related to food safety systems, HACCP implementation, sanitary inspection procedures, zoonotic disease prevention, export readiness, biosafety measures, and operational compliance involving products of animal origin. This content will support search visibility and reinforce the company's technical positioning within the food safety and agricultural sectors.

5. Search Engine Optimization (SEO)

Website content will be optimized using industry-related keywords associated with food safety, HACCP systems, USDA compliance, sanitary inspection, zoonotic disease prevention, export readiness, animal health, and products of animal origin to improve visibility among organizations seeking specialized technical support services.

5.2.2 Digital Marketing Strategy

1. Industry Networking and Business Development

The company will prioritize direct networking within the food production and agricultural industries through relationships with food manufacturers, laboratories, agricultural organizations, import/export companies, universities, and industry associations throughout Florida and additional U.S. markets.

2. Professional Online Presence

Integra Health Systems LLC will maintain a professional presence on platforms such as LinkedIn to share industry updates, regulatory information, technical insights, operational food safety content, and public health-related information relevant to food manufacturers and agricultural organizations.

3. Targeted Digital Marketing

The company will utilize targeted digital marketing initiatives focused on food production facilities, agricultural operations, food import/export organizations, and companies requiring food safety support, sanitary compliance services, HACCP implementation, and export readiness assistance.

4. Direct Client Communication

Email communication and direct outreach efforts will be used to establish long-term relationships with food manufacturers, laboratories, agricultural organizations, and operational stakeholders requiring specialized technical support involving food safety and sanitary compliance.

5. Performance Monitoring

Marketing performance will be monitored through website traffic, lead generation activities, client engagement levels, consultation requests, and business development results, allowing continuous refinement of marketing strategies and operational outreach efforts.

Through this structured website and digital marketing strategy, Integra Health Systems LLC will strengthen its visibility within the U.S. food safety and agricultural sectors, support long-term client acquisition, and establish a credible operational presence within the food safety, animal health, and sanitary compliance industries.

5.3 Sales Forecast

Integra Health Systems LLC will utilize a project-based pricing structure aligned with the complexity of each engagement, regulatory requirements, operational scope, facility size, and level of technical support required. Pricing will vary depending on the number of production lines, operational risk factors, export requirements, facility conditions, and duration of the project.

The company's estimated service pricing ranges are as follows:

Service	Estimated Price Range
Food Safety and USDA Compliance Support	$10,000 to $25,000 per project
HACCP and Preventive Control Program Development	$8,000 to $20,000 per project
Animal Health and Zoonotic Disease Prevention Programs	$15,000 to $35,000 per project or annual program agreement
Technical Audits and Export Readiness Assessments	$7,500 to $18,000 per assessment

Food Safety and USDA Compliance Support projects will generally involve sanitary evaluations, operational compliance reviews, inspection preparation activities, documentation analysis, and support involving food safety requirements associated with products of animal origin.

HACCP and Preventive Control Program Development services will include implementation of HACCP systems, preventive controls, sanitary procedures, traceability protocols, corrective action programs, and employee training activities.

Animal Health and Zoonotic Disease Prevention Programs will involve sanitary risk assessments, biosafety procedures, epidemiological support activities, disease prevention protocols, and operational evaluations associated with public health protection and biological risk reduction.

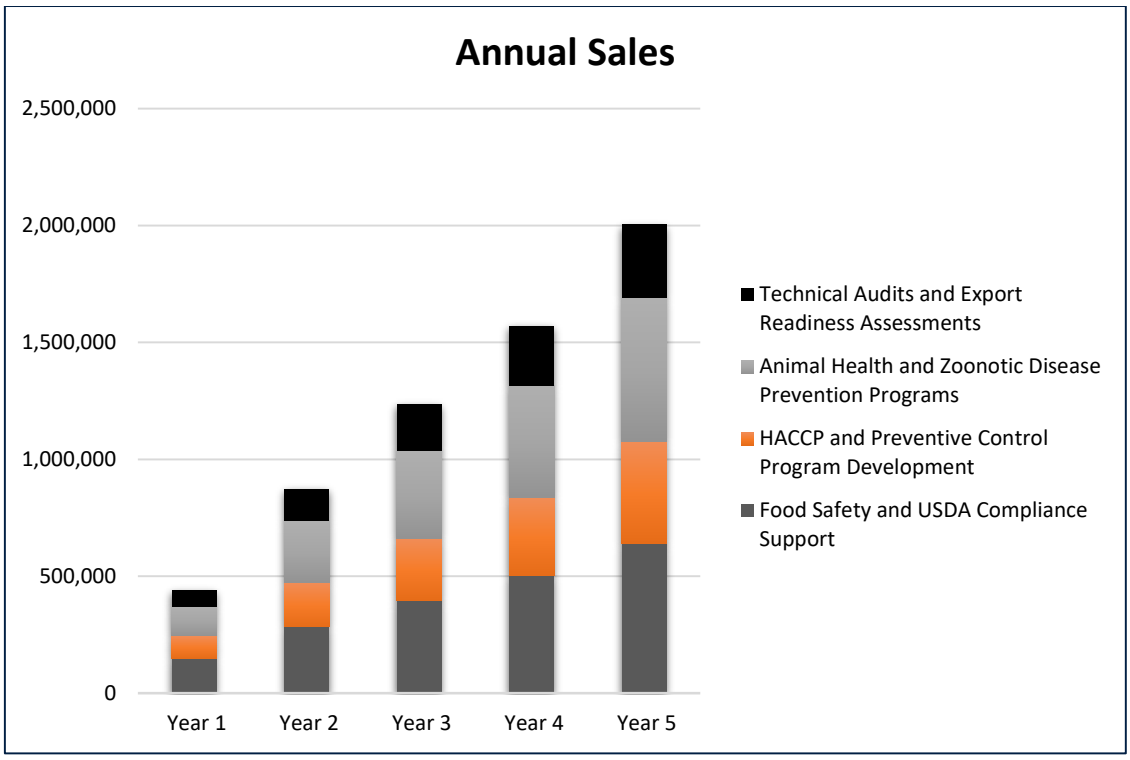
Technical Audits and Export Readiness Assessments will include operational audits, facility inspections, export compliance evaluations, regulatory gap assessments, inspection readiness reviews, and corrective support activities for organizations involved in domestic and international commercialization of products of animal origin.

5.3.1 Annual Sales Forecast Table

Sales Forecast					
	Year 1	Year 2	Year 3	Year 4	Year 5
Unit Sales					
Food Safety and USDA Compliance Support	10	18	24	29	35
HACCP and Preventive Control Program Development	8	15	20	24	30
Animal Health and Zoonotic Disease Prevention Programs	7	14	19	23	28
Technical Audits and Export Readiness Assessments	7	13	18	22	26
Total Unit Sales	32	60	81	98	119
Unit Prices	Year 1	Year 2	Year 3	Year 4	Year 5
Food Safety and USDA Compliance Support	$15,000.00	$15,750.00	$16,537.50	$17,364.38	$18,232.59
HACCP and Preventive Control Program Development	$12,000.00	$12,600.00	$13,230.00	$13,891.50	$14,586.08
Animal Health and Zoonotic Disease Prevention Programs	$18,000.00	$18,900.00	$19,845.00	$20,837.25	$21,879.11
Technical Audits and Export Readiness Assessments	$10,000.00	$10,500.00	$11,025.00	$11,576.25	$12,155.06
Sales					
Food Safety and USDA Compliance Support	$150,000	$283,500	$396,900	$503,567	$638,141
HACCP and Preventive Control Program Development	$96,000	$189,000	$264,600	$333,396	$437,582
Animal Health and Zoonotic Disease Prevention Programs	$126,000	$264,600	$377,055	$479,257	$612,615
Technical Audits and Export Readiness Assessments	$70,000	$136,500	$198,450	$254,678	$316,032
Total Sales	$442,000	$873,600	$1,237,005	$1,570,897	$2,004,370
Direct Unit Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Food Safety and USDA Compliance Support	$1,800.00	$1,890.00	$1,984.50	$2,083.73	$2,187.91
HACCP and Preventive Control Program Development	$1,440.00	$1,512.00	$1,587.60	$1,666.98	$1,750.33
Animal Health and Zoonotic Disease Prevention Programs	$2,160.00	$2,268.00	$2,381.40	$2,500.47	$2,625.49
Technical Audits and Export Readiness Assessments	$1,200.00	$1,260.00	$1,323.00	$1,389.15	$1,458.61
Direct Cost of Sales					
Food Safety and USDA Compliance Support	$18,000	$34,020	$47,628	$60,428	$76,577
HACCP and Preventive Control Program Development	$11,520	$22,680	$31,752	$40,008	$52,510

Animal Health and Zoonotic Disease Prevention Programs	$15,120	$31,752	$45,247	$57,511	$73,514
Technical Audits and Export Readiness Assessments	$8,400	$16,380	$23,814	$30,561	$37,924
Subtotal Direct Cost of Sales	**$53,040**	**$104,832**	**$148,441**	**$188,508**	**$240,524**

5.4.2 Annual Sales Chart



6.0 Management Structure

As previously mentioned, Mrs. Hanna Carolina Campos Ferreira will serve as the General Manager & Technical Director of Integra Health Systems LLC. The Personnel Plan demonstrates the company's strategy of gradual workforce expansion aligned with operational growth, project demand, and increasing technical service capacity. By Year 5, the company is projected to employ a total of 15 professionals, including Mrs. Ferreira.

6.1 Staffing Requirements

Integra Health Systems LLC has developed a structured and scalable personnel plan designed to support its operations involving food safety systems, sanitary compliance, HACCP implementation, zoonotic disease prevention, export readiness assessments, and regulatory support activities associated with products of animal origin.

During Year 1, the company will begin operations with a core team of four professionals, establishing the technical and operational foundation necessary to support its initial food safety and sanitary compliance activities. Hiring during the first year will occur progressively based on

project demand and operational growth, which may result in some positions not reflecting a full twelve-month salary during the initial operating period.

From Year 2 onward, all personnel are projected to operate on a full-year basis, with workforce growth aligned with increasing project volume, operational expansion, and growing demand for food safety and regulatory support services throughout the United States.

The initial Year 1 team will include:

- **General Manager & Technical Director – Mrs. Hanna Carolina Campos Ferreira**, with an initial salary of approximately $98,000, increasing to approximately $146,410 by Year 5, reflecting her leadership role overseeing technical operations, regulatory support activities, project execution, operational management, and long-term business growth.
- **Food Safety Specialist (1)**, responsible for supporting HACCP implementation, sanitary assessments, food safety documentation, preventive control procedures, operational compliance reviews, and food safety support activities involving products of animal origin.
- **Veterinary Public Health Specialist (1)**, responsible for supporting zoonotic disease prevention programs, sanitary risk assessments, biosafety procedures, epidemiological support activities, and public health-related operational evaluations.
- **Marketing and Business Development Specialist (1)**, responsible for market expansion activities, client acquisition, relationship development, digital marketing initiatives, and communication with food manufacturers, laboratories, and agricultural organizations.

Workforce Expansion Strategy

As operational demand increases, Integra Health Systems LLC will expand its workforce progressively, reaching a total of 15 employees by Year 5. This growth reflects increasing demand for food safety support services, sanitary compliance activities, export readiness assessments, zoonotic disease prevention programs, and regulatory operational support.

Key staffing developments include:

- **Food Safety Specialists** will expand from 1 professional in Year 1 to 2 professionals by Year 5, with total compensation increasing from approximately $75,000 to approximately $182,326, supporting increasing demand for HACCP implementation, sanitary compliance assessments, and food safety operational support activities.
- **Veterinary Public Health Specialists** will expand from 1 professional in Year 1 to 2 professionals by Year 5, with total compensation increasing from approximately $56,000 to approximately $206,636, supporting zoonotic disease prevention initiatives, sanitary monitoring activities, biosafety procedures, and animal health-related operational support.
- **Regulatory Compliance Coordinators** will be introduced in Year 2 and expand to 2 professionals by Year 5, with total compensation reaching approximately $158,016, supporting export readiness evaluations, regulatory compliance activities, operational documentation reviews, and inspection preparation procedures.
- **Technical Auditors** will be introduced in Year 3 and expand to 2 professionals by Year 5, with total compensation reaching approximately $170,171, supporting technical audits, sanitary inspections, compliance verification procedures, and operational food safety assessments.

- **Laboratory and Quality Control Analysts** will be introduced in Year 2 and expand to 2 professionals by Year 5, with total compensation reaching approximately $133,706, supporting laboratory coordination, quality assurance procedures, sample management activities, and technical reporting functions.
- **Administrative and Operations Coordinators** will be introduced in Year 3 and expand to 2 professionals by Year 5, with total compensation reaching approximately $121,551, supporting scheduling management, operational coordination, client communication, documentation control, and administrative support activities.
- **Marketing and Business Development Specialist** compensation is projected to increase from approximately $30,000 in Year 1 to approximately $72,930 by Year 5, supporting client acquisition, digital marketing initiatives, relationship development, and operational expansion activities.
- **Accounting and Financial Analyst** will be introduced in Year 2, with compensation projected to reach approximately $79,008 by Year 5, supporting bookkeeping activities, payroll coordination, financial controls, budgeting activities, and accounting support functions.

Total payroll is projected to increase from approximately $259,000 in Year 1 to approximately $1,270,753 by Year 5, reflecting the company's long-term investment in specialized technical professionals and operational personnel necessary to support service expansion and operational growth throughout the United States food safety and agricultural sectors.

6.2 Annual Personnel Plan Table

Personnel Plan					
	Year 1	Year 2	Year 3	Year 4	Year 5
General Manager & Technical Director - Mrs. Hanna Carolina Campos Ferreira	$98,000	$110,000	$121,000	$133,100	$146,410
Food Safety Specialist	$75,000	$78,750	$82,688	$173,644	$182,326
Veterinary Public Health Specialist	$56,000	$89,250	$93,713	$98,398	$206,636
Regulatory Compliance Coordinator	$0	$68,250	$71,663	$150,491	$158,016
Technical Auditor	$0	$0	$77,175	$81,034	$170,171
Laboratory and Quality Control Analyst	$0	$57,750	$121,275	$127,339	$133,706
Administrative and Operations Coordinator	$0	$0	$55,125	$57,881	$121,551
Marketing and Business Development Specialist	$30,000	$63,000	$66,150	$69,458	$72,930
Accounting and Financial Analyst	$0	$68,250	$71,663	$75,246	$79,008
Total People	4	7	10	12	15
Total Payroll	**$259,000**	**$535,250**	**$760,450**	**$966,590**	**$1,270,753**

6.3 Five-Year Personnel Plan Table

Personnel Plan					
	Year 1	Year 2	Year 3	Year 4	Year 5
General Manager & Technical Director - Mrs. Hanna Carolina Campos Ferreira	1	1	1	1	1
Food Safety Specialist	1	1	1	2	2
Veterinary Public Health Specialist	1	1	1	1	2
Regulatory Compliance Coordinator	0	1	1	2	2
Technical Auditor	0	0	1	1	2
Laboratory and Quality Control Analyst	0	1	2	2	2
Administrative and Operations Coordinator	0	0	1	1	2
Marketing and Business Development Specialist	1	1	1	1	1
Accounting and Financial Analyst	0	1	1	1	1
Total People	**4**	**7**	**10**	**12**	**15**

6.4 Organizational Chart – Year 5



6.5 Duties and Responsibilities

General Manager & Technical Director – Mrs. Hanna Carolina Campos Ferreira

- Oversee the company's operational activities and long-term business strategy.
- Supervise food safety, sanitary compliance, and animal health-related projects.
- Coordinate HACCP implementation and export readiness assessment activities.
- Review technical reports, sanitary evaluations, and compliance documentation.
- Maintain relationships with clients, laboratories, and agricultural organizations.
- Supervise workforce activities and operational performance standards.
- Support business development and market expansion initiatives.
- Ensure compliance with food safety regulations and public health-related requirements.

Food Safety Specialist

- Support HACCP implementation and preventive control procedures.
- Conduct food safety assessments and sanitary evaluations.
- Review food safety documentation and operational procedures.
- Assist with employee training and compliance support activities.

Veterinary Public Health Specialist

- Support zoonotic disease prevention and biosafety activities.
- Conduct sanitary risk assessments and operational evaluations.
- Assist with animal health monitoring and epidemiological support.
- Prepare technical documentation and public health-related reports.

Regulatory Compliance Coordinator

- Coordinate export readiness and compliance-related activities.
- Review operational records and sanitary documentation.
- Support inspection preparation and corrective action procedures.
- Monitor regulatory compliance involving food safety requirements.

Technical Auditor

- Conduct technical audits and sanitary inspections.
- Perform operational compliance verification activities.
- Prepare technical audit reports and compliance findings.
- Identify operational deficiencies and corrective action needs.

Laboratory and Quality Control Analyst

- Support laboratory coordination and quality assurance activities.
- Assist with sample management and technical verification procedures.
- Prepare technical reports and operational records.
- Monitor quality control and food safety support activities.

Administrative and Operations Coordinator

- Coordinate scheduling and operational logistics activities.

- Maintain documentation control and administrative records.
- Support client communication and operational follow-up procedures.
- Assist with invoicing and administrative support functions.

Marketing and Business Development Specialist

- Support client acquisition and business development activities.
- Develop digital marketing and operational outreach initiatives.
- Maintain relationships with food manufacturers and agricultural organizations.
- Monitor marketing performance and lead generation activities.

Accounting and Financial Analyst

- Support bookkeeping and payroll coordination activities.
- Maintain financial records and accounting documentation.
- Assist with budgeting and financial reporting procedures.
- Monitor operational expenses and financial control activities.

7.0 Financial Summary

The financial plan for Integra Health Systems LLC presents a structured projection of the company's financial performance during its first five years of operation in the United States. The projections are based on a scalable technical services model focused on food safety systems, sanitary compliance, HACCP implementation, export readiness assessments, zoonotic disease prevention programs, and regulatory support services involving products of animal origin.

The financial model reflects gradual operational expansion, controlled workforce growth, and increasing demand for specialized technical services within the U.S. food safety and agricultural sectors. Revenue growth is expected to be supported by increasing project volume, expansion of the company's client base, and the company's ability to support multiple food safety and sanitary compliance projects simultaneously.

Based on the sales forecast, total revenue is projected to increase from approximately $442,000 in Year 1 to approximately $2,004,370 by Year 5. This projected growth reflects increasing demand for food safety support services, HACCP implementation, export readiness evaluations, zoonotic disease prevention activities, and regulatory compliance support involving products of animal origin.

Gross margin is projected to increase from approximately $388,960 in Year 1 to approximately $1,763,845 in Year 5, reflecting the company's specialized service structure and relatively low direct operational costs associated with its technical service-based model.

Total operating expenses are projected to increase from approximately $362,100 in Year 1 to approximately $1,543,410 by Year 5. This increase reflects workforce expansion, payroll growth, office expenses, equipment investments, employee training, marketing activities, insurance costs, and operational support expenses required to sustain long-term business growth.

Payroll expenses are projected to increase from approximately $259,000 in Year 1 to approximately $1,270,753 in Year 5, reflecting the company's long-term investment in

specialized technical personnel and operational staff necessary to support increasing project demand and operational growth.

Profit Before Interest and Taxes (EBIT) is projected to increase from approximately $26,860 in Year 1 to approximately $220,436 in Year 5. EBITDA is projected to increase from approximately $26,860 in Year 1 to approximately $226,436 in Year 5, demonstrating gradual operational expansion and improving financial performance throughout the forecast period.

Net profit is projected to increase from approximately $19,608 in Year 1 to approximately $160,918 in Year 5. Net profit margins are projected to improve from approximately 4.44% in Year 1 to approximately 8.03% in Year 5 as the company expands operational capacity and increases service efficiency.

These financial projections demonstrate Integra Health Systems LLC's ability to maintain operational growth, expand its workforce, support increasing technical service demand, and sustain long-term financial stability within the United States food safety, animal health, and agricultural sectors.

7.1 Break-even Analysis

The Break-even Analysis is an important financial indicator for Integra Health Systems LLC, identifying the point at which the company's total revenue equals its total operational expenses. Based on the company's projected operational structure and service pricing model, Integra Health Systems LLC is expected to reach its monthly break-even point with approximately 2 service projects per month, generating monthly revenue of approximately $34,290.

This analysis is based on the following assumptions:

1. **Average Revenue Per Unit:** Each service project is expected to generate average revenue of approximately $13,812.50.
2. **Average Variable Cost Per Unit:** The average direct operational cost per project is estimated at approximately $1,657.50, including technical support activities, operational assessments, compliance reviews, documentation procedures, and project execution costs.
3. **Estimated Monthly Fixed Costs:** The company is projected to incur average monthly fixed operational expenses of approximately $30,175, including payroll obligations, insurance, rent, marketing activities, office expenses, accounting support, utilities, and administrative operational costs.

Understanding the company's break-even point is important for operational planning, financial management, and long-term growth strategy. The company's specialized technical service structure, combined with controlled operational costs and scalable service delivery, allows Integra Health Systems LLC to maintain a favorable break-even position during its initial operating phase.

Reaching this break-even point will represent an important operational milestone, demonstrating the company's ability to sustain operations, support workforce expansion, and maintain long-term financial stability within the United States food safety and agricultural sectors.

7.1.1 Break-even Analysis Chart

Break-even Analysis	
Monthly Units Break-even	2
Monthly Revenue Break-even	$34,290
Assumptions:	
Average Per-Unit Revenue	$13,812.50
Average Per-Unit Variable Cost	$1,657.50
Estimated Monthly Fixed Cost	**$30,175**

7.2 Profit and Loss Assumptions

Integra Health Systems LLC is preparing a structured financial plan focused on supporting the company's growth within the U.S. food safety, animal health, and sanitary compliance sectors. The company's financial strategy is based on gradual operational expansion, controlled workforce growth, and increasing demand for food safety assessments, HACCP implementation, export readiness evaluations, zoonotic disease prevention programs, and regulatory support services involving products of animal origin.

The company's revenue is projected to increase from approximately $442,000 in Year 1 to approximately $2,004,370 in Year 5, reflecting growth in project volume, expansion of operational capacity, and increasing demand for specialized food safety and sanitary compliance services.

Direct cost of sales is projected to increase from approximately $53,040 in Year 1 to approximately $240,524 in Year 5, reflecting workforce expansion, project execution costs, operational support activities, laboratory coordination, compliance procedures, and increasing technical service demand. Gross margin is projected to remain strong throughout the forecast period, increasing from approximately 88.00% in Year 1 to approximately 88.00% in Year 5, reflecting the company's specialized technical service structure and scalable operational model.

Operating expenses are projected to increase from approximately $362,100 in Year 1 to approximately $1,543,410 in Year 5. This increase reflects payroll expansion, operational growth, office expenses, marketing activities, employee training, insurance costs, equipment investments, and overall operational support required to sustain long-term business growth.

Payroll expenses are projected to increase from approximately $259,000 in Year 1 to approximately $1,270,753 in Year 5, reflecting the company's strategic investment in specialized technical personnel and operational staff necessary to support increasing service demand and operational expansion.

Profit Before Interest and Taxes (EBIT) is projected to increase from approximately $26,860 in Year 1 to approximately $220,436 in Year 5. EBITDA is projected to increase from approximately $26,860 in Year 1 to approximately $226,436 in Year 5, demonstrating gradual operational growth and improving financial performance throughout the forecast period.

Net profit is projected to increase from approximately $19,608 in Year 1 to approximately $160,918 in Year 5. Net profit margins are projected to improve from approximately 4.44% in

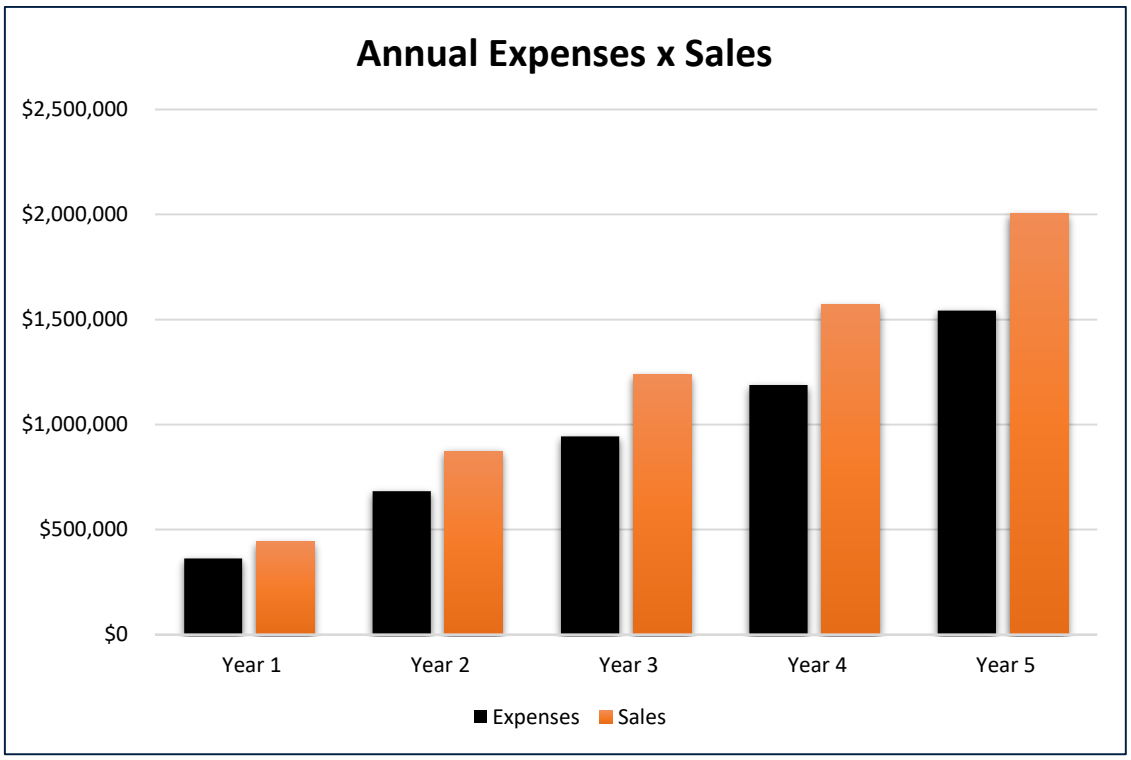
Year 1 to approximately 8.03% in Year 5, reflecting operational scalability, controlled cost management, and increasing service efficiency as the company expands.

These financial projections demonstrate Integra Health Systems LLC's ability to maintain operational growth, expand its workforce, support increasing demand for food safety and regulatory support services, and sustain long-term financial stability within the United States food safety, animal health, and agricultural sectors.

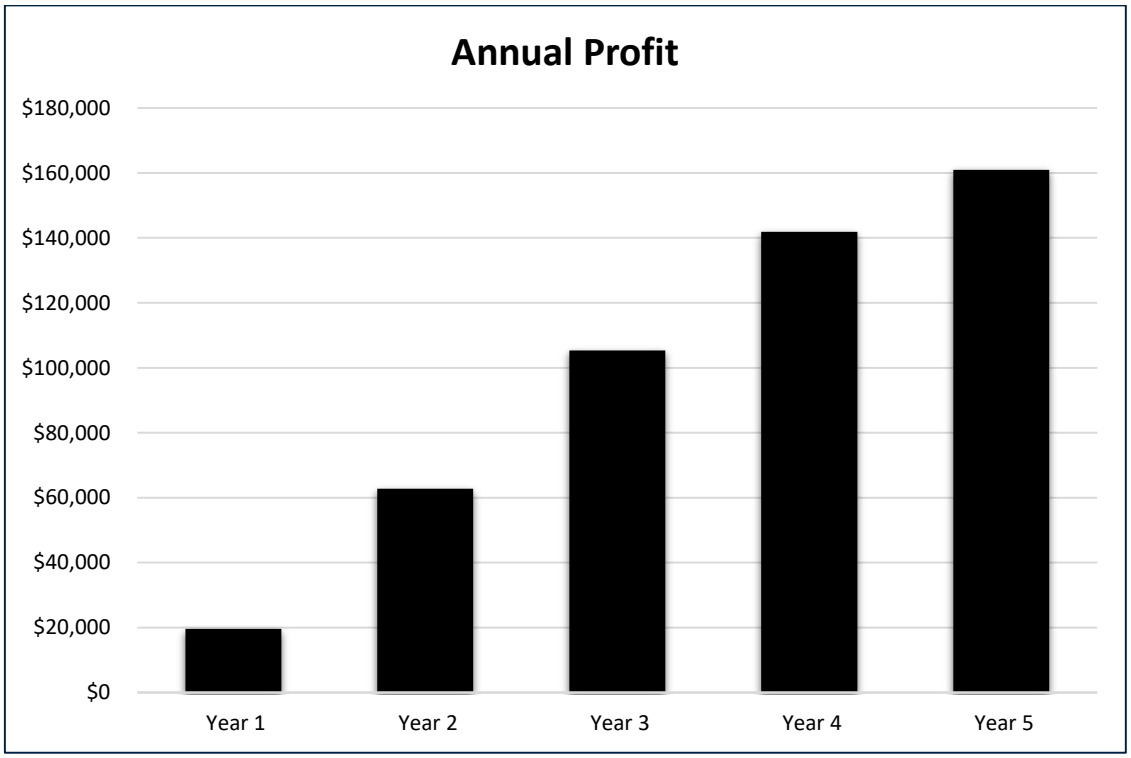
7.2.1 Annual Profit and Loss Table

Pro Forma Profit and Loss					
	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	$442,000	$873,600	$1,237,005	$1,570,897	$2,004,370
Direct Cost of Sales	$53,040	$104,832	$148,441	$188,508	$240,524
Total Cost of Sales	$53,040	$104,832	$148,441	$188,508	$240,524
Gross Margin	$388,960	$768,768	$1,088,564	$1,382,389	$1,763,845
Expenses					
Payroll	$259,000	$535,250	$760,450	$966,590	$1,270,753
Payroll Taxes	$25,900	$53,525	$76,045	$96,659	$127,075
Depreciation	$0	$12,000	$10,000	$8,000	$6,000
Rent	$24,000	$28,800	$34,560	$41,472	$49,766
Insurance	$2,400	$2,880	$3,456	$4,147	$4,977
Marketing/Promotion	$6,000	$7,200	$8,640	$10,368	$12,442
Utilities/Internet/Phone	$1,800	$2,160	$2,592	$3,110	$3,732
Employees Education	$0	$8,000	$9,600	$11,520	$13,824
Equipment	$40,000	$30,000	$36,000	$43,200	$51,840
Accountant	$3,000	$3,000	$3,000	$3,000	$3,000
Total Operating Expenses	$362,100	$682,815	$944,343	$1,188,067	$1,543,410
Profit Before Interest and Taxes	$26,860	$85,953	$144,221	$194,323	$220,436
EBITDA	$26,860	$97,953	$154,221	$202,323	$226,436
Taxes Incurred	$7,252	$23,207	$38,940	$52,467	$59,518
Net Profit	$19,608	$62,746	$105,282	$141,856	$160,918
Net Profit/Sales	**4.44%**	**7.18%**	**8.51%**	**9.03%**	**8.03%**

7.2.2 Annual Expenses x Sales Chart



7.2.3 Annual Profit Chart



7.3 Cash Flow Assumptions

Integra Health Systems LLC's Pro Forma Cash Flow statement reflects a disciplined operational and financial structure designed to maintain positive cash flow, support operational expansion, and ensure sufficient liquidity throughout the company's projected growth period.

Cash inflows are generated entirely through operational activities associated with food safety assessments, HACCP implementation, sanitary compliance reviews, export readiness evaluations, zoonotic disease prevention programs, and regulatory support services involving products of animal origin. Total cash received is projected to increase from approximately $413,967 in Year 1 to approximately $1,976,877 by Year 5, reflecting increasing project volume and operational expansion.

The company does not project reliance on external financing, loans, or additional investment contributions during the forecast period. Operational growth is expected to be supported primarily through internally generated revenue and disciplined cash management practices.

Operational expenditures are primarily driven by payroll expenses, technical project execution activities, operational support costs, equipment investments, insurance, marketing activities, office expenses, employee training, and workforce expansion activities.

Cash spending related to payroll is projected to increase from approximately $259,000 in Year 1 to approximately $1,270,753 by Year 5, reflecting the company's phased workforce expansion strategy. Bill payments associated with operational expenses are projected to increase from approximately $143,007 in Year 1 to approximately $557,473 by Year 5.

Total cash expenditures are projected to increase from approximately $402,007 in Year 1 to approximately $1,903,226 by Year 5, including operational expenses and planned dividend distributions.

Despite increasing operational expenditures, Integra Health Systems LLC is projected to maintain positive net cash flow throughout the entire forecast period. Net cash flow is projected to increase from approximately $11,960 in Year 1 to approximately $73,651 by Year 5.

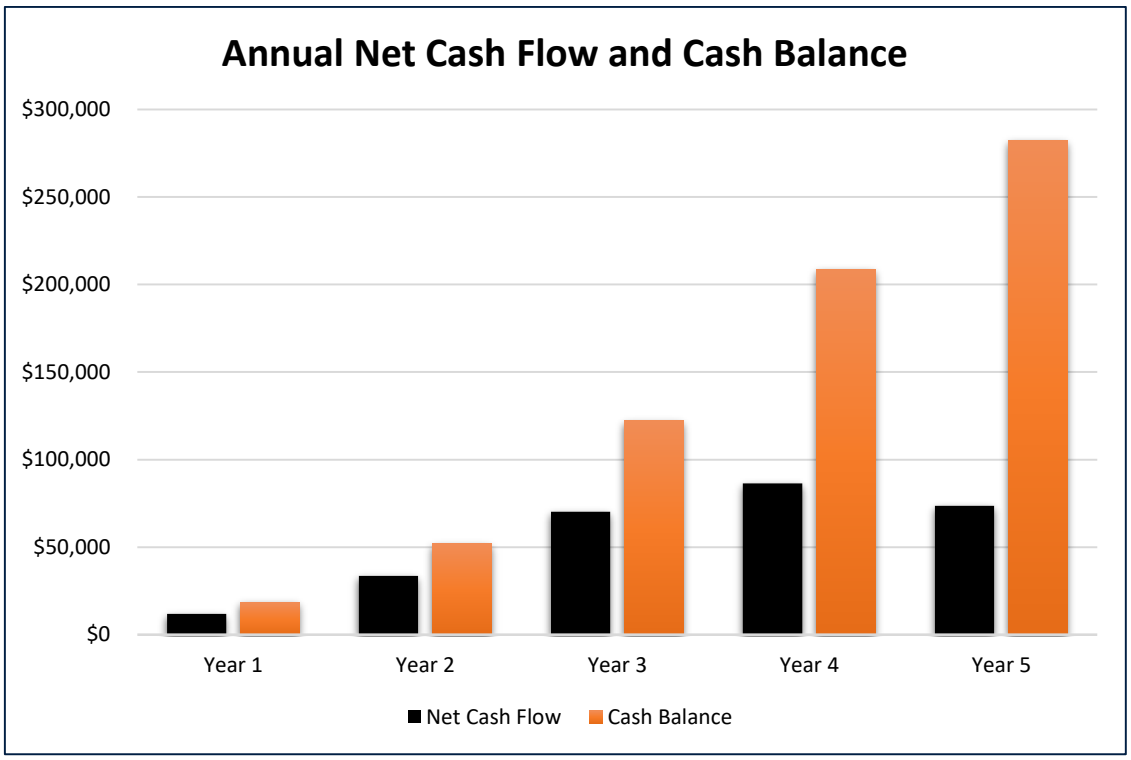
The company's cash balance is projected to increase steadily from approximately $18,460 in Year 1 to approximately $282,362 by Year 5, supporting operational liquidity, workforce expansion, equipment investments, and long-term operational stability.

These projections demonstrate the company's ability to maintain positive operational cash flow while supporting gradual expansion and maintaining financial stability within the United States food safety, animal health, and sanitary compliance sectors.

7.3.1 Annual Cash Flow Table

Pro Forma Cash Flow					
	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Received					
Cash from Operations					
Cash Sales	$221,000	$436,800	$618,503	$785,449	$1,002,185
Cash from Receivables	$192,967	$409,426	$595,454	$764,272	$974,692
Subtotal Cash from Operations	$413,967	$846,226	$1,213,956	$1,549,720	$1,976,877
Additional Cash Received					
Non-Operating (Other) Income	$0	$0	$0	$0	$0
Sales Tax, VAT, HST/GST Received	$0	$0	$0	$0	$0
New Current Borrowing	$0	$0	$0	$0	$0
New Other Liabilities (interest-free)	$0	$0	$0	$0	$0
New Long-term Liabilities	$0	$0	$0	$0	$0
Sales of Other Current Assets	$0	$0	$0	$0	$0
Sales of Long-term Assets	$0	$0	$0	$0	$0
New Investment Received	$0	$0	$0	$0	$0
Subtotal Cash Received	$413,967	$846,226	$1,213,956	$1,549,720	$1,976,877
Expenditures	Year 1	Year 2	Year 3	Year 4	Year 5
Expenditures from Operations					
Cash Spending	$259,000	$535,250	$760,450	$966,590	$1,270,753
Bill Payments	$143,007	$262,324	$353,246	$446,793	$557,473
Subtotal Spent on Operations	$402,007	$797,574	$1,113,696	$1,413,383	$1,828,226
Additional Cash Spent					
Non-Operating (Other) Expense	$0	$0	$0	$0	$0
Sales Tax, VAT, HST/GST Paid Out	$0	$0	$0	$0	$0
Principal Repayment of Current Borrowing	$0	$0	$0	$0	$0
Other Liabilities Principal Repayment	$0	$0	$0	$0	$0
Long-term Liabilities Principal Repayment	$0	$0	$0	$0	$0
Purchase Other Current Assets	$0	$0	$0	$0	$0
Purchase Long-term Assets	$0	$0	$0	$0	$0
Dividends	$0	$15,000	$30,000	$50,000	$75,000
Subtotal Cash Spent	$402,007	$812,574	$1,143,696	$1,463,383	$1,903,226
Net Cash Flow	$11,960	$33,652	$70,261	$86,337	$73,651
Cash Balance	**$18,460**	**$52,113**	**$122,373**	**$208,711**	**$282,362**

7.3.2 Annual Net Cash Flow and Cash Balance Chart



7.4 Balance Sheet Assumptions

Integra Health Systems LLC's Pro Forma Balance Sheet reflects a financially stable and operationally disciplined business structure characterized by controlled asset growth, limited liabilities, increasing equity, and strong liquidity throughout the five-year projection period.

Assets Structure

The company's asset structure is primarily composed of cash reserves and accounts receivable associated with food safety, sanitary compliance, and regulatory support operations.

Cash is projected to increase from approximately $18,460 in Year 1 to approximately $282,362 by Year 5, reflecting positive operational cash flow and disciplined financial management. Accounts receivable are projected to increase from approximately $28,033 in Year 1 to approximately $127,125 by Year 5, consistent with increasing project volume and operational growth.

Total current assets are projected to increase from approximately $46,493 in Year 1 to approximately $409,487 by Year 5.

The company does not project significant long-term assets during the forecast period. Accumulated depreciation is projected to increase gradually from $0 in Year 1 to approximately $36,000 by Year 5, reflecting depreciation associated with equipment, office infrastructure, computers, and operational technology resources.

As a result, total assets are projected to increase from approximately $46,493 in Year 1 to approximately $373,487 by Year 5.

Liabilities Structure

The company maintains a conservative and debt-free financial structure throughout the forecast period. Accounts payable represent the company's primary liability and are projected to increase from approximately $20,386 in Year 1 to approximately $46,578 by Year 5, reflecting increasing operational activity and project volume.

The company does not project any short-term borrowing or long-term debt obligations during the five-year projection period.

Equity and Capital Growth

The company's equity position is projected to strengthen steadily through retained earnings and increasing profitability.

Paid-in capital is projected to remain constant at approximately $50,000 throughout the forecast period. Retained earnings are projected to improve from approximately ($43,500) in Year 1 to approximately $115,991 by Year 5, reflecting the gradual accumulation of operational profits and financial stabilization.

Annual earnings are projected to increase from approximately $19,608 in Year 1 to approximately $160,918 by Year 5.

As a result, total capital is projected to increase from approximately $26,108 in Year 1 to approximately $326,909 by Year 5, demonstrating sustained financial growth and improving net worth throughout the company's operational expansion.

7.4.1 Annual Balance Sheet Table

Pro Forma Balance Sheet					
	Year 1	Year 2	Year 3	Year 4	Year 5
Assets					
Current Assets					
Cash	$18,460	$52,113	$122,373	$208,711	$282,362
Accounts Receivable	$28,033	$55,407	$78,456	$99,632	$127,125
Inventory	$0	$0	$0	$0	$0
Other Current Assets	$0	$0	$0	$0	$0
Total Current Assets	$46,493	$107,520	$200,829	$308,343	$409,487
Long-term Assets					
Long-term Assets	$0	$0	$0	$0	$0
Accumulated Depreciation	$0	$12,000	$22,000	$30,000	$36,000
Total Long-term Assets	$0	($12,000)	($22,000)	($30,000)	($36,000)
Total Assets	$46,493	$95,520	$178,829	$278,343	$373,487
Liabilities and Capital	Year 1	Year 2	Year 3	Year 4	Year 5
Current Liabilities					

Accounts Payable	$20,386	$21,666	$29,694	$37,352	$46,578
Current Borrowing	$0	$0	$0	$0	$0
Other Current Liabilities	$0	$0	$0	$0	$0
Subtotal Current Liabilities	$20,386	$21,666	$29,694	$37,352	$46,578
Long-term Liabilities	$0	$0	$0	$0	$0
Total Liabilities	$20,386	$21,666	$29,694	$37,352	$46,578
Paid-in Capital	$50,000	$50,000	$50,000	$50,000	$50,000
Retained Earnings	($43,500)	($38,892)	($6,147)	$49,135	$115,991
Earnings	$19,608	$62,746	$105,282	$141,856	$160,918
Total Capital	$26,108	$73,853	$149,135	$240,991	$326,909
Total Liabilities and Capital	$46,493	$95,520	$178,829	$278,343	$373,487
Net Worth	**$26,108**	**$73,853**	**$149,135**	**$240,991**	**$326,909**

8.0 Mrs. Hanna Carolina Campos Ferreira's National-level Impact

Contribution to Food Safety and Public Health Protection

Integra Health Systems LLC will contribute to the United States by supporting food safety systems, sanitary compliance, zoonotic disease prevention, and operational risk reduction within the food production and agricultural sectors. The company's services are directly connected to broader national priorities involving public health protection, food security, agricultural safety, and supply chain reliability.

The United States Department of Agriculture (USDA) and the Food and Drug Administration (FDA) continue to prioritize food safety modernization, preventive controls, sanitary compliance, and biological risk reduction throughout the national food supply chain.[26] Integra Health Systems LLC supports these priorities by helping food manufacturers and agricultural organizations strengthen operational food safety systems, improve sanitary compliance procedures, and maintain regulatory readiness involving products of animal origin.

Support for Food Supply Chain Integrity

The United States continues to prioritize food supply chain resilience and operational continuity due to increasing concerns involving foodborne illnesses, contamination risks, international trade requirements, and biological threats associated with food production systems.

Integra Health Systems LLC will support these national priorities through food safety assessments, HACCP implementation, sanitary audits, export readiness evaluations, and operational compliance services designed to reduce operational deficiencies and strengthen food safety procedures throughout food production environments.[27]

The company's activities contribute to broader federal initiatives focused on food safety preparedness, supply chain reliability, agricultural protection, and public health security.

[26] https://www.fda.gov/food/guidance-regulation-food-and-dietary-supplements/food-safety-modernization-act-fsma

[27] https://fsa-lab.com/services/

Contribution to Zoonotic Disease Prevention and Animal Health

The Centers for Disease Control and Prevention (CDC) recognizes zoonotic diseases and emerging infectious diseases as important public health concerns within the United States. According to the CDC, approximately 75% of emerging infectious diseases affecting humans originate from animals.[28]

Integra Health Systems LLC will contribute to these national public health priorities through technical services involving zoonotic disease prevention, biosafety procedures, sanitary risk assessments, epidemiological support activities, and animal health monitoring programs.

The company's services help agricultural organizations and food manufacturers reduce biological risks, strengthen disease prevention measures, and improve sanitary preparedness within food production operations.

Support for Export Readiness and International Trade

The United States agricultural sector depends heavily on international trade involving meat, dairy, poultry, eggs, honey, and other products of animal origin. Food manufacturers operating within international markets must comply with strict sanitary and operational requirements associated with export certifications and regulatory compliance.[29]

Integra Health Systems LLC will support export-related operational readiness through technical audits, sanitary assessments, operational compliance reviews, HACCP implementation, and regulatory support activities associated with domestic and international food safety requirements.

These services contribute to maintaining the integrity and competitiveness of U.S. food production and export operations within global markets.

Workforce Development and Specialized Technical Expertise

The food safety and agricultural sectors continue to experience demand for highly specialized professionals with expertise involving sanitary inspection systems, food safety regulations, zoonotic disease prevention, HACCP implementation, and operational compliance activities.

Integra Health Systems LLC will contribute to workforce development within the United States by creating specialized technical positions involving food safety support, veterinary public health, regulatory compliance, laboratory coordination, technical auditing, and operational support services.

The company's operational structure supports long-term workforce growth while strengthening specialized technical expertise within the U.S. food safety and agricultural sectors.

[28] https://www.cdc.gov/one-health/about/about-zoonotic-diseases.html
[29] https://www.aptean.com/en-US/insights/blog/compliance-in-food-industry

Economic and Fiscal Contributions

In addition to operational and public health-related contributions, Integra Health Systems LLC is projected to contribute to the U.S. economy through revenue generation, payroll expansion, tax contributions, and long-term business growth within the food safety and agricultural sectors.

The company's projected operational growth will support job creation, local business activity, operational spending, and tax contributions associated with food safety, sanitary compliance, and regulatory support operations throughout Florida and additional U.S. markets.

The company's services also indirectly support the broader U.S. economy by helping food manufacturers and agricultural organizations improve operational reliability, maintain regulatory compliance, reduce biological risks, and strengthen food supply chain integrity within critical sectors of the United States economy.

9.0 Indirect jobs creation - Economic Policy Institute

Each industry has backward linkages to economic sectors that provide the materials needed for the industry's output, just as each industry has forward linkages to the economic sectors where the industry's workers spend their income. Therefore, in addition to the jobs directly supported by an industry, a large number of indirect jobs may also be supported by that industry. The subtraction or addition of jobs and output in industries with strong backward and forward linkages to other economic sectors can cause large ripple effects.

According to the national job multipliers published by the Economy Policy Institute (EPI),[30] 100 direct jobs in the Animal Production and Aquaculture industry generate a total of 180.4 total indirect jobs, as demonstrated in the following table:

Employment multipliers per 100 direct jobs, all private-sector industries

	Industry	Direct jobs	Supplier jobs*	Induced jobs**	Total indirect jobs
1	Crop production	100.0	74.4	55.2	129.6
2	Animal production and aquaculture	100.0	112.4	68.0	180.4
3	Forestry	100.0	285.7	124.3	410.0
4	Logging	100.0	150.1	88.1	238.2
5	Fishing, hunting, and trapping	100.0	116.5	59.2	175.7
6	Support activities for agriculture	100.0	79.7	51.2	130.9

[30] https://www.epi.org/publication/updated-employment-multipliers-for-the-u-s-economy/

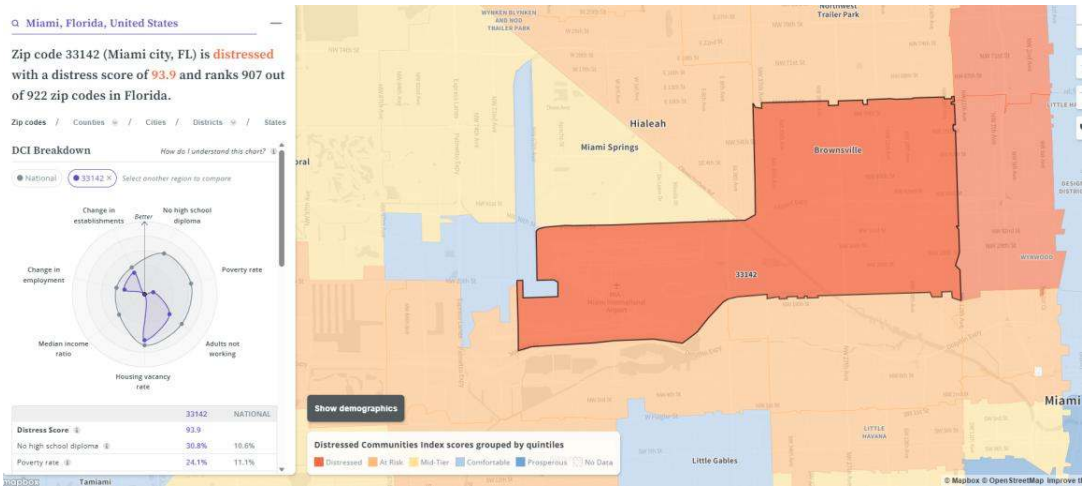
Since Mrs. Ferreira will create 15 direct jobs by the end of Year 5, the total number of indirect jobs to be generated in the same period will reach 27 according to the multipliers provided by the EPI. In addition to its in-house team, Integra Health Systems LLC will hire a number of independent contractors on a project basis, including legal professionals and technicians. Additionally, the company will mediate in the hiring of professionals that will perform services that are deemed to be required. Therefore, the company will stimulate the employment of a number of workers of different profiles. Furthermore, the company will hire an outsourced marketing company to develop its website and work with marketing campaigns.

The direct and indirect job creation by Integra Health Systems LLC, as well as the utilization of independent contractors and outsourced services, will have a significant positive impact on the local and national economy, fostering job growth, generating income, and contributing to overall economic prosperity.

In conclusion, Integra Health Systems LLC' expansion plans, under the leadership of Mrs. Hanna Carolina Campos Ferreira, encompass the creation of direct and indirect employment opportunities, the payment of substantial taxes, and the utilization of local resources and services. By contributing to job creation, tax revenue, and economic growth, Integra Health Systems LLC aims to make a lasting and positive impact on both the local community and the broader U.S. economy.

9.1 Distressed Communities

This section provides an overview of the demographic and socioeconomic conditions within economically distressed areas of Miami, Florida, where Integra Health Systems LLC plans to establish its operations. ZIP Code 33142, located within Miami, is classified as a highly distressed community with a Distressed Communities Index (DCI) score of approximately 93.9, ranking 907 out of 922 ZIP codes in the State of Florida. These indicators reflect significant economic challenges involving poverty levels, workforce participation, educational attainment, and household income stability.[31]



[31] https://eig.org/distressed-communities-interactive/?regions%5B0%5D=33142&geo=zctas&lat=25.82&lon=-80.27&z=12.47

Demographic and Socioeconomic Profile

- **DCI Score and Economic Distress:** The elevated DCI score reflects substantial economic distress affecting the local population and business environment. These indicators demonstrate ongoing challenges involving income levels, employment participation, educational access, and long-term economic stability within the community.
- **Education Levels:** Educational attainment within ZIP Code 33142 reflects workforce development challenges and opportunities. Approximately 30.8% of residents do not possess a high school diploma, significantly exceeding the national average of 10.6%. At the same time, approximately 36.8% of residents possess a high school diploma, 19.2% have some college education, and approximately 13.2% hold a bachelor's degree or higher.
- **Poverty and Income Levels:** The area experiences elevated poverty levels and reduced household income stability. Approximately 24.1% of residents live below the poverty line, more than double the national average of 11.1%. Median household income levels reach only approximately 51.6% of the national benchmark, demonstrating reduced purchasing power and broader economic challenges affecting local households.
- **Workforce Participation:** Workforce participation also remains a significant challenge within the community. Approximately 27.8% of adults are currently not working, exceeding the national average of 20.6%. These conditions demonstrate underutilized labor capacity and the need for additional skilled employment opportunities and workforce development initiatives.
- **Housing and Vacancy Rates:** Housing instability also affects portions of the local community. Housing vacancy rates are estimated at approximately 8.3%, slightly above the national average of 7.0%, reflecting broader economic pressures involving affordability and long-term community investment.
- **Demographics and Diversity:** ZIP Code 33142 reflects a highly diverse and multicultural population. Approximately 68.0% of residents identify as Hispanic or Latino, while approximately 28.1% identify as Black or African American. In addition, approximately 50.7% of residents are foreign-born, contributing to the area's diverse workforce and strong international business environment.

Business Implications

- **Workforce Development and Employment Opportunities:** The economic profile of ZIP Code 33142 demonstrates a clear need for skilled employment opportunities and technical workforce development. Integra Health Systems LLC will contribute to local economic activity by creating specialized positions involving food safety systems, sanitary compliance, veterinary public health, technical auditing, laboratory coordination, and operational support services.
- **Support for Local Economic Activity:** The company's operational activities will generate local economic impact through payroll expansion, operational spending, equipment purchases, administrative support services, marketing activities, and long-term business operations within Miami.
- **Strategic Importance of Miami's Food and Trade Infrastructure:** Miami remains one of the most important international trade and logistics hubs in the United States, supporting food

imports, exports, transportation operations, and agricultural distribution activities connecting the United States with Latin America and global markets. The presence of distressed communities within a strategically important commercial region highlights the importance of investment, workforce development, and long-term business activity within the area.

- **Economic Development Potential:** Businesses operating within distressed communities may benefit from local and regional economic development initiatives, workforce support programs, and broader investment opportunities designed to encourage job creation and long-term economic activity.

  Integra Health Systems LLC's operational model aligns with these objectives by combining technical workforce creation, food safety and public health-related services, and long-term operational investment within an economically distressed area of Miami.

- **Community and Economic Impact:** Although Integra Health Systems LLC will operate as a specialized food safety and sanitary compliance company, its long-term operational activities have broader economic implications involving job creation, workforce participation, operational spending, technical training opportunities, and support for public health and food safety-related economic activities within the community.

APPENDIX

Monthly Sales Forecast Table

Sales Forecast													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Unit Sales													
Food Safety and USDA Compliance Support		1	0	1	0	1	0	1	1	0	1	2	2
HACCP and Preventive Control Program Development		0	1	0	1	0	1	1	1	1	1	1	0
Animal Health and Zoonotic Disease Prevention Programs		0	0	1	0	1	0	1	0	1	1	1	1
Technical Audits and Export Readiness Assessments		0	1	0	1	1	1	0	0	1	0	1	1
Total Unit Sales		1	2	2	2	3	2	3	2	3	3	5	4
Unit Prices		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Food Safety and USDA Compliance Support		$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00
HACCP and Preventive Control Program Development		$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00
Animal Health and Zoonotic Disease Prevention Programs		$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00
Technical Audits and Export Readiness Assessments		$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00
Sales													
Food Safety and USDA Compliance Support		$15,000	$0	$15,000	$0	$15,000	$0	$15,000	$15,000	$0	$15,000	$30,000	$30,000
HACCP and Preventive Control Program Development		$0	$12,000	$0	$12,000	$0	$12,000	$12,000	$12,000	$12,000	$12,000	$12,000	$0
Animal Health and Zoonotic Disease Prevention Programs		$0	$0	$18,000	$0	$18,000	$0	$18,000	$0	$18,000	$18,000	$18,000	$18,000
Technical Audits and Export Readiness Assessments		$0	$10,000	$0	$10,000	$10,000	$10,000	$0	$0	$10,000	$0	$10,000	$10,000
Total Sales		$15,000	$22,000	$33,000	$22,000	$43,000	$22,000	$45,000	$27,000	$40,000	$45,000	$70,000	$58,000
Direct Unit Costs		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12

Food Safety and USDA Compliance Support	12.00%	$1,800.00	$1,800.00	$1,800.00	$1,800.00	$1,800.00	$1,800.00	$1,800.00	$1,800.00	$1,800.00	$1,800.00	$1,800.00	$1,800.00
HACCP and Preventive Control Program Development	12.00%	$1,440.00	$1,440.00	$1,440.00	$1,440.00	$1,440.00	$1,440.00	$1,440.00	$1,440.00	$1,440.00	$1,440.00	$1,440.00	$1,440.00
Animal Health and Zoonotic Disease Prevention Programs	12.00%	$2,160.00	$2,160.00	$2,160.00	$2,160.00	$2,160.00	$2,160.00	$2,160.00	$2,160.00	$2,160.00	$2,160.00	$2,160.00	$2,160.00
Technical Audits and Export Readiness Assessments	12.00%	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00
Direct Cost of Sales													
Food Safety and USDA Compliance Support		$1,800	$0	$1,800	$0	$1,800	$0	$1,800	$1,800	$0	$1,800	$3,600	$3,600
HACCP and Preventive Control Program Development		$0	$1,440	$0	$1,440	$0	$1,440	$1,440	$1,440	$1,440	$1,440	$1,440	$0
Animal Health and Zoonotic Disease Prevention Programs		$0	$0	$2,160	$0	$2,160	$0	$2,160	$0	$2,160	$2,160	$2,160	$2,160
Technical Audits and Export Readiness Assessments		$0	$1,200	$0	$1,200	$1,200	$1,200	$0	$0	$1,200	$0	$1,200	$1,200
Subtotal Direct Cost of Sales		**$1,800**	**$2,640**	**$3,960**	**$2,640**	**$5,160**	**$2,640**	**$5,400**	**$3,240**	**$4,800**	**$5,400**	**$8,400**	**$6,960**

Monthly Personnel Plan Table

Personnel Plan													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
General Manager & Technical Director - Mrs. Hanna Carolina Campos Ferreira		$0	$6,000	$6,000	$8,000	$8,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
Food Safety Specialist		$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250
Veterinary Public Health Specialist		$0	$0	$0	$0	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000
Regulatory Compliance Coordinator		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technical Auditor		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Laboratory and Quality Control Analyst		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Administrative and Operations Coordinator		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Marketing and Business Development Specialist		$0	$0	$0	$0	$0	$0	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Accounting and Financial Analyst		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total People		2	2	2	2	3	3	4	4	4	4	4	4
Total Payroll		**$6,250**	**$12,250**	**$12,250**	**$14,250**	**$21,250**	**$23,250**	**$28,250**	**$28,250**	**$28,250**	**$28,250**	**$28,250**	**$28,250**

Monthly Profit and Loss Table

Pro Forma Profit and Loss													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Sales		$15,000	$22,000	$33,000	$22,000	$43,000	$22,000	$45,000	$27,000	$40,000	$45,000	$70,000	$58,000
Direct Cost of Sales		$1,800	$2,640	$3,960	$2,640	$5,160	$2,640	$5,400	$3,240	$4,800	$5,400	$8,400	$6,960
Total Cost of Sales		$1,800	$2,640	$3,960	$2,640	$5,160	$2,640	$5,400	$3,240	$4,800	$5,400	$8,400	$6,960
Gross Margin		$13,200	$19,360	$29,040	$19,360	$37,840	$19,360	$39,600	$23,760	$35,200	$39,600	$61,600	$51,040
Expenses													
Payroll		$6,250	$12,250	$12,250	$14,250	$21,250	$23,250	$28,250	$28,250	$28,250	$28,250	$28,250	$28,250
Payroll Taxes	10%	$625	$1,225	$1,225	$1,425	$2,125	$2,325	$2,825	$2,825	$2,825	$2,825	$2,825	$2,825
Depreciation		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Rent		$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Insurance		$200	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200
Marketing/Promotion		$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Utilities/Internet/Phone		$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Employees Education	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Equipment	0%	$0	$0	$0	$0	$0	$10,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Accountant	0%	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250
Total Operating Expenses		$9,975	$16,575	$16,575	$18,775	$26,475	$38,675	$39,175	$39,175	$39,175	$39,175	$39,175	$39,175
Profit Before Interest and Taxes		$3,225	$2,785	$12,465	$585	$11,365	($19,315)	$425	($15,415)	($3,975)	$425	$22,425	$11,865
EBITDA		$3,225	$2,785	$12,465	$585	$11,365	($19,315)	$425	($15,415)	($3,975)	$425	$22,425	$11,865
Interest Expense		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxes Incurred		$871	$752	$3,366	$158	$3,069	($5,215)	$115	($4,162)	($1,073)	$115	$6,055	$3,204
Net Other Income		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Net Profit		$2,354	$2,033	$9,099	$427	$8,296	($14,100)	$310	($11,253)	($2,902)	$310	$16,370	$8,661
Net Profit/Sales		**15.70%**	**9.24%**	**27.57%**	**1.94%**	**19.29%**	**-64.09%**	**0.69%**	**-41.68%**	**-7.25%**	**0.69%**	**23.39%**	**14.93%**

Monthly Cash Flow Table

Pro Forma Cash Flow													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Cash Received													
Cash from Operations													
Cash Sales		$7,500	$11,000	$16,500	$11,000	$21,500	$11,000	$22,500	$13,500	$20,000	$22,500	$35,000	$29,000
Cash from Receivables		$250	$7,617	$11,183	$16,317	$11,350	$21,150	$11,383	$22,200	$13,717	$20,083	$22,917	$34,800
Subtotal Cash from Operations		$7,750	$18,617	$27,683	$27,317	$32,850	$32,150	$33,883	$35,700	$33,717	$42,583	$57,917	$63,800
Additional Cash Received													
Non-Operating (Other) Income		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales Tax, VAT, HST/GST Received	0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Current Borrowing		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Other Liabilities (interest-free)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Long-term Liabilities		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales of Other Current Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales of Long-term Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Investment Received		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Cash Received		$7,750	$18,617	$27,683	$27,317	$32,850	$32,150	$33,883	$35,700	$33,717	$42,583	$57,917	$63,800
Expenditures		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Expenditures from Operations													
Cash Spending		$6,250	$12,250	$12,250	$14,250	$21,250	$23,250	$28,250	$28,250	$28,250	$28,250	$28,250	$28,250
Bill Payments		$213	$6,440	$7,848	$11,506	$7,527	$13,433	$12,970	$16,225	$10,158	$14,711	$16,738	$25,237
Subtotal Spent on Operations		$6,463	$18,690	$20,098	$25,756	$28,777	$36,683	$41,220	$44,475	$38,408	$42,961	$44,988	$53,487
Additional Cash Spent													
Non-Operating (Other) Expense		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales Tax, VAT, HST/GST Paid Out		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principal Repayment of Current Borrowing		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Liabilities Principal Repayment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Long-term Liabilities Principal Repayment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase Other Current Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase Long-term Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dividends		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Cash Spent		$6,463	$18,690	$20,098	$25,756	$28,777	$36,683	$41,220	$44,475	$38,408	$42,961	$44,988	$53,487
Net Cash Flow		$1,287	($73)	$7,585	$1,560	$4,073	($4,533)	($7,336)	($8,775)	($4,691)	($378)	$12,929	$10,313
Cash Balance		**$7,787**	**$7,714**	**$15,299**	**$16,859**	**$20,932**	**$16,399**	**$9,062**	**$287**	**($4,404)**	**($4,782)**	**$8,147**	**$18,460**

Monthly Balance Sheet Table

Pro Forma Balance Sheet													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Assets	Starting Balances												
Current Assets													
Cash	$6,500	$7,787	$7,714	$15,299	$16,859	$20,932	$16,399	$9,062	$287	($4,404)	($4,782)	$8,147	$18,460
Accounts Receivable	$0	$7,250	$10,633	$15,950	$10,633	$20,783	$10,633	$21,750	$13,050	$19,333	$21,750	$33,833	$28,033
Inventory	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Current Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Current Assets	$6,500	$15,037	$18,347	$31,249	$27,493	$41,715	$27,032	$30,812	$13,337	$14,929	$16,968	$41,980	$46,493
Long-term Assets													
Long-term Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Accumulated Depreciation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Long-term Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Assets	$6,500	$15,037	$18,347	$31,249	$27,493	$41,715	$27,032	$30,812	$13,337	$14,929	$16,968	$41,980	$46,493
Liabilities and Capital		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Current Liabilities													
Accounts Payable	$0	$6,183	$7,460	$11,262	$7,079	$13,005	$12,422	$15,892	$9,670	$14,163	$15,892	$24,534	$20,386
Current Borrowing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Current Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Current Liabilities	$0	$6,183	$7,460	$11,262	$7,079	$13,005	$12,422	$15,892	$9,670	$14,163	$15,892	$24,534	$20,386
Long-term Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Liabilities	$0	$6,183	$7,460	$11,262	$7,079	$13,005	$12,422	$15,892	$9,670	$14,163	$15,892	$24,534	$20,386
Paid-in Capital	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
Retained Earnings	($43,500)	($43,500)	($43,500)	($43,500)	($43,500)	($43,500)	($43,500)	($43,500)	($43,500)	($43,500)	($43,500)	($43,500)	($43,500)
Earnings	$0	$2,354	$4,387	$13,487	$13,914	$22,210	$8,110	$8,421	($2,832)	($5,734)	($5,424)	$10,946	$19,608
Total Capital	$6,500	$8,854	$10,887	$19,987	$20,414	$28,710	$14,610	$14,921	$3,668	$766	$1,076	$17,446	$26,108
Total Liabilities and Capital	$6,500	$15,037	$18,347	$31,249	$27,493	$41,715	$27,032	$30,812	$13,337	$14,929	$16,968	$41,980	$46,493
Net Worth	**$6,500**	**$8,854**	**$10,887**	**$19,987**	**$20,414**	**$28,710**	**$14,610**	**$14,921**	**$3,668**	**$766**	**$1,076**	**$17,446**	**$26,108**

Veterinarians

PRINTER-FRIENDLY

Summary | What They Do | Work Environment | How to Become One | Pay | Job Outlook | State & Area Data | Similar Occupations | More Info

Summary



Employment of veterinarians is projected to grow 9 percent from 2025 to 2035, much faster than the average for all occupations.

About 3,100 openings for veterinarians are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

State & Area Data

Explore resources for employment and wages by state and area for veterinarians.

Similar Occupations

Compare the job duties, education, job growth, and pay of veterinarians with similar occupations.

More Information, Including Links to O*NET

Learn more about veterinarians by visiting additional resources, including O*NET, a source on key characteristics of workers and occupations.

What They Do ->

What Veterinarians Do



Veterinarians use x rays to diagnose animals.

Veterinarians care for the health of animals and work to protect public health. They diagnose, treat, and research medical conditions and diseases of pets, livestock, and other animals.

Duties

Veterinarians typically do the following:

- Examine animals to assess their health and diagnose problems
- Treat and dress wounds
- Perform surgery on animals
- Test for and vaccinate against diseases
- Operate medical equipment, such as x-ray machines
- Advise animal owners about general care, medical conditions, and treatments
- Prescribe medication
- Euthanize animals

Veterinarians treat the injuries and illnesses of pets and other animals with a variety of medical equipment, including surgical tools and x-ray and ultrasound machines. They provide treatment for animals that is similar to the services a physician provides to humans.

The following are examples of types of veterinarians:

Companion animal veterinarians treat pets and generally work in private clinics and hospitals. They most often care for cats and dogs, but they also treat other pets, such as birds, ferrets, and rabbits. These veterinarians diagnose and provide treatment for animal health problems; consult with animal owners about preventive healthcare; and carry out medical and surgical procedures, such as vaccinations, dental work, and setting fractures.

Food animal veterinarians work with farm animals such as pigs, cattle, and sheep, which are raised to be food sources. They spend their time visiting farms and ranches to treat ill and injured animals and to test for and vaccinate against disease. They may advise farm owners or managers about feeding, housing, and general health practices.

Food safety and inspection veterinarians inspect and test livestock and animal products for major animal diseases. They also provide vaccines to treat animals, enhance animal welfare, conduct research to improve animal health, and enforce government food safety regulations. They design and administer animal and public health programs to prevent and control diseases transmissible among animals and between animals and people.

<- Summary

Work Environment ->

Work Environment



Most veterinarians work in veterinary clinics.

Veterinarians held about 91,100 jobs in 2025. Some of the largest employers of veterinarians were as follows:

Veterinary services	83%
Self-employed workers	7
Government, excluding state and local education and hospitals	2
Educational services; state, local, and private	2
Social advocacy organizations	1

Most veterinarians work in private clinics and hospitals. Others travel to farms or work in settings such as laboratories, classrooms, or zoos.

Veterinarians who treat horses or food animals travel between their offices and farms and ranches. They work outdoors in all kinds of weather and may have to perform surgery, often in remote locations.

Veterinarians who work in food safety and inspection travel to farms, slaughterhouses, and food-processing plants to inspect the health of animals and to ensure that the facility follows safety protocols.

The work can be emotionally stressful, as veterinarians care for abused animals, euthanize sick ones, and offer support to the animals' anxious owners. Working on farms and ranches, in slaughterhouses, or with wildlife can also be physically demanding.

Injuries and Illnesses

When working with animals that are frightened or in pain, veterinarians risk being bitten, kicked, and scratched. In addition, veterinarians working with diseased animals risk being infected by the disease.

Work Schedules

Most veterinarians work full time, often working more than 40 hours per week. Some work nights or weekends, and they may have to respond to emergencies outside of scheduled work hours.

<- What They Do

How to Become One ->

How to Become a Veterinarian



A veterinary medicine program generally takes 4 years to complete and includes classroom, laboratory, and clinical components.

Veterinarians must have a Doctor of Veterinary Medicine degree from an accredited veterinary college, as well as a state license.

Education

Veterinarians must complete a Doctor of Veterinary Medicine (DVM or VMD) degree at an accredited college of veterinary medicine. A veterinary medicine program generally takes 4 years to complete and includes classroom, laboratory, and clinical components.

Admission to veterinary programs is competitive. Applicants to veterinary school typically have a bachelor's degree in a field such as biology. Veterinary medical colleges typically require applicants to have taken many science classes, including biology, chemistry, and animal science. Most programs also require math, humanities, and social science courses.

Some veterinary medical colleges prefer candidates who have studied agriculture or have experience working with animals on a farm, at a stable, or in an animal shelter.

In veterinary medicine programs, students take courses on animal anatomy and physiology, as well as disease prevention, diagnosis, and treatment. Most programs include 3 years of classroom, laboratory, and clinical work. Students typically spend the final year of the 4-year program doing clinical rotations in a veterinary medical center or hospital.

Licenses, Certifications, and Registrations

Veterinarians must be licensed in order to practice in the United States. Licensing requirements vary by state, but prospective veterinarians in all states must complete an accredited veterinary program and pass a qualifying exam.

In addition to passing the national exam, most states require that veterinarians pass a state licensing exam. However, veterinarians employed by state or federal government may not need a state license, because government agencies differ in what they require.

Each state's exam covers its laws and regulations. Few states accept licenses from other states, so veterinarians usually must take exams for the states in which they want to be licensed. Information on state licensing board requirements is available from CareerOneStop.

Although certification is not mandatory, it allows workers to demonstrate competency in animal husbandry, health and welfare, and facility administration. Information on certifications is available from CareerOneStop.

Important Qualities

The following are examples of qualities that are important for these workers to perform their duties. For more information, visit the Employment Projections (EP) skills data page.

Communication skills. Strong communication skills are essential for veterinarians, who must be able to discuss their recommendations and explain treatment options to animal owners and give instructions to their staff.

Compassion. Veterinarians must be compassionate when working with animals and their owners. They must treat animals with kindness and respect, and they must be sensitive when dealing with the animal owners.

Decision-making skills. Veterinarians must decide the correct method for treating the injuries and illnesses of animals.

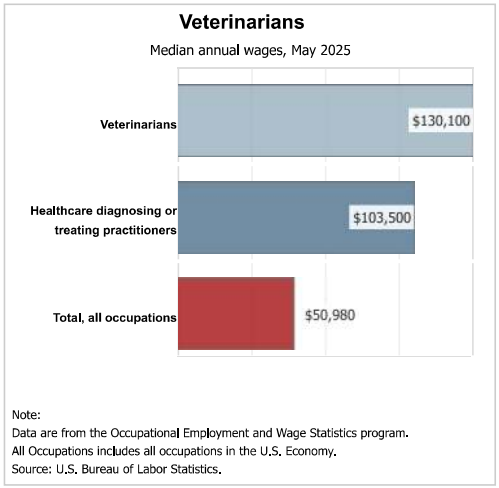
Manual dexterity. Veterinarians must control their hand movements and be precise when treating injuries and performing surgery.

Problem-solving skills. Veterinarians need strong problem-solving skills because they must figure out what is ailing animals. Those who test animals to determine the effects of drug therapies also need excellent diagnostic skills.

<- Work Environment

Pay ->

Pay



The median annual wage for veterinarians was $130,100 in May 2025. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than $73,920, and the highest 10 percent earned more than $215,700.

In May 2025, the median annual wages for veterinarians in some of the top industries in which they worked were as follows:

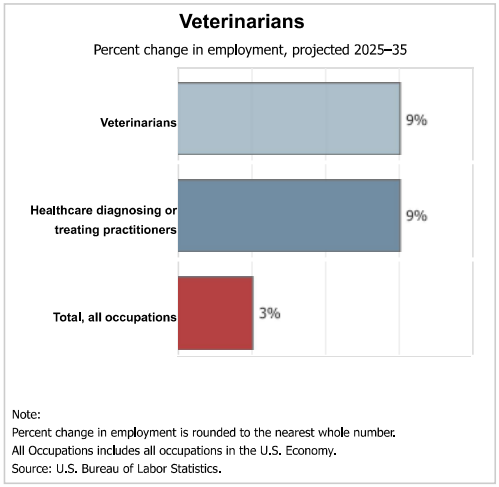
Social advocacy organizations	$131,760
Veterinary services	129,990
Educational services; state, local, and private	121,890
Government, excluding state and local education and hospitals	115,210

Most veterinarians work full time, often working more than 40 hours per week. Some work nights or weekends, and they may have to respond to emergencies outside of scheduled work hours.

<- How to Become One

Job Outlook ->

Job Outlook



Employment of veterinarians is projected to grow 9 percent from 2025 to 2035, much faster than the average for all occupations.

About 3,100 openings for veterinarians are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

Employment

Increases in consumers' pet-related spending, expanding treatment options, and a growing, aging pet population are expected to drive employment growth of veterinarians.

Veterinary medicine has advanced considerably. Today's veterinarians are able to offer many services that are comparable to healthcare for humans, including more complicated procedures such as cancer treatments and kidney transplants.

Employment projections data for veterinarians, 2025–35

Veterinarians

Note:
Employment subcategories do not necessarily add to higher categories due to rounding.
Employment and projected employment change values are rounded to the nearest 100 or percent.
Data is unavailable for values denoted with a "—".
Source: U.S. Bureau of Labor Statistics.

SOC Code:
29-1131

Employment, 2025:
91,100

Projected Employment, 2035:
99,600

Change, 2025–35 (Percent):
9

Change, 2025–35 (Numeric):
8,600

Employment By Industry:
Get data

Note:
Employment subcategories do not necessarily add to higher categories due to rounding.
Employment and projected employment change values are rounded to the nearest 100 or percent.
Data is unavailable for values denoted with a "—".
Source: U.S. Bureau of Labor Statistics.

<- Pay

State & Area Data ->

State & Area Data

Occupational Employment and Wage Statistics (OEWS)

The Occupational Employment and Wage Statistics (OEWS) program produces employment and wage estimates annually for over 800 occupations. These estimates are available for the nation as a whole, for individual states, and for metropolitan and nonmetropolitan areas. The link below goes to OEWS data maps for employment and wages by state and area. Use the dropdown boxes to select an occupation.

Occupational Employment and Wage Statistics (OEWS) Profiles

Projections Central

Occupational employment projections are developed for all states by Labor Market Information (LMI) or individual state Employment Projections offices. All state projections data are available at https://projectionscentral.org. Information on this site allows projected employment growth for an occupation to be compared among states or to be compared within one state. In addition, states may produce projections for areas; there are links to each state's websites where these data may be retrieved.

CareerOneStop

CareerOneStop includes hundreds of occupational profiles with data available by state and metro area. There are links in the left-hand side menu to compare occupational employment by state and occupational wages by local area or metro area. There is also a salary info tool to search for wages by zip code.

<- Job Outlook

Similar Occupations ->

Similar Occupations

This table shows a list of occupations with job duties that are similar to those of veterinarians.

Agricultural and Food Scientists

Job Duties:
Agricultural and food scientists research ways to improve the efficiency, quality, and safety of agricultural and food production establishments.

Entry-Level Education:
Bachelor's degree

2025 Median Pay:
$81,970

Animal Care and Service Workers

Job Duties:
Animal care and service workers attend to or train animals.

Entry-Level Education:
High school diploma or equivalent

2025 Median Pay:
$35,530

Dentists

Job Duties:
Dentists diagnose and treat problems with patients' teeth, gums, and related parts of the mouth.

Entry-Level Education:
Doctoral or professional degree

2025 Median Pay:
$176,110

Medical Scientists

Job Duties:

Medical scientists conduct research aimed at improving overall human health.

Entry-Level Education:
Doctoral or professional degree

2025 Median Pay:
$103,410

Microbiologists

Job Duties:
Microbiologists study microorganisms such as bacteria, algae, and fungi.

Entry-Level Education:
Bachelor's degree

2025 Median Pay:
$87,990

Optometrists

Job Duties:
Optometrists diagnose, manage, and treat conditions and diseases of the human eye and visual system, including examining eyes and prescribing corrective lenses.

Entry-Level Education:
Doctoral or professional degree

2025 Median Pay:
$136,570

Physicians and Surgeons

Job Duties:
Physicians and surgeons diagnose and treat injuries or illnesses and address health maintenance.

Entry-Level Education:
Doctoral or professional degree

2025 Median Pay:
$275,930

Veterinary Assistants and Laboratory Animal Caretakers

Job Duties:
Veterinary assistants and laboratory animal caretakers handle routine animal care and help scientists, veterinarians, and others with their daily tasks.

Entry-Level Education:
High school diploma or equivalent

2025 Median Pay:
$38,150

Veterinary Technologists and Technicians

Job Duties:
Veterinary technologists and technicians do medical tests that help diagnose animals' injuries and illnesses.

Entry-Level Education:
Associate's degree

2025 Median Pay:
$47,380

Zoologists and Wildlife Biologists

Job Duties:
Zoologists and wildlife biologists study animals, those both in captivity and in the wild, and how they interact with their ecosystems.

Entry-Level Education:
Bachelor's degree

2025 Median Pay:
$76,780

<- State & Area Data

More Info ->

Contacts for More Information

For information about certifications, visit CareerOneStop.

For information about state licensing board requirements, visit CareerOneStop.

O*NET

Veterinarians

<- Similar Occupations

SUGGESTED CITATION:

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Veterinarians, at https://www.bls.gov/ooh/healthcare/veterinarians.htm (visited *August 27, 2026*).

Last modified date: August 27, 2026

U.S. BUREAU OF LABOR STATISTICS Occupational Outlook Handbook Office of Employment and Unemployment Statistics Suitland Federal Center Floor 3 4600 Silver Hill Road Washington, DC 20212-0002

Telephone: 202-691-5700_ www.bls.gov/ooh Contact OOH

Agricultural and Food Scientists

Summary



Job Outlook

Overall employment of agricultural and food scientists is projected to grow 6 percent from 2025 to 2035, faster than the average for all occupations.

About 2,700 openings for agricultural and food scientists are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

State & Area Data

Explore resources for employment and wages by state and area for agricultural and food scientists.

Similar Occupations

Compare the job duties, education, job growth, and pay of agricultural and food scientists with similar occupations.

More Information, Including Links to O*NET

Learn more about agricultural and food scientists by visiting additional resources, including O*NET, a source on key characteristics of workers and occupations.

What They Do ->

What Agricultural and Food Scientists Do



Agricultural and food scientists may observe the production of field crops and farm animals so that they can research solutions to problems.

Agricultural and food scientists research ways to improve the efficiency, quality, and safety of agricultural and food production establishments.

Duties

Agricultural and food scientists typically do the following:

- Conduct research to improve the productivity and quality of field crops and farm animals
- Develop ways to increase efficiency of resources for crop production
- Create new food products and develop new and better ways to safely process, package, and deliver them
- Develop new and sustainable methods of soil and resource management
- Communicate research findings and other technical information to a variety of audiences, including scientists, food producers, and consumers
- Travel between facilities to oversee the implementation of new projects
- Ensure compliance with regulations and safety standards

Agricultural and food scientists work to maintain and expand the nation's food supply. Some conduct research into the biological and chemical processes by which crops and livestock grow. Others study ways to improve the quality, quantity, and safety of agricultural products. In addition, they often lead teams of technicians or students who help in their research.

The following are types of agricultural and food scientists:

Animal scientists typically conduct research on livestock. With a focus on food production, these scientists explore animal genetics, nutrition, reproduction, diseases, growth, and development. They work to develop efficient ways to produce and process meat, poultry, eggs, and milk, and may crossbreed animals to improve certain characteristics. They also may advise farmers on issues that affect livestock, such as best practices for upgrading housing, lowering death rates, and increasing growth rates.

Food scientists and technologists study the basic elements of food. They analyze the nutritional content of food, discover new food sources, and research ways to make processed foods safe and healthy. Food technologists generally work in product development, applying findings from food science research to develop new or better ways of selecting, preserving, processing, packaging, and distributing food. Some food scientists use advanced analytical techniques to detect and quantify levels of contaminants in food. Other food scientists enforce government regulations, inspecting food-processing areas to ensure that they are compliant with sanitation, waste management, and food safety standards.

Plant and soil scientists work to improve crop yields and the productivity of soil through crop breeding, soil management, and controlling pests and weeds. This may include conservation of soil and selecting traits to increase adaptability to changing environmental conditions. Because plant and soil sciences are closely related to environmental science, people trained in these fields also work to ensure environmental quality and effective land use.

Agricultural and food scientists may work in a variety of locations, including food production companies, farms, processing plants, universities, pharmaceutical companies, or the federal government. They spend their time in a laboratory, where they do tests and experiments, or in the field, where they take samples or assess overall conditions. Their research often involves improvements in food quality, animal or soil health, animal safety, food and crop production, or inspection standards. Agricultural and food scientists may present their research findings in peer-reviewed journals or other publications.

Agricultural and food scientists who work in universities may write grants to various organizations to get funding for their research. They also supervise student researchers and may teach lectures related to their field of expertise. For more information on professors who teach agricultural and food science at universities, see the profile on postsecondary teachers.

<-- Summary

Work Environment -->

Work Environment



Agricultural and food scientists may work with animals.

Agricultural and food scientists held about 37,400 jobs in 2025. Employment in the detailed occupations that make up agricultural and food scientists was distributed as follows:

Soil and plant scientists	19,900
Food scientists and technologists	14,100
Animal scientists	3,400

Some of the largest employers of agricultural and food scientists were as follows:

Food manufacturing	18%
Research and development in the physical, engineering, and life sciences	10
Colleges, universities, and professional schools; state	10
Crop production	9
Government, excluding state and local education and hospitals	9

Agricultural and food scientists work in laboratories, in offices, and in the field. They may spend their time studying data and reports. Fieldwork includes visits to farms or processing plants.

When visiting or working in a food or animal production facility, agricultural and food scientists must follow biosecurity measures, wear suitable clothing, and tolerate the environment associated with food production processes. This environment may include noise associated with large production machinery, hot or cold temperatures associated with food production or storage, and close proximity to animal byproducts. Agricultural and food scientists may need to wear a face mask, lab coat, gloves, eye protection, or other personal protective equipment (PPE) depending on the environment.

Certain positions may require travel—either domestic, international, or both. The amount of travel can vary widely.

Work Schedules

Most agricultural and food scientists work full time.

<- What They Do

How to Become One ->

How to Become an Agricultural or Food Scientist



Agricultural and food scientists use data analysis skills to observe the results of their studies.

Agricultural and food scientists typically need at least a bachelor's degree in animal science, food science, plant biology, or a related field. Employers may prefer or require a master's or doctoral degree.

Education

Undergraduate coursework for agricultural and food scientists varies by specialty, but common fields of degree include biology, physical science, and agriculture. Students may choose to major in a specific concentration within agriculture, such as animal, crop, or food science. Degrees in related sciences, such as biology, chemistry, and physics, or in a related engineering specialty also may qualify people for many agricultural science jobs. Every state has at least one land-grant college that offers agricultural science degrees. Many other colleges and universities also offer agricultural science degrees or related courses.

Many people with bachelor's degrees in agricultural sciences find work in related jobs rather than becoming an agricultural or food scientist. For example, a bachelor's degree in agricultural science is a useful background for farming, ranching, agricultural inspection, farm credit institutions, or other companies in the agrifood system. Combined with coursework in business, agricultural and food science could be a good background for managerial jobs in farm-related or ranch-related businesses. For more information, see the profile on farmers, ranchers, and other agricultural managers.

Some agricultural and food scientists earn advanced degrees, and a master's or doctoral degree may be required for some jobs. For example, a Ph.D. may be required for some research positions in specialized topics. Advanced research topics include genetics, animal reproduction, agronomy, and biotechnology, among others. Advanced coursework also emphasizes statistical analysis and experiment design, which are important as Ph.D. candidates begin their research and work with big datasets. During graduate school, there is additional emphasis on lab work and original research, in which prospective agricultural and food scientists conduct experiments and sometimes supervise undergraduates.

Licenses, Certifications, and Registrations

Some agricultural and food scientists may need a license, particularly those who plan to work in plant and soil sciences. Licensing requirements vary by state but generally include holding a bachelor's degree with a certain number of credit hours in either plant or soil science, working under a licensed scientist for a certain number of years, and passing an exam. Licensed plant and soil scientists may require additional education credits or training every few years to maintain their licenses. Information on state licensing board requirements is available from CareerOneStop.

Certifications are generally not required for agriculture and food scientists, but they can be useful in advancing one's career. Information on certifications is available from CareerOneStop.

Other Experience

Internships are highly recommended for prospective agricultural and food scientists. These internships may lead to opportunities for full-time employment and provide students with hands-on experience.

Important Qualities

The following are examples of qualities that are important for these workers to perform their duties. For more information, visit the Employment Projections (EP) skills data page.

Communication skills. Agricultural and food scientists must explain their studies both verbally and in writing, including what they were trying to learn, the methods they used, what they found, and what they think the implications of their findings are. They must also communicate well when working with others, including technicians and student assistants.

Critical-thinking skills. Agricultural and food scientists must use their expertise to determine the best way to answer a specific research question.

Data-analysis skills. Agricultural and food scientists collect data using a variety of methods, including quantitative surveys. They must then apply standard data analysis techniques to understand the data and get the answers to the questions they are studying.

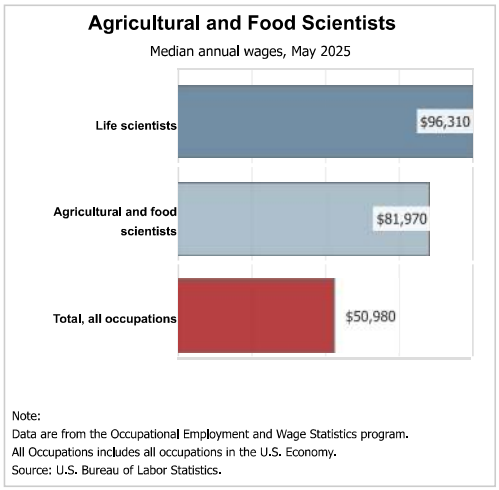
Math skills. Agricultural and food scientists must have a sound grasp of mathematical concepts.

Detail-oriented skills. Agricultural and food scientists conduct experiments that require precise observation of samples and other data. Any mistake could lead to inconclusive or inaccurate results.

<- Work Environment

Pay ->

Pay



The median annual wage for agricultural and food scientists was $81,970 in May 2025. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than $48,730, and the highest 10 percent earned more than $142,300.

Median annual wages for agricultural and food scientists in May 2025 were as follows:

Food scientists and technologists	$88,720
Soil and plant scientists	78,850
Animal scientists	68,940

In May 2025, the median annual wages for agricultural and food scientists in some of the top industries in which they worked were as follows:

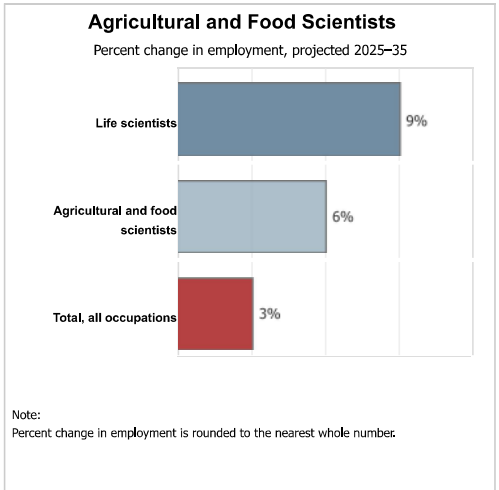
Research and development in the physical, engineering, and life sciences	$93,950
Food manufacturing	86,020
Government, excluding state and local education and hospitals	80,690
Colleges, universities, and professional schools; state	66,100

Most agricultural and food scientists work full time.

<- How to Become One

Job Outlook ->

Job Outlook



All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics.

Overall employment of agricultural and food scientists is projected to grow 6 percent from 2025 to 2035, faster than the average for all occupations.

About 2,700 openings for agricultural and food scientists are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

Employment

Employment of agricultural and food scientists is projected to grow as research into agricultural production methods and techniques continues. The need to address challenges such as pests, disease, and changing climate and weather patterns is expected to create jobs for these workers. Demand for agricultural products is also expected to contribute to employment growth.

Employment projections data for agricultural and food scientists, 2025–35

Agricultural and food scientists

SOC Code:
19-1010

Employment, 2025:
37,400

Projected Employment, 2035:
39,800

Change, 2025–35 (Percent):
6

Change, 2025–35 (Numeric):
2,400

Employment By Industry:
Get data

Animal scientists

SOC Code:
19-1011

Employment, 2025:
3,400

Projected Employment, 2035:
3,600

Change, 2025–35 (Percent):
6

Change, 2025–35 (Numeric):
200

Employment By Industry:
Get data

Food scientists and technologists

SOC Code:
19-1012

Employment, 2025:
14,100

Projected Employment, 2035:
14,900

Change, 2025–35 (Percent):
6

Change, 2025–35 (Numeric):
900

Employment By Industry:
Get data

Soil and plant scientists

SOC Code:
19-1013

Employment, 2025:

Note:
Employment subcategories do not necessarily add to higher categories due to rounding.
Employment and projected employment change values are rounded to the nearest 100 or percent.
Data is unavailable for values denoted with a "—".
Source: U.S. Bureau of Labor Statistics.

19,900

Projected Employment, 2035:
21,300

Change, 2025–35 (Percent):
7

Change, 2025–35 (Numeric):
1,300

Employment By Industry:
Get data

Note:
Employment subcategories do not necessarily add to higher categories due to rounding.
Employment and projected employment change values are rounded to the nearest 100 or percent.
Data is unavailable for values denoted with a "—".
Source: U.S. Bureau of Labor Statistics.

<- Pay

State & Area Data ->

State & Area Data

Occupational Employment and Wage Statistics (OEWS)

The Occupational Employment and Wage Statistics (OEWS) program produces employment and wage estimates annually for over 800 occupations. These estimates are available for the nation as a whole, for individual states, and for metropolitan and nonmetropolitan areas. The link below goes to OEWS data maps for employment and wages by state and area. Use the dropdown boxes to select an occupation.

Occupational Employment and Wage Statistics (OEWS) Profiles

Projections Central

Occupational employment projections are developed for all states by Labor Market Information (LMI) or individual state Employment Projections offices. All state projections data are available at https://projectionscentral.org. Information on this site allows projected employment growth for an occupation to be compared among states or to be compared within one state. In addition, states may produce projections for areas; there are links to each state's websites where these data may be retrieved.

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<- Job Outlook

Similar Occupations ->

Similar Occupations

This table shows a list of occupations with job duties that are similar to those of agricultural and food scientists.

Agricultural and Food Science Technicians

Job Duties:
Agricultural and food science technicians help scientists with testing and research related to plants, animals, fibers, and food and beverage products.

Entry-Level Education:
Associate's degree

2025 Median Pay:
$51,160

Biochemists and Biophysicists

Job Duties:
Biochemists and biophysicists study the chemical and physical principles of living things and of biological processes.

Entry-Level Education:
Doctoral or professional degree

2025 Median Pay:
$127,410

Biological Technicians

Job Duties:
Biological technicians assist biological and medical scientists with tasks such as laboratory setup, data collection, and observation.

Entry-Level Education:
Bachelor's degree

2025 Median Pay:
$57,510

Chemical Technicians

Job Duties:
Chemical technicians conduct laboratory tests to help scientists analyze the properties of materials.

Entry-Level Education:
Associate's degree

2025 Median Pay:

$60,390

Conservation Scientists and Foresters

Job Duties:
Conservation scientists and foresters manage the land quality of forests, parks, rangelands, and other natural resources.

Entry-Level Education:
Bachelor's degree

2025 Median Pay:
$73,920

Environmental Scientists and Specialists

Job Duties:
Environmental scientists and specialists conduct research or investigations to protect the environment or human health.

Entry-Level Education:
Bachelor's degree

2025 Median Pay:
$82,220

Farmers, Ranchers, and Other Agricultural Managers

Job Duties:
Farmers, ranchers, and other agricultural managers run establishments that produce crops, livestock, and dairy products.

Entry-Level Education:
High school diploma or equivalent

2025 Median Pay:
$89,900

Microbiologists

Job Duties:
Microbiologists study microorganisms such as bacteria, algae, and fungi.

Entry-Level Education:
Bachelor's degree

2025 Median Pay:
$87,990

Veterinarians

Job Duties:
Veterinarians care for the health of animals and work to protect public health.

Entry-Level Education:
Doctoral or professional degree

2025 Median Pay:
$130,100

Zoologists and Wildlife Biologists

Job Duties:
Zoologists and wildlife biologists study animals, those both in captivity and in the wild, and how they interact with their ecosystems.

Entry-Level Education:
Bachelor's degree

2025 Median Pay:
$76,780

<- State & Area Data

More Info ->

Contacts for More Information

For information from related governmental agencies, visit

U.S. Food and Drug Administration

Smithsonian Institution

U.S. Department of Agriculture

National Institutes of Health

For information about state licensing board requirements and certifications, visit CareerOneStop.

O*NET

Animal Scientists

Food Scientists and Technologists

Soil and Plant Scientists

<- Similar Occupations

SUGGESTED CITATION:

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Agricultural and Food Scientists, at https://www.bls.gov/ooh/life-physical-and-social-science/agricultural-and-food-scientists.htm (visited *October 07, 2026*).

Last modified date: August 27, 2026

O*NET OnLine

Veterinarians

29-1131.00

Bright Outlook | Updated 2026

Diagnose, treat, or research diseases and injuries of animals. Includes veterinarians who conduct research and development, inspect livestock, or care for pets and companion animals.

Sample of reported job titles: Companion Animal Practitioner, Doctor of Veterinary Medicine (DVM), Emergency Veterinarian (Emergency Vet), Large Animal Veterinarian (Large Animal Vet), Mixed Animal Veterinarian (Mixed Animal Vet), Small Animal Veterinarian (Small Animal Vet), Veterinary Medicine Doctor (DVM), Veterinary Surgeon (Vet Surgeon), Veterinary Surgical Specialist (Vet Surgical Specialist), Zoo Veterinarian (Zoo Vet)

Summary | Details | Custom | Easy Read | Veterans | Español

Contents

Occupation-Specific Information

Tasks

5 of 21 displayed

- Treat sick or injured animals by prescribing medication, setting bones, dressing wounds, or performing surgery.
- Inoculate animals against various diseases, such as rabies or distemper.
- Examine animals to detect and determine the nature of diseases or injuries.
- Collect body tissue, feces, blood, urine, or other body fluids for examination and analysis.
- Operate diagnostic equipment, such as radiographic or ultrasound equipment, and interpret the resulting images.

Occupational Requirements

Work Activities

5 of 26 displayed

- **Making Decisions and Solving Problems —** Analyzing information and evaluating results to choose the best solution and solve problems.
- **Getting Information —** Observing, receiving, and otherwise obtaining information from all relevant sources.

- **Updating and Using Relevant Knowledge —** Keeping up-to-date technically and applying new knowledge to your job.
- **Identifying Objects, Actions, and Events** — Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- **Documenting/Recording Information —** Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.

Detailed Work Activities

5 of 25 displayed

- Operate on patients to treat conditions.
- Prescribe medications.
- Treat acute illnesses, infections, or injuries.
- Immunize patients.
- Examine patients to assess general physical condition.

Work Context

5 of 35 displayed

- **Face-to-Face Discussions with Individuals and Within Teams —** 100% responded "Every day."
- **Telephone Conversations —** 97% responded "Every day."
- **Indoors, Environmentally Controlled —** 96% responded "Every day."
- **Contact With Others —** 86% responded "Constant contact with others."
- **Work With or Contribute to a Work Group or Team —** 82% responded "Extremely important."

Experience Requirements

Job Zone

Title	Job Zone Five: Extensive Preparation Needed
Education	Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).
Related Experience	Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.
Job Training	Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.
Job Zone Examples	These occupations often involve coordinating, training, supervising, or managing the activities of others to accomplish goals. Very advanced communication and organizational skills are required. Examples include

pharmacists, lawyers, astronomers, biologists, clergy, physician assistants, and veterinarians.

SVP Range (8.0 and above)

Training & Credentials

State training Select a State Go

Local training ZIP Code Go

Certifications Find certifications nationwide

State licenses Select a State Go

Apprenticeship Opportunities

Start your career and build your skillset. Visit **Apprenticeship.gov** to learn about opportunities related to this occupation.

Worker Requirements

Software Skills

5 of 9 displayed

- **Data base user interface and query software** — IDEXX Laboratories IDEXX VPM; Microsoft Access
- **Electronic mail software** — Microsoft Outlook
- **Medical software** — American Data Systems PAWS Veterinary Practice Management; InformaVet ALIS-VET; Sneakers Software DVMax Practice; Vetport
- **Presentation software** — Microsoft PowerPoint
- **Spreadsheet software** — Microsoft Excel

Hot Technologies are requirements most frequently included across all employer job postings.
See all 7 Hot Technologies for this occupation.

Essential Skills

5 of 10 displayed

- **Active Listening** — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** — Understanding written sentences and paragraphs in work-related documents.

- **Active Learning —** Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Critical Thinking —** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
- **Science —** Using scientific rules and methods to solve problems.

Transferable Skills

5 of 9 displayed

- **Complex Problem Solving** — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- **Judgment and Decision Making —** Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- **Service Orientation —** Actively looking for ways to help people.
- **Social Perceptiveness —** Being aware of others' reactions and understanding why they react as they do.
- **Time Management —** Managing one's own time and the time of others.

Knowledge

5 of 10 displayed

- **Biology —** Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.
- **Medicine and Dentistry —** Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Customer and Personal Service —** Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **English Language —** Knowledge of the structure and content of the English language including the meaning and spelling of words, and rules of composition and grammar.
- **Mathematics —** Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Education

How much education does a new hire need to perform a job in this occupation? Respondents said:

79%	Doctoral degree required
12%	Post-doctoral training required
9%	Professional degree required

Worker Characteristics

Abilities

5 of 23 displayed

- **Oral Comprehension** — The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** — The ability to communicate information and ideas in speaking so others will understand.
- **Written Comprehension** — The ability to read and understand information and ideas presented in writing.
- **Deductive Reasoning** — The ability to apply general rules to specific problems to produce answers that make sense.
- **Inductive Reasoning** — The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).

Interests

All 2 displayed

Interest code: **IR**

Want to discover your interests? Take the **O*NET Interest Profiler**.

- **Investigative** — Work involves studying and researching non-living objects, living organisms, disease or other forms of impairment, or human behavior. Investigative occupations are often associated with physical, life, medical, or social sciences, and can be found in the fields of humanities, mathematics/statistics, information technology, or health care service.
  - **Life Science** — Work involves studying and researching living organisms through scientific disciplines such as biology, botany, zoology, microbiology, physiology, biochemistry, or zoology.
  - **Medical Science** — Work involves studying and researching the causes, nature, effects, and treatments of disease or other forms of impairment or illness.
  - **Health Care Service** — Work involves providing health care services to individuals to include the diagnosis, prevention, or treatment of diseases and other forms of illness or impairment.
- **Realistic** — Work involves designing, building, or repairing of equipment, materials, or structures, engaging in physical activity, or working outdoors. Realistic occupations are often associated with engineering, mechanics and electronics, construction, woodworking, transportation, machine operation, agriculture, animal services, physical or manual labor, athletics, or protective services.
  - **Animal Service** — Work involves feeding, grooming, exercising, or otherwise providing care to promote and maintain the well-being of pets and other animals in settings such as kennels, animal shelters, and zoos.

Work Styles

5 of 10 displayed

- **Perseverance —** A tendency to exhibit determination and resolve to perform or complete tasks in the face of difficult circumstances or obstacles at work.
- **Empathy —** A tendency to show concern for others and be sensitive to others' needs and feelings at work.
- **Stress Tolerance —** A tendency to cope and function effectively in stressful situations at work.
- **Self-Control** — A tendency to remain calm and composed and to manage emotions effectively in response to criticism or difficult situations at work.
- **Achievement Orientation —** A tendency to establish and maintain personally challenging work-related goals, set high work-related standards, and exert high effort toward meeting those goals and standards.

Workforce Characteristics

Wages & Employment Trends

Median wages (2025)	$62.55 hourly, $130,100 annual
State wages	Select a State Go
Local wages	ZIP Code Go
Employment (2025)	91,100 employees
Projected growth (2025-2035)	■■■■ Much faster than average (7% or higher)
Projected job openings (2025-2035)	3,100
State trends	Select a State Go
Top industries (2025)	Professional, Scientific, and Technical Services

Source: Bureau of Labor Statistics 2025 wage data and 2025-2035 employment projections. "Projected growth" represents the estimated change in total employment over the projections period (2025-2035). "Projected job openings" represent openings due to growth and replacement.

Job Openings on the Web

State job openings	Select a State Go
Local job openings	ZIP Code Go

More Information

Related Occupations

5 of 10 displayed

- 29-1229.01 Allergists and Immunologists
- 29-1214.00 Emergency Medicine Physicians
- 29-1222.00 Physicians, Pathologists
- 31-9096.00 Veterinary Assistants and Laboratory Animal Caretakers
- 29-2056.00 Veterinary Technologists and Technicians

Professional Associations

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

National Associations

5 of 14 displayed

- American Animal Hospital Association
- American Association of Bovine Practitioners
- American Association of Equine Practitioners
- American Association of Feline Practitioners
- American Association of Swine Veterinarians

Accreditation, Certification, & Unions

- American College of Veterinary Internal Medicine
- American College of Veterinary Surgeons

O*NET OnLine

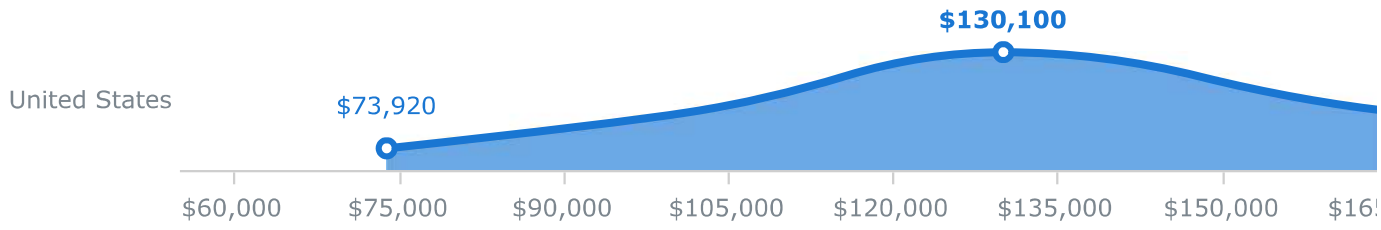
National Wages

29-1131.00 - Veterinarians Bright Outlook

Wages for state: Select a State Go

Wages near ZIP Code: Go

Annual Wages | Hourly Wages



In the United States:

- Workers on average earn **$130,100**.
- 10% of workers earn **$73,920 or less**.
- 10% of workers earn **$215,700 or more**.

Source: Bureau of Labor Statistics 2025 wage data.

Full Details

Save Table: XLSX CSV

Location	Annual Low (10%)	Annual Q_L (25%)	Annual Median (50%)	Annual Q_U (75%)	Annual High (90%)
United States	$73,920	$101,460	$130,100	$166,120	$215,700

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The site is secure.
The **https://** ensures that you are connecting to the official website and that any information you provide is encrypted and transmitted securely.

</>

FULL MENU

ALERT: FSIS Issues Public Health Alert for… See more details </recalls-alerts/fsis-issues-public-health-alert-ineligible-chicken-vienna-style-sausage-products>

Equivalence

Determining equivalence of a country's food safety inspection system is essential for protecting public health.

Process Overview

What is Equivalence?

Equivalence is the process by which the Food Safety and Inspection Service (FSIS) determines whether a country's food safety inspection system achieves an appropriate level of public health protection as applied domestically by FSIS in the United States (U.S.). Additionally, the foreign food safety inspection system is to provide standards equivalent to that of the FSIS to ensure other non-food safety requirements (such

as humane handling, accurate labeling, and assurance that meat, poultry, or egg products are not economically adulterated) are met. The country is not required to develop and implement the same regulations or inspection procedures as FSIS, but rather the country must objectively demonstrate how its laws, regulations and procedures meet an equivalent level of public health protection to FSIS' inspection system. Countries wishing to become eligible to export meat, poultry, or egg products to the United States must demonstrate that they have a regulatory food safety inspection system that is equivalent to that of FSIS.

Equivalence Background

Determining equivalence of a country's food safety inspection system is essential for protecting public health. An equivalence determination of an exporting country's regulatory food safety inspection system for meat, poultry, or egg products is a prerequisite to import these products into the United States. FSIS is the U.S. Central Competent Authority (CCA) responsible for regulating and inspecting meat, poultry, and egg products. FSIS implements a process to make an equivalence determination to ensure that U.S. treaty obligations under the World Trade Organization's (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures <https://www.wto.org/english/tratop_e/sps_e/sps_e.htm> (SPS Agreement) are met. The SPS Agreement sets out the basic international rules for food safety and animal and plant health standards.

To ensure that meat, poultry, or egg products are safe, wholesome, unadulterated, and properly labeled and packaged, FSIS implements the Federal Meat Inspection Act </policy/food-safety-acts/federal-meat-inspection-act> (FMIA), Poultry Products Inspection Act </policy/food-safety-acts/poultry-products-inspection-act> (PPIA), Egg Products Inspection Act </policy/food-safety-acts/egg-products-inspection-act> (EPIA), Humane Methods of Slaughter Act (HMSA), and regulations under Title 9 Code of Federal Regulations (CFR) <https://www.govinfo.gov/app/collection/cfr/> Parts 300-590. FSIS ensures that a

country's food safety inspection system addresses U.S. food safety regulatory-based objectives as set forth in the FMIA, PPIA, and EPIA. Food safety regulatory-based objectives are food safety goals for preventing the occurrence of an identified food safety hazard.

The criteria by which FSIS assesses the equivalence of a country's food safety inspection system can be found under Title 9 CFR 327.2 (for meat products), 557.2 (for Siluriformes fish and fish products), 381.196 (for poultry products), and 590.910 (for egg products).

Types of Equivalence Determinations

There are four types of equivalence determinations: (1) initial equivalence, (2) ongoing equivalence verification, (3) reinstatement of equivalence, and (4) individual sanitary measure (ISM) equivalence.

Types of Equivalence Determinations	Explanation About the Type of Equivalence Determination
(1) Initial equivalence	• For countries seeking to export meat, poultry, or egg products to the United States for the first time • FSIS evaluates a country's food safety inspection system to make an initial equivalence determination before the country can export products to the United States • FSIS publishes equivalence determinations through the *Federal Register* with requests for public comments

Types of Equivalence Determinations	Explanation About the Type of Equivalence Determination
(2) Ongoing equivalence verification	• For countries that have an equivalence determination and are exporting meat, poultry, or egg products to the United States • Countries are to maintain communication with FSIS concerning updates to their food safety inspection system
(3) Reinstatement of equivalence	• For countries that FSIS has previously determined to have an equivalent food safety inspection system but that stopped exporting to the United States for an extended period of time • FSIS reassesses the food safety inspection system before the country can export products to the United States again
(4) Individual sanitary measure	• For countries that have an equivalence determination and want to change a procedure in their food safety inspection system • FSIS assesses the new procedure before the country can implement the procedure for inspection of products intended for export to the United States

The Equivalence Process

The following sections on initial equivalence, ongoing equivalence verification, reinstatement of equivalence and individual sanitary measures describe FSIS' process for making an equivalence determination.

Initial Equivalence

The following six process steps briefly outline how an initial equivalence determination is made for a country wishing to export meat, poultry, or egg products to the United States for the first time:

1. Country submits a formal written request for initial equivalence to FSIS. The formal request can be submitted to FSIS' Office of International Coordination (OIC) at InternationalCoordination@usda.gov.
2. Country submits responses and supporting documentation to address food safety objectives in the Self-Reporting Tool (SRT) </sites/default/files/media_file/documents/self-reporting-tool_v2025-001.pdf>
3. FSIS reviews SRT responses and supporting documentation
4. FSIS conducts onsite verification audit(s)
5. FSIS issues public notification proposing to list a foreign country as eligible to export products to the United States in the *Federal Register*
6. FSIS considers public comments and other information and, if appropriate, issues a final determination of equivalence in the *Federal Register*; FSIS also responds to comments in that *Federal Register* notice.

The SRT is a questionnaire that provides an organized means for the country's government to demonstrate that its inspection system achieves an equivalent level of protection as applied domestically by FSIS in the United States.

The SRT is arranged into six components:

1. Government Oversight (e.g., Organization and Administration, Enforcement Authority, Government Inspection Personnel-Training/Staffing)
2. Government Verification of Food Safety and Other Consumer Protection Requirements (e.g., Humane Handling, Ante-mortem Inspection, Post-mortem Inspection, Product Standards and Labeling)
3. Government Sanitation Verification
4. Government Hazard Analysis and Critical Control Point (HACCP) System Verification
5. Government Chemical Residue Program
6. Government Microbiological Pathogen and Process Control Programs

For more information on the SRT and initial equivalence process, please refer to the "Additional Resources" section of this web page.

Ongoing Equivalence Verification

FSIS continuously evaluates and verifies the equivalence of an exporting country's food safety inspection system through a three-part process that includes: (1) document reviews, (2) verification audits, and (3) point-of-entry reinspection of meat, poultry, and egg products.

Part 1- Document Reviews

Countries are to submit the following for review *at least annually* **by May 18th**:

1. Either **(1)** updated SRT responses, or **(2)** confirmation to FSIS that the country's CCA has verified its previously submitted SRT responses and supporting documentation are accurate and complete;

2. An up-to-date list of all certified establishments eligible to export meat, poultry, or egg products the United States;
3. An updated official government chemical residue sampling and testing program, including the previous year's test results; and
4. An updated official government microbiological sampling and testing program, including the previous year's test results for the following: **(A)** Salmonella and Campylobacter in raw meat and poultry products; **(B)** Listeria monocytogenes (Lm) and Salmonella in ready-to-eat (RTE) meat, poultry, and egg products; **(C)** food contact surfaces for Lm in certified establishments that produce post-lethality exposed RTE meat and poultry products; and **(D)** Shiga toxin-producing Escherichia coli (STEC) in raw beef products.

Part 2 - Verification Audits

FSIS periodically conducts a verification audit of every eligible country's food safety inspection system to verify whether the country continues to maintain an equivalent inspection system.

Part 3 - Point-of-Entry Reinspection

All imported shipments of meat, poultry, and egg products that enter the United States are presented to FSIS for reinspection. FSIS checks every imported shipment for eligibility, certification, transportation damage, and labeling. The purpose of point-of-entry reinspection is to monitor the effectiveness of an eligible exporting country's food safety inspection system, not to assess the performance of an individual certified establishment.

For more information about ongoing equivalence verification, please refer to the "Additional Resources" section of this web page.

REINSTATEMENT OF EQUIVALENCE

The following five process steps briefly outline how a reinstatement of equivalence determination is made when a country wants to start exporting meat, poultry, or egg products again to the United States.

1. Country submits a formal written request for reinstatement of a prior equivalence determination to FSIS. The formal request can be submitted to FSIS' OIC at InternationalCoordination@usda.gov.
2. Country submits responses and supporting documentation to address food safety objectives in the SRT
   </sites/default/files/media_file/documents/self-reporting-tool_v2025-001.pdf>
3. FSIS reviews SRT responses and documentation
4. FSIS may conduct onsite verification audit(s)
5. FSIS notifies the country of the equivalence determination through official correspondence

NOTE: FSIS does not publish reinstatement of equivalence determinations in the *Federal Register* because equivalence for the food safety inspection system in the country has already been published.

For more information on reinstatement of equivalence, please refer to the "Additional Resources" section of this web page.

INDIVIDUAL SANITARY MEASURE

Eligible countries currently exporting meat, poultry, or egg products to the United States request an individual sanitary measure (ISM) when they want to change a procedure in their food safety inspection system. There are typically two reasons an eligible country may request an ISM equivalence determination:

1. The country wants to make a change to a procedure in its food safety inspection system that FSIS previously determined was equivalent.

2. FSIS has updated its U.S. domestic food safety procedures or requirements and identified that the procedures or requirements affect previous equivalence determinations for specific eligible countries.

The following four process steps briefly outline how an ISM equivalence determination is made:

1. Country submits a formal written request for an ISM to FSIS. The format request can be submitted to FSIS' OIC at InternationalCoordination@usda.gov.
2. Country submits updated responses and supporting documentation for the ISM through the SRT </sites/default/files/media_file/documents/self-reporting-tool_v2025-001.pdf>
3. FSIS reviews the updated SRT responses and supporting documentation
4. FSIS notifies the country of the ISM equivalence determination through official correspondence

For more information on individual sanitary measures, please refer to the "Additional Resources" section on this web page. Additionally, FSIS maintains a list of countries with significant, non-routine, finalized individual sanitary measures </sites/default/files/media_file/2022-06/ism-equivalence-determination-table.pdf>.

Additional Resources

- Self-Reporting Tool </sites/default/files/media_file/documents/self-reporting-tool_v2025-001.pdf>
  Contains questions regarding regulatory-focused food safety objectives that reflect the equivalence criteria used by FSIS to determine whether a country’s documented food safety inspection system is equivalent to the FSIS inspection system.

- FSIS Product Categorization (Import) <https://www.fsis.usda.gov/guidelines/2019-0010>
  Provides information about the listing of process categories on FSIS official foreign inspection certificates. It applies to official import inspection establishments and actions they may take to meet regulatory requirements for the identification of meat, poultry, and egg products certified for export to the United States. It relates to 9 CFR Part 327 and 9 CFR 417.2(b).
- FSIS Guidance for a Suggested Reporting Table for the Certified Establishment List <https://www.fsis.usda.gov/policy/fsis-directives-and-notices/guidelines/fsis-guidance-suggested-reporting-table-certified>
- FSIS Guidance for Foreign Countries: Suggested Reporting Tables for Official Government Chemical Residue Sampling Programs <https://www.fsis.usda.gov/guidelines/2019-0014>
- FSIS Guidance on Suggested Reporting Tables of the Government Microbiological Sampling and Testing Program <https://www.fsis.usda.gov/policy/fsis-directives-and-notices/guidelines/fsis-guidance-suggested-reporting-tables-government>
- FSIS Guidance for Foreign Countries: Summary of FSIS' Official Government Chemical Residue Sampling Program <https://www.fsis.usda.gov/guidelines/2019-0015>
  Provides a summary of FSIS' official government chemical residue sampling program.
- Summary of FSIS Government Microbiological Sampling Programs Frequencies <https://www.fsis.usda.gov/guidelines/2019-0016>
  Provides a summary of the sampling frequency of FSIS government microbiological testing, including a link to the current FSIS Annual Sampling Plan.
- FSIS Responses to the SRT <https://www.fsis.usda.gov/guidelines/2019-0017>
  Provides a model with FSIS' responses to the SRT that illustrates the level of detail FSIS needs in foreign country SRT responses to determine whether a country's food safety inspection system achieves an equivalent level of sanitary protection.

- Importing Products <https://www.fsis.usda.gov/inspection/import-export/import-guidance>
  FSIS is responsible for assuring that U.S. imported meat, poultry and egg products are safe, wholesome, unadulterated, and properly labeled and packaged.
- Inspection of Siluriformes (Imports) <https://www.fsis.usda.gov/inspection/inspection-programs/inspection-siluriformes>
  Provides information specific to the imports of Siluriformes fish and fish products.
- Laboratory Guidebooks and Methods <https://www.fsis.usda.gov/science-data/laboratories-procedures>
  These guidebooks contain current protocols for analytical tests required by FSIS for U.S. domestic regulatory activities on meat, poultry and egg products. They include the FSIS Microbiology Laboratory Guidebook <https://www.fsis.usda.gov/news-events/publications/microbiology-laboratory-guidebook>, the FSIS Analytical Chemistry Laboratory Guidebook <https://www.fsis.usda.gov/news-events/publications/chemistry-laboratory-guidebook>, and the FSIS Pathology Laboratory Guidebook <https://www.fsis.usda.gov/news-events/publications/pathology-laboratory-guidebook>.

Point-of-Contact Information

All communications concerning FSIS equivalence should be directed to the Office of International Coordination (OIC) at the contact information below. Communication must come from the country's Central Competent Authority (CCA).

Please address correspondence to:

United States Department of Agriculture
Food Safety and Inspection Service
Office of International Coordination
1400 Independence Avenue, SW

Room 3143, South Building
Washington, DC 20250
Phone: (202) 708-9543
Fax: (202) 690-3856
E-mail: InternationalCoordination@usda.gov

Equivalence Process Status

Table showing the status of countries' equivalence requests.

Download the Table </sites/default/files/media_file/2022-04/equivalence-status-chart.pdf>

Featured Resources



FSIS Payment Options & Information

Need to discuss billing or find out how to make a payment? FSIS accepts payments by mail and has three options for electronic and online payments.



Food Safety Assessments Tools

An important toolbox for identifying potential risks in the food production process and to document food safety assessments (FSAs) methodically.



Apply for Grant of Inspection

The steps and requirements for obtaining a Federal grant of inspection.

Learn More

</contact-us/payment-options-information>

Learn More

</inspection/compliance-guidance/food-safety-assessments-tools>

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</inspection/applygrant-inspection>

Last Updated: Sep 28, 2026

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Significant Guidance </inspection/compliance-guidance/significant-guidance>

Vulnerability Disclosure Policy <https://www.usda.gov/vulnerability-disclosure-policy>

Whistleblower Protection Coordinator

<https://usdaoig.oversight.gov/resources/whistleblower-protection-coordinator>

</>

USDA National Institute of Food and Agriculture

Food Safety Outreach Program (FSOP)

All Applicants Must Have an eRA Commons Account to Apply

This program is being managed in the eRA Grants Management System as part of NIFA's ongoing Grants Modernization Initiative (GMI). To apply for this program's NOFO(s), all applicants **must** have an eRA Commons account registered with their organization.

To learn more about acquiring an account or registering a new organization, please refer to the training in our eRA Reference Center.

Overview

NIFA's Food Safety Outreach Competitive Grant Program (FSOP) focuses on delivering customized training to community members via Community Outreach Projects and Collaborative Education and Training projects. The program supports developing grant writing and technical assistance resources. This includes on-farm and on-site training and/or technical assistance that focuses on pre- and post-harvest water testing and sampling, soil amendments, developing supply chain programs, and/or developing food safety plans.

Eligibility

Applications may be submitted by the following eligible applicants:

- Cooperative Extension Service for a U.S. state or territory
- Non-government organizations and/or community-based organizations
- Organizations representing owners and operators of farms, small food processors, or small fruit and vegetable merchant wholesalers that have a commitment to public health and expertise in administering programs that contribute to food safety
- Federal, state, local, or tribal agencies.
- An institution of higher education or a foundation maintained by an institution of higher education
- A collaboration of two or more eligible entities

Notices of Funding Opportunity (NOFOs)

NOFO LINK	DESCRIPTIVE SUMMARY	DEADLINES
USDA-NIFA-FA4182-32935	Food Safety Outreach Program – Community Outreach Projects	Closed
USDA-NIFA-FA4182-32936	Food Safety Outreach Program – Collaborative Education and Training Projects	Closed
USDA-NIFA-FA4182-32937	Food Safety Outreach Program Technical Assistance – Grant Writing Skills Projects	Closed

Previously Funded Projects

See FSOP Projects

PROGRAM TYPE:
Competitive Grant Programs

FUNDING OPPORTUNITIES:
Food Safety Outreach Program

EXTERNAL RESOURCES:

FY 2021 Food Safety Outreach Program Webinar Recording

USDA ERS - Food Safety

Food Safety Research Priorities & Studies Food Safety and Inspection Service

NAREEE Advisory Board

Food Safety Topics National Agricultural Library

Food Safety Research Information Office

Page last updated: July 30, 2026

FSMA Final Rule on Foreign Supplier Verification Programs (FSVP) for Importers of Food for Humans and Animals

About the Final Rule

The FSVP rule requires importers to perform risk-based foreign supplier verification activities to verify that:

- The food is produced in a manner that provides the same level of public health protection as section 418 (concerning hazard analysis and risk-based preventive controls) or 419 (concerning standards for the safe production and harvesting of certain fruits and vegetables that are raw agricultural commodities (RACs) of the FD&C Act (21 U.S.C. 350g (https://www.govinfo.gov/app/details/USCODE-2019-title21/USCODE-2019-title21-chap9-subchapIV-sec350g) and 350h (https://www.govinfo.gov/app/details/USCODE-2019-title21/USCODE-2019-title21-chap9-subchapIV-sec350h/summary)), if applicable;
- The food is not adulterated under section 402 of the FD&C Act (21 U.S.C. 342 (https://www.govinfo.gov/app/details/USCODE-2019-title21/USCODE-2019-title21-chap9-subchapIV-sec342)); and
- The human food is not misbranded under section 403(w) of the FD&C Act (21 U.S.C. 343(w) (https://www.govinfo.gov/app/details/USCODE-2019-title21/USCODE-2019-title21-chap9-subchapIV-sec343/summary)) (concerning food allergen labeling).

The final rule went into effective January 26, 2016.

- Federal Register Notice (https://www.federalregister.gov/articles/2015/11/27/2015-28158/foreign-supplier-verification-programs-for-importers-of-food-for-humans-and-animals)
- Docket Folder FDA-2011-N-0143 (https://www.regulations.gov/docket/FDA-2011-N-0143) provides the full text of the rule
- FSVP for Food Importers Regulation (21 CFR part 1, subpart L) (https://www.ecfr.gov/current/title-21/chapter-I/subchapter-A/part-1/subpart-L)
- Final Rule At-A-Glance (/food/food-safety-modernization-act-fsma/final-rule-foreign-supplier-verification-programs-fsvp-glance)

Feedback

- What Foreign Supplier Verification Programs Mean for Consumers (/food/food-safety-modernization-act-fsma/what-foreign-supplier-verification-programs-mean-consumers)

Industry Assistance

Key Requirements

Compliance Dates

Related Guidance

Public Meetings & Webinars

Translations

Contact Us

The FDA has established the FSMA Technical Assistance Network (/food/food-safety-modernization-act-fsma/fsma-technical-assistance-network-tan), to provide a central source of information for questions related to the FSMA rules, programs, and implementation strategies.

Was this page helpful? * (required)

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Displaying title 21, up to date as of 10/06/2026. Title 21 was last amended 10/06/2026.

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Title 21 —Food and Drugs
Chapter I —Food and Drug Administration, Department of Health and Human Services
Subchapter B —Food for Human Consumption
Part 117
—Current Good Manufacturing Practice, Hazard Analysis, and Risk-Based Preventive Controls for Human Food
Subpart C —Hazard Analysis and Risk-Based Preventive Controls

EDITORIAL NOTE ON PART 117

Editorial Note: Nomenclature changes to part 117 appear at 81 FR 49896, July 29, 2016.

§ 117.180 Requirements applicable to a preventive controls qualified individual and a qualified auditor.

(a) One or more preventive controls qualified individuals must do or oversee the following:

(1) Preparation of the food safety plan (§ 117.126(a)(2));

(2) Validation of the preventive controls (§ 117.160(b)(1));

(3) Written justification for validation to be performed in a timeframe that exceeds the first 90 calendar days of production of the applicable food;

(4) Determination that validation is not required (§ 117.160(c)(5));

(5) Review of records (§ 117.165(a)(4));

(6) Written justification for review of records of monitoring and corrective actions within a timeframe that exceeds 7 working days;

(7) Reanalysis of the food safety plan (§ 117.170(d)); and

(8) Determination that reanalysis can be completed, and additional preventive controls validated, as appropriate to the nature of the preventive control and its role in the facility's food safety system, in a timeframe that exceeds the first 90 calendar days of production of the applicable food.

(b) A qualified auditor must conduct an onsite audit (§ 117.435(a)).

(c)

(1) To be a preventive controls qualified individual, the individual must have successfully completed training in the development and application of risk-based preventive controls at least equivalent to that received under a standardized curriculum recognized as adequate by FDA or be otherwise qualified through job experience to develop and apply a food safety system. Job experience may qualify an individual to perform these functions if such experience has provided an individual with knowledge at least equivalent to that provided through the standardized curriculum. This individual may be, but is not required to be, an employee of the facility.

(2) To be a qualified auditor, a qualified individual must have technical expertise obtained through education, training, or experience (or a combination thereof) necessary to perform the auditing function.

(d) All applicable training in the development and application of risk-based preventive controls must be documented in records, including the date of the training, the type of training, and the person(s) trained.

FSMA Final Rule for Preventive Controls for Animal Food

- Federal Register Notice (https://www.federalregister.gov/articles/2015/09/17/2015-21921/current-good-manufacturing-practice-hazard-analysis-and-risk-based-preventive-controls-for-food-for)
- Docket Folder **FDA-2011-N-0922** (https://www.regulations.gov/docket/FDA-2011-N-0922) provides full text of the Rule
- Questions & Answers (/food/food-safety-modernization-act-fsma/frequently-asked-questions-fsma)
- Fact Sheet (/media/93897/download?attachment)

Feedback

The second major compliance dates for the FDA Food Safety Modernization Act (FSMA) Preventive Controls for Animal Food rule arrived in September 2017.

The final rule was published in September 2015 and larger animal food facilities were required to comply with the Current Good Manufacturing Practice (CGMP) requirements by September 2016.

Now larger animal food facilities have been required to comply with the preventive controls requirements since September 18, 2017, and facilities that are small businesses were required to implement the CGMPs by that date.

Because compliance dates are staggered by the size of the business, the next major compliance dates come in September 2018, when small businesses will also have to meet preventive controls requirements and very small businesses must implement the CGMPs.

This rule requires animal food facilities to have a food safety plan in place that includes an analysis of hazards to determine which ones need control and risk-based preventive controls to minimize or prevent those hazards.

Jenny Murphy, a consumer safety officer at FDA's Center for Veterinary Medicine, explains what animal food producers can expect in this next phase of implementation (/food/conversations-experts-food-topics/what-expect-next-compliance-dates-fsma-preventive-controls-animal-foods-rule).

Key Requirements

Compliance Dates

Assistance Industry

Public Meetings and Webinars

Related Guidance

Supporting Material

Contact Us

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FSMA Final Rule for Preventive Controls for Human Food

fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-preventive-controls-human-food

Human Foods Program 11 de agosto de 2026



Current Good Manufacturing Practice, Hazard Analysis, and Risk-Based Preventive Controls for Human Food

- Federal Register Notice
- Docket Folder **FDA-2011-N-0920** provides the full text of the Rule
- Questions & Answers
- Fact Sheet

Generally, domestic and foreign food facilities that are required to register with section 415 of the Food, Drug, & Cosmetic Act must comply with the requirements for risk-based preventive controls mandated by the FDA Food Safety Modernization Act (FSMA) as well as the modernized Current Good Manufacturing Practices (CGMPs) of this rule (unless an exemption applies). It is important to note that applicability of the CGMPs is not dependent upon whether a facility is required to register.

This rule, which became final in September 2015, requires food facilities to have a food safety plan in place that includes an analysis of hazards and risk-based preventive controls to minimize or prevent the identified hazards.

Compliance dates are staggered, based on the size of the business, with separate dates for the requirements of the supply chain program. Training, education, and technical assistance are available for those covered by this rule.

Upcoming Compliance Dates

Key Requirements

Assistance for Industry

Meetings and Webinars

Related Guidance

Supporting Material

Additional Information

Contact Us

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Displaying title 9, up to date as of 10/06/2026. Title 9 was last amended 7/20/2026.

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Title 9 —Animals and Animal Products
Chapter III —Food Safety and Inspection Service, Department of Agriculture
Subchapter E
—Regulatory Requirements Under the Federal Meat Inspection Act, the Poultry Products Inspection Act, and the Egg Products Inspection Act

ENHANCED CONTENT - TABLE OF CONTENTS

PART 417—HAZARD ANALYSIS AND CRITICAL CONTROL POINT (HACCP) SYSTEMS

Authority: 21 U.S.C. 451-470, 601-695, 1031-1056; 7 U.S.C. 450, 1901-1906; 7 CFR 2.18, 2.53.

Source: 61 FR 38868, July 25, 1996, unless otherwise noted.

§ 417.1 Definitions.

For purposes of this part, the following definitions shall apply:

Corrective action. Procedures to be followed when a deviation occurs.

Critical control point. A point, step, or procedure in a food process at which control can be applied and, as a result, a food safety hazard can be prevented, eliminated, or reduced to acceptable levels.

Critical limit. The maximum or minimum value to which a physical, biological, or chemical hazard must be controlled at a critical control point to prevent, eliminate, or reduce to an acceptable level the occurrence of the identified food safety hazard.

Food safety hazard. Any biological, chemical, or physical property that may cause a food to be unsafe for human consumption.

HACCP System. The HACCP plan in operation, including the HACCP plan itself.

Hazard. SEE *Food Safety Hazard.*

Preventive measure. Physical, chemical, or other means that can be used to control an identified food safety hazard.

Process-monitoring instrument. An instrument or device used to indicate conditions during processing at a critical control point.

Responsible establishment official. The individual with overall authority on-site or a higher level official of the establishment.

§ 417.2 Hazard Analysis and HACCP Plan.

(a) ***Hazard analysis.***

(1) Every official establishment shall conduct, or have conducted for it, a hazard analysis to determine the food safety hazards reasonably likely to occur in the production process and identify the preventive measures the establishment can apply to control those hazards. The hazard analysis shall include food safety hazards that can occur before, during, and after entry into the establishment. A food safety hazard that is reasonably likely to occur is one for which a prudent establishment would establish controls because it historically has occurred, or because there is a reasonable possibility that it will occur in the particular type of product being processed, in the absence of those controls.

(2) A flow chart describing the steps of each process and product flow in the establishment shall be prepared, and the intended use or consumers of the finished product shall be identified.

(3) Food safety hazards might be expected to arise from the following:

(i) Natural toxins;

(ii) Microbiological contamination;

(iii) Chemical contamination;

(iv) Pesticides;

(v) Drug residues;

(vi) Zoonotic diseases;

(vii) Decomposition;

(viii) Parasites;

(ix) Unapproved use of direct or indirect food or color additives; and

(x) Physical hazards.

(b) ***The HACCP plan.***

(1) Every establishment shall develop and implement a written HACCP plan covering each product produced by that establishment whenever a hazard analysis reveals one or more food safety hazards that are reasonably likely to occur, based on the hazard analysis conducted in accordance with paragraph (a) of this section, including products in the following processing categories:

(i) Slaughter—all species.

(ii) Raw product—ground.

(iii) Raw product—not ground.

(iv) Thermally processed—commercially sterile.

(v) Not heat treated—shelf stable.

(vi) Heat treated—shelf stable.

(vii) Fully cooked—not shelf stable.

(viii) Heat treated but not fully cooked—not shelf stable.

(ix) Product with secondary inhibitors—not shelf stable.

(2) A single HACCP plan may encompass multiple products within a single processing category identified in this paragraph, if the food safety hazards, critical control points, critical limits, and procedures required to be identified and performed in paragraph (c) of this section are essentially the same, provided that any required features of the plan that are unique to a specific product are clearly delineated in the plan and are observed in practice.

(3) HACCP plans for thermally processed/commercially sterile products do not have to address the food safety hazards associated with microbiological contamination if the product is produced in accordance with the requirements of part 431 of this chapter.

(c) ***The contents of the HACCP plan.*** The HACCP plan shall, at a minimum:

(1) List the food safety hazards identified in accordance with paragraph (a) of this section, which must be controlled for each process.

(2) List the critical control points for each of the identified food safety hazards, including, as appropriate:

(i) Critical control points designed to control food safety hazards that could be introduced in the establishment, and

(ii) Critical control points designed to control food safety hazards introduced outside the establishment, including food safety hazards that occur before, during, and after entry into the establishment;

(3) List the critical limits that must be met at each of the critical control points. Critical limits shall, at a minimum, be designed to ensure that applicable targets or performance standards established by FSIS, and any other requirement set forth in this chapter pertaining to the specific process or product, are met;

(4) List the procedures, and the frequency with which those procedures will be performed, that will be used to monitor each of the critical control points to ensure compliance with the critical limits;

(5) Include all corrective actions that have been developed in accordance with § 417.3(a) of this part, to be followed in response to any deviation from a critical limit at a critical control point; and

(6) Provide for a recordkeeping system that documents the monitoring of the critical control points. The records shall contain the actual values and observations obtained during monitoring.

(7) List the verification procedures, and the frequency with which those procedures will be performed, that the establishment will use in accordance with § 417.4 of this part.

(d) ***Signing and dating the HACCP plan.***

(1) The HACCP plan shall be signed and dated by the responsible establishment individual. This signature shall signify that the establishment accepts and will implement the HACCP plan.

(2) The HACCP plan shall be dated and signed:

(i) Upon initial acceptance;

(ii) Upon any modification; and

(iii) At least annually, upon reassessment, as required under § 417.4(a)(3) of this part.

(e) Pursuant to 21 U.S.C. 456, 463, 608, and 621, the failure of an establishment to develop and implement a HACCP plan that complies with this section, or to operate in accordance with the requirements of this part, may render the products produced under those conditions adulterated.

[61 FR 38868, July 25, 1996, as amended at 62 FR 61009, Nov. 14, 1997; 83 FR 25308, May 31, 2018]

§ 417.3 Corrective actions.

(a) The written HACCP plan shall identify the corrective action to be followed in response to a deviation from a critical limit. The HACCP plan shall describe the corrective action to be taken, and assign responsibility for taking corrective action, to ensure:

(1) The cause of the deviation is identified and eliminated;

(2) The CCP will be under control after the corrective action is taken;

(3) Measures to prevent recurrence are established; and

(4) No product that is injurious to health or otherwise adulterated as a result of the deviation enters commerce.

(b) If a deviation not covered by a specified corrective action occurs, or if another unforeseen hazard arises, the establishment shall:

(1) Segregate and hold the affected product, at least until the requirements of paragraphs (b)(2) and (b)(3) of this section are met;

(2) Perform a review to determine the acceptability of the affected product for distribution;

(3) Take action, when necessary, with respect to the affected product to ensure that no product that is injurious to health or otherwise adulterated, as a result of the deviation, enters commerce;

(4) Perform or obtain reassessment by an individual trained in accordance with § 417.7 of this part, to determine whether the newly identified deviation or other unforeseen hazard should be incorporated into the HACCP plan.

(c) All corrective actions taken in accordance with this section shall be documented in records that are subject to verification in accordance with § 417.4(a)(2)(iii) and the recordkeeping requirements of § 417.5 of this part.

§ 417.4 Validation, Verification, Reassessment.

(a) Every establishment shall validate the HACCP plan's adequacy in controlling the food safety hazards identified during the hazard analysis, and shall verify that the plan is being effectively implemented.

(1) ***Initial validation.*** Upon completion of the hazard analysis and development of the HACCP plan, the establishment shall conduct activities designed to determine that the HACCP plan is functioning as intended. During this HACCP plan validation period, the establishment shall repeatedly test the adequacy of the CCP's, critical limits, monitoring and recordkeeping procedures, and corrective actions set forth in the HACCP plan. Validation also encompasses reviews of the records themselves, routinely generated by the HACCP system, in the context of other validation activities.

(2) ***Ongoing verification activities.*** Ongoing verification activities include, but are not limited to:

(i) The calibration of process-monitoring instruments;

(ii) Direct observations of monitoring activities and corrective actions; and

(iii) The review of records generated and maintained in accordance with § 417.5(a)(3) of this part.

(3)

(i) ***Reassessment of the HACCP plan.*** Every establishment shall reassess the adequacy of the HACCP plan at least annually and whenever any changes occur that could affect the hazard analysis or alter the HACCP plan. Such changes may include, but are not limited to, changes in: raw materials or source of raw materials; product formulation; slaughter or processing methods or systems; production volume; personnel; packaging; finished product distribution systems; or, the intended use or consumers of the finished product. The reassessment shall be performed by an individual trained in accordance with § 417.7 of this part. The HACCP plan shall be modified immediately whenever a reassessment reveals that the plan no longer meets the requirements of § 417.2(c) of this part.

(ii) Each establishment must make a record of each reassessment required by paragraph (a)(3)(i) of this section and must document the reasons for any changes to the HACCP plan based on the reassessment, or the reasons for not changing the HACCP plan based on the reassessment. For annual reassessments, if the establishment determines that no changes are needed to its HACCP plan, it is not required to document the basis for this determination.

(b) ***Reassessment of the hazard analysis.*** Any establishment that does not have a HACCP plan because a hazard analysis has revealed no food safety hazards that are reasonably likely to occur shall reassess the adequacy of the hazard analysis whenever a change occurs that could reasonably affect whether a food safety hazard exists. Such changes may include, but are not limited to, changes in: raw materials or source of raw materials; product formulation; slaughter or processing methods or systems; production volume; packaging; finished product distribution systems; or, the intended use or consumers of the finished product.

[61 FR 38868, July 25, 1996, as amended at 77 FR 26936, May 8, 2012]

§ 417.5 Records.

(a) The establishment shall maintain the following records documenting the establishment's HACCP plan:

(1) The written hazard analysis prescribed in § 417.2(a) of this part, including all supporting documentation;

(2) The written HACCP plan, including decisionmaking documents associated with the selection and development of CCP's and critical limits, and documents supporting both the monitoring and verification procedures selected and the frequency of those procedures.

(3) Records documenting the monitoring of CCP's and their critical limits, including the recording of actual times, temperatures, or other quantifiable values, as prescribed in the establishment's HACCP plan; the calibration of process-monitoring instruments; corrective actions, including all actions taken in response to a deviation; verification procedures and results; product code(s), product name or identity, or slaughter production lot. Each of these records shall include the date the record was made.

(b) Each entry on a record maintained under the HACCP plan shall be made at the time the specific event occurs and include the date and time recorded, and shall be signed or initialed by the establishment employee making the entry.

(c) Prior to shipping product, the establishment shall review the records associated with the production of that product, documented in accordance with this section, to ensure completeness, including the determination that all critical limits were met and, if appropriate, corrective actions were taken, including the proper disposition of product. Where practicable, this review shall be conducted, dated, and signed by an individual who did not produce the record(s), preferably by someone trained in accordance with § 417.7 of this part, or the responsible establishment official.

(d) ***Records maintained on computers.*** The use of records maintained on computers is acceptable, provided that appropriate controls are implemented to ensure the integrity of the electronic data and signatures.

(e) ***Record retention.***

(1) Establishments shall retain all records required by paragraph (a)(3) of this section as follows: for slaughter activities for at least one year; for refrigerated product, for at least one year; for frozen, preserved, or shelf-stable products, for at least two years.

(2) Off-site storage of records required by paragraph (a)(3) of this section is permitted after six months, if such records can be retrieved and provided, on-site, within 24 hours of an FSIS employee's request.

(f) ***Official review.*** All records required by this part and all plans and procedures required by this part shall be available for official review and copying.

§ 417.6 Inadequate HACCP Systems.

A HACCP system may be found to be inadequate if:

(a) The HACCP plan in operation does not meet the requirements set forth in this part;

(b) Establishment personnel are not performing tasks specified in the HACCP plan;

(c) The establishment fails to take corrective actions, as required by § 417.3 of this part;

(d) HACCP records are not being maintained as required in § 417.5 of this part; or

(e) Adulterated product is produced or shipped.

§ 417.7 Training.

(a) Only an individual who has met the requirements of paragraph (b) of this section, but who need not be an employee of the establishment, shall be permitted to perform the following functions:

(1) Development of the HACCP plan, in accordance with § 417.2(b) of this part, which could include adapting a generic model that is appropriate for the specific product; and

(2) Reassessment and modification of the HACCP plan, in accordance with § 417.3 of this part.

(b) The individual performing the functions listed in paragraph (a) of this section shall have successfully completed a course of instruction in the application of the seven HACCP principles to meat, poultry, or egg products processing, including a segment on the development of a HACCP plan for a specific product and on record review.

[61 FR 38868, July 25, 1996, as amended at 85 FR 68672, Oct. 29, 2020]

§ 417.8 Agency verification.

FSIS will verify the adequacy of the HACCP plan(s) by determining that each HACCP plan meets the requirements of this part and all other applicable regulations. Such verification may include:

(a) Reviewing the HACCP plan;

(b) Reviewing the CCP records;

(c) Reviewing and determining the adequacy of corrective actions taken when a deviation occurs;

(d) Reviewing the critical limits;

(e) Reviewing other records pertaining to the HACCP plan or system;

(f) Direct observation or measurement at a CCP;

(g) Sample collection and analysis to determine the product meets all safety standards; and

(h) On-site observations and record review.



2025
2029

National ONE HEALTH Framework

to Address Zoonotic Diseases and Advance Public Health Preparedness in the United States

CS 361630-A

Table of Contents

Executive Summary 3

Introduction 5

Framework Purpose and Scope 7

Framework Mission 7

Framework Vision 7

Guiding Principles 8

Goals and Objectives 9

Conclusion 13

Appendix A 14



Executive Summary

The first ever **National One Health Framework to Address Zoonotic Diseases and Advance Public Health Preparedness in the United States** (NOHF-Zoonoses), 2025-2029, establishes a structure to facilitate multisectoral and transdisciplinary coordination, collaboration, and communication across the federal government. Using the One Health approach, the framework addresses zoonotic diseases and other priority One Health issues in the United States (U.S.). The One Health approach recognizes the interdependence of the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems). This approach mobilizes multiple sectors, disciplines, and communities to work together to promote well-being and address health and ecosystem threats.

Previous multisectoral work in the U.S. identified the critical need to formalize federal One Health coordination to address zoonotic diseases and other One Health related issues across the U.S. Government. Therefore, in the 2023 Consolidated Appropriations Act and the 2021 House Appropriations Committee Report, Congress directed the Centers for Disease Control and Prevention (CDC) in coordination with other federal agencies, to develop a framework based on the One Health approach to address zoonotic diseases and advance public health preparedness. The Act also directed CDC to coordinate with the U.S. Department of Agriculture (USDA) and the Department of the Interior (DOI) to develop a mechanism to support coordination at the federal level related to prevention, detection, control, and response for zoonotic diseases and related One Health activities.

The One Health approach applies to zoonotic diseases as well as many other health threats at the interconnection between people, animals, plants, and the environment. While the primary focus of the NOHF-Zoonoses is addressing zoonotic diseases and advancing public health preparedness, the U.S. OHCU has also incorporated other components of One Health into this framework.

To meet these directives CDC partnered with DOI, USDA and other federal agencies beginning in November 2021, to plan the establishment of the United States One Health Coordination Unit (U.S. OHCU) and to draft the NOHF-Zoonoses. The U.S. OHCU was launched in January 2024, with joint leadership from CDC (Chair 2024-2026), DOI, and USDA. The U.S. OHCU is coordinated by a Chair that will rotate between CDC, USDA, and DOI on a biennial calendar year basis. U.S. OHCU membership includes 24 agencies related to health, agriculture, interior, wildlife, environment, development, state, commerce, defense, security, and other fields. The draft NOHF-Zoonoses was published in September 2023 via the Federal Register Notice process, to engage and obtain input from state, Tribe, local, and territorial (STLT), non-governmental partners, and the public.

The NOHF-Zoonoses presents goals and objectives for application of the One Health approach to protect people, animals, and our shared environment in the U.S. from zoonotic diseases and advance public health preparedness to optimize health, food safety and security, and sustainability while also promoting biodiversity and conservation outcomes. The NOHF-Zoonoses was designed to align with and complement existing U.S. initiatives that incorporate the One Health approach. The seven goals outlined in the NOHF-Zoonoses include the following areas: (1) Coordination, Collaboration and Communication; (2) Prevention; (3) Preparedness; (4) Coordinated Outbreak Investigation, Response, and Recovery; (5) Surveillance; (6) Laboratory; and (7) Workforce.

While this framework focuses on One Health coordination at the federal level, its success depends on robust partnerships with STLT, non-governmental organizations, academia, and private sector partners as well as collaboration with relevant international partners. Knowledge and best practices from the implementation of the NOHF-Zoonoses will inform future One Health priorities and strengthen the nation's ability to address One Health threats and promote health, safety, security, and resilience at the human-animal-plant-environment interface.

Advancing One Health collaboration in the U.S. through the U.S. OHCU and the NOHF-Zoonoses will enhance our ability to jointly prevent, detect, and respond to zoonotic disease threats and related One Health issues. This initiative will improve efficiency across the U.S. government by enhancing collaboration across all relevant sectors with governmental and non-governmental partners while optimizing resource use in order to protect the health, safety, and security of people, animals, plants, and our shared environment.



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National One Health Framework to Address Zoonotic Diseases and Advance Public Health Preparedness in the United States



CONNECTING HUMAN, ANIMAL, AND ENVIRONMENTAL HEALTH

One Health is a collaborative, multisectoral, and transdisciplinary approach — working at the local, regional, national, and global levels — with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment (**U.S. Government Definition, established 2017**).

Introduction

The **ONE HEALTH** approach applies across local, regional, national, and global levels and involves multisectoral coordination and transdisciplinary collaboration of experts across human, animal, plant, environment, and other relevant sectors. Implementing the One Health approach to address complex issues is critical to achieving optimal health outcomes, addressing health inequities, and building resilience for all sectors. Many issues can benefit from the One Health approach, including zoonotic diseases (diseases shared between animals and people); emerging and reemerging infectious diseases; antimicrobial resistance; food safety and security; vector-borne diseases; animal health and welfare; responsible wildlife management; threats to our environment and terrestrial and aquatic ecosystems,[1] including invasive species, and loss of biodiversity and habitat; protected areas management and land use changes; and other shared One Health issues. Timely and transparent coordination, collaboration, and communication across human, animal, plant, and environmental health disciplines, as well as other relevant sectors (e.g., commerce, security, defense), are key to successful implementation of the One Health approach to maintain and promote the health and resilience of all species and ecosystems upon which we depend.

Multisectoral and transdisciplinary work can provide a basis to address complex issues sustainably and effectively and can facilitate rapid responses to endemic and emerging zoonotic disease threats, as well as others with epidemic or pandemic potential. One Health partnerships at all levels are fundamental to addressing zoonotic diseases and other priority One Health issues across federal agencies and non-federal partners including state, Tribal, local, and territorial government jurisdictions and involve non-governmental, academic, and private sector partners. Nature as a foundation for physical and mental health and cultural values should be incorporated as part of the One Health approach. As original stewards of the natural environment, indigenous communities and their knowledge should be integrated into One Health initiatives as appropriate.

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[1] An ecosystem is the natural environment that includes plants and animals that live and interact within that environment.



Previous multisectoral work has identified a need for a coordinated national One Health framework to address zoonotic diseases and advance public health preparedness in the United States. In 2017, the Centers for Disease Control and Prevention (CDC), the U.S. Department of the Interior (DOI), and the U.S. Department of Agriculture (USDA) organized a One Health Zoonotic Disease Prioritization (OHZDP) workshop for the United States. Participants included 30 government officials from federal and state agencies who work to address zoonotic diseases in the public health, animal health, and environment sectors. The workshop used the One Health approach to identify and prioritize endemic and emerging zoonotic diseases of greatest national concern that should be jointly addressed by federal zoonotic disease programs (Appendix A). Participants also developed plans for implementing and strengthening the One Health approach to address these diseases in the United States. The "National One Health Framework to Address Zoonotic Diseases and Advance Public Health Preparedness in the United States," or NOHF-Zoonoses, responds to one of the recommendations from the OHZDP workshop and is primarily focused on coordinated federal activities in the United States. In addition, Congress directed CDC, in partnership with other departments and agencies, to develop a One Health framework to address zoonotic diseases and advance public health preparedness in both the House Appropriations Committee report accompanying the 2021 omnibus appropriations bill and the 2023 Consolidated Appropriations Act.

The NOHF-Zoonoses was designed to align with other U.S. initiatives that incorporate the One Health approach including the National Biodefense Strategy and Implementation Plan and the National Public Health Strategy to Prevent and Control Vector-Borne Diseases in People, and was developed with the same foundational components including improving communication and coordination and focusing on strengthening prevention, preparedness, response, and recovery in the United States. The NOHF-Zoonoses was created to complement and fit within the landscape of aligned U.S. federal initiatives to help strengthen disease prevention, control, preparedness, response, and recovery using the One Health approach to address zoonotic diseases and other One Health related issues across the U.S. Government.

Recognizing the importance of international action, the U.S. Government works to advance One Health globally in partnership with relevant international partners. Although the NOHF-Zoonoses is meant to guide coordinated federal activities in the United States, similar efforts are underway globally. For example, the first ever One Health Joint Plan of Action, released in 2022, aims to create a framework to integrate systems and capacity in six areas, so that countries and regions can collectively better prevent, predict, detect, and respond to health threats: One Health capacities for health systems; emerging and re-emerging zoonotic epidemics; endemic zoonotic, neglected tropical, neglected tropical and vector-borne diseases; food safety risks; antimicrobial resistance; and the environment. Once implemented, the NOHF-Zoonoses will enable strong, coordinated U.S. federal government representation to such global efforts.

Framework Purpose and Scope

All relevant sectors are encouraged to collaborate for effective and consistent One Health outcomes. Successful federal One Health collaboration is contingent on continued strong partnerships and coordination with public health, safety, agriculture, wildlife, environment, incident response, and other relevant authorities at the state, Tribe, local, and territorial levels. The activities described in the NOHF-Zoonoses are intended to complement existing efforts.

Although this framework focuses primarily on zoonotic diseases and does not specifically address other issues of One Health importance, the resulting partnerships, systems, and lessons will inform future One Health priorities and strengthen the nation's ability to address other threats and promote health, safety, security, and resilience at the human-animal-plant-environment interface. Strong partnerships established between federal, regional, state, Tribe, territorial, local, academic, nongovernmental, and private entities, as well as affected communities and the public with culturally appropriate and coordinated One Health representation, will foster collaboration and promote engagement across relevant sectors and disciplines. Additionally, these efforts aim to strengthen public health resilience and cultivate trust in and support of the NOHF-Zoonoses. Full implementation of the activities described in this framework is dependent upon expanding existing One Health capacities and resources within the federal government. Monitoring and evaluating the value and effects of existing subnational, national, regional, and global initiatives will also maximize outcomes.

Implementation of this framework will be coordinated by the United States One Health Coordination Unit (U.S. OHCU), which was launched in January 2024. The U.S. OHCU is a federal level coordinating structure with shared leadership between CDC, DOI, and USDA, representing an equal balance across public health, animal health, response agencies, and environmental sectors. Over 20 federal agencies from multiple departments have representatives participating in the U.S. OHCU.

Framework Mission

Apply the One Health approach to protect people, animals, and the environment in the United States from zoonotic diseases and, advance public health preparedness to optimize health, food safety and security, and sustainability while also promoting biodiversity and conservation outcomes.

Framework Vision

A prepared nation where people, animals (domestic and wildlife), and the environment are protected from zoonotic disease threats by a proactive, coordinated, and collaborative system using the One Health approach.





Guiding Principles

Sustainability: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. To pursue sustainability is to create and maintain the conditions under which humans, animals, and environment can exist in productive harmony to support present and future generations in addition to mitigating risks that threaten sustainability.

Stewardship: Stewardship and the responsibility of humans to adopt behaviors to provide responsible solutions that recognize the importance of animal health and welfare and the integrity of the whole ecosystem is integral to securing the well-being of current and future generations.

Multisectoral and Transdisciplinary Collaboration: Engaging all relevant sectors and disciplines, including efforts by federal partners, involved in implementing the One Health approach to address zoonotic diseases and other priority One Health issues.

Goals and Objectives

Goal #1: Coordination, Collaboration, and Communication: Establish a standing, formal One Health coordination mechanism, the U.S. One Health Coordination Unit, to provide a common platform and governance structure to address One Health needs.

Objective 1.1: Describe roles and responsibilities of federal agencies engaged in One Health and disseminate information on their roles and responsibilities relevant to implementation of this framework.

Objective 1.2: Coordinate, collect, and disseminate in a timely manner information regarding progress, including successes and challenges for each objective under this framework through the U.S. One Health Coordination Unit.

Objective 1.3: Develop and support ongoing initiatives and joint communication activities and materials for coordinated outreach and education at all relevant levels to advance One Health in the United States.

Objective 1.4: Develop joint priorities for One Health science and research to better understand, predict, respond to, and prevent priority zoonotic diseases, as well as endemic, emerging, and reemerging zoonotic diseases, including upstream drivers.

Goal #2: Prevention: Strengthen existing and identify new opportunities for One Health collaboration to prevent, respond to, and control zoonotic diseases, and to address early prevention, including spillover and spillback.

Objective 2.1: Leverage and expand existing initiatives to efficiently exchange information from relevant sectors regarding surveillance, research, ecosystem restoration[2] and other One Health activities used to jointly identify and assess priority, endemic, emerging, and reemerging zoonotic disease issues, risks, and potential threats.

Objective 2.2: Collaborate with state, Tribe, local, territorial, and other relevant partners to develop resources and implement joint prevention, response, and control strategies including the use of novel approaches to address gaps in preventing and controlling zoonotic diseases.

Objective 2.3: Coordinate timely, scientific, evidence-based One Health messaging and communication activities for preventing priority, endemic, emerging, and reemerging zoonotic diseases and other priority One Health issues to ensure guidance and outreach reflect a unified federal voice.

Objective 2.4: Collaborate with state, Tribe, local, territorial, nongovernmental, and other partners to explore and address determinants of health and develop interventions and capacity to improve human, animal, and ecosystem resilience.[3] These interventions should consider changing biological, social, cultural, economic, and environmental factors that may increase the risk of zoonotic diseases and other priority One Health issues.

Objective 2.5: Support and expand efforts to sustainably preserve and restore ecosystem health, addressing factors that contribute to zoonotic disease emergence, reemergence, spillover and spillback, and enhancing resilience among people and the ecosystems on which they depend.

Objective 2.6: Address early prevention through measures aimed at safe and responsible management of wildlife, livestock, and companion animals where the human-animal-plant-environment interface is at high risk of zoonotic disease emergence and re-emergence.

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[2] Ecosystem restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed to make the ecosystem sustainable, resilient, and healthy under current and future conditions.

[3] Ecosystem resilience is the capacity for an ecosystem to respond to agitation or disturbance by resisting damage and recovering quickly.



Goal #3: Preparedness: Strengthen One Health collaborations for preparedness and build new approaches where needed to address priority, endemic, emerging, and reemerging zoonotic diseases and other priority One Health issues to optimize the health and sustainability of people, animals, plants, and ecosystems.

Objective 3.1: Support the integration of the One Health approach during development, review, implementation, and revision of preparedness and response plans.

Objective 3.2: Conduct One Health trainings and interagency exercises to reinforce and test preparedness coordination structures.

Objective 3.3: Review, prioritize, and implement relevant recommendations from completed interagency response exercises.

Objective 3.4: Support One Health collaboration to identify, assess, and address the effects of environmental and social determinants of health,[4,5] on priority endemic, emerging, and reemerging zoonotic diseases and other priority One Health issues.

Objective 3.5: Support the development, validation, and use of models and risk-prediction tools that include surveillance data and practices from humans, wildlife, domestic animals, and terrestrial and aquatic ecosystems. Incorporate geospatial modeling data of land, air, water, and weather that may contribute to pathogen transmission to better predict zoonotic disease outbreaks or emergent events.

Objective 3.6: Support the advancement of research to inform preparedness and response efforts, including medical, veterinary, public health, environmental, and agricultural product research, development, and supply chain needs for new and targeted diagnostics, vaccines, therapeutics, and mitigation strategies.

Objective 3.7: Support the understanding, development, and adoption of nature-based solutions, as appropriate, to increase community and environmental resilience against disruption from and impacts of zoonotic disease and associated environmental changes and drivers.

[4] Environmental Determinants of Health | NNLM

[5] Social Determinants of Health - Healthy People 2030 | health.gov

Goal #4: Coordinated Outbreak Investigation, Response, and Recovery:

Build and strengthen the One Health approach to coordinate zoonotic disease outbreak investigation, response, and recovery across relevant sectors.

Objective 4.1: Identify best practices across existing One Health processes for coordinated zoonotic disease outbreak investigations and responses between relevant federal, state, Tribe, local, and territorial One Health partners.

Objective 4.2: Develop and maintain a flexible model One Health framework for coordinated zoonotic disease outbreak investigations and responses between relevant sectors and jurisdictions, including coordination of real-time research needs.

Objective 4.3: Support the integration of the One Health approach during development, after-action review, and revision of response and recovery plans.

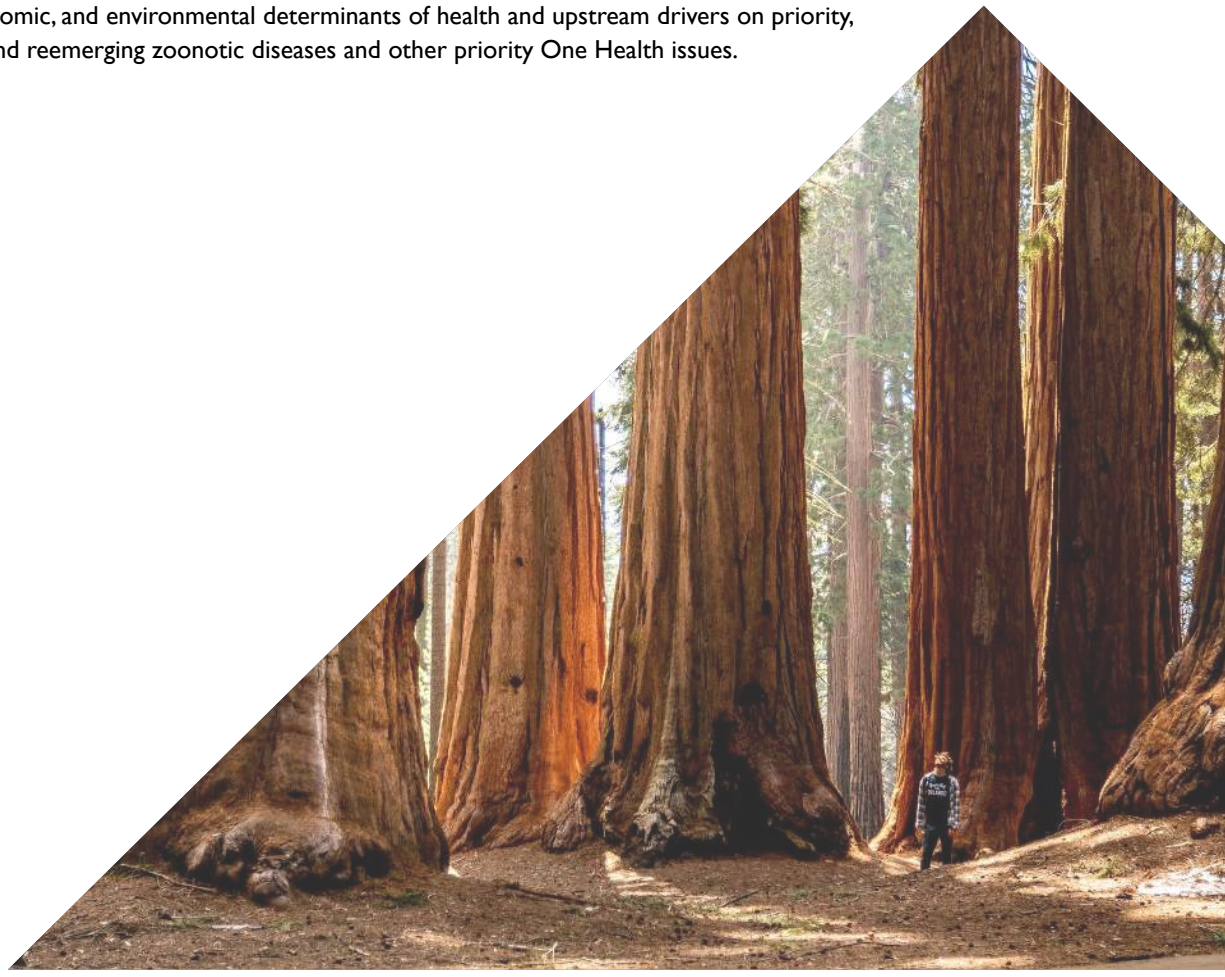
Objective 4.4: Collaboratively develop standard operating procedures for interagency coordination with state, Tribal, local, and territorial governments, and non-governmental, academic, and private sector partners.

Goal #5: Surveillance: Strengthen coordinated surveillance and information sharing for zoonotic disease surveillance and other One Health-relevant surveillance and reporting systems across sectors.

Objective 5.1: Leverage and expand on existing surveillance system evaluations to review One Health collaboration, coordination, communication, and information exchange across relevant sectors.

Objective 5.2: Develop a model One Health framework for coordinated surveillance and secure information sharing for priority, endemic, emerging, and reemerging zoonotic diseases, between relevant U.S. government departments and agencies, including international efforts.

Objective 5.3: Enhance knowledge and strengthen One Health collaboration, coordination, communication, information exchange, and data interoperability for surveillance and secure information sharing systems. The initial focus may include the effects of social, economic, and environmental determinants of health and upstream drivers on priority, endemic, emerging, and reemerging zoonotic diseases and other priority One Health issues.



Goal #6: Laboratory: Strengthen One Health laboratory capacity (e.g., trained personnel and use of advanced laboratory techniques), coordination, research, and reporting for detection of priority, endemic, emerging, and reemerging zoonotic diseases and other priority One Health issues.

Objective 6.1: Support efforts to institutionalize partnerships among relevant federal agencies to harmonize and ensure consistency of laboratory and sample collection protocols, secure sample sharing, and validated diagnostic assay development.

Objective 6.2: Identify One Health laboratory capacity gaps to effectively detect priority, endemic, emerging, and reemerging zoonotic diseases.

Objective 6.3: Support efforts to establish and strengthen laboratory reporting processes and timely data sharing.

Objective 6.4: Detect and characterize emerging and reemerging zoonotic disease threats through the coordinated One Health approach, including use of advanced pathogen and host/vector assessment detection technologies such as advanced molecular detection and genetic analyses.

Objective 6.5: Support research to identify risk and science-based strategies to detect and mitigate zoonotic diseases using the One Health approach and support applied biosafety and biosecurity innovation and enhance laboratory biosafety and biosecurity procedures and best practices.

Goal #7: Workforce: Support and expand efforts to develop a qualified One Health workforce to address zoonotic disease threats.

Objective 7.1: Identify opportunities to collaboratively develop and deliver trainings to build critical competencies to accomplish goals of agencies, departments, and the NOHF-Zoonoses.

Objective 7.2: Support the integration of One Health into sector-specific trainings among relevant departments and agencies to ensure an adequately trained One Health workforce.

Objective 7.3: Enhance recruitment, development, and retention of qualified staff to ensure a sustainable and dedicated One Health workforce.

Objective 7.4: Encourage integration of One Health into curriculums across all relevant disciplines.



Conclusion

Implementing the One Health approach means involving all relevant sectors concerning human, animal, plant, and environmental health to address health concerns in a more collaborative, effective, efficient, and sustainable manner than each sector approaching these issues alone. The National One Health Framework to Address Zoonotic Diseases and Advance Public Health Preparedness in the United States will inform One Health work across the U.S. Government, strengthen cooperative efforts to address the threat of zoonotic diseases, and advance public health preparedness. This framework will also strengthen federal collaborations with state, Tribe, local, territorial, international, non-governmental, academic, and private sector partners. Although the NOHF- Zoonoses is primarily focused on zoonotic diseases, the partnerships, systems, and lessons learned from the proposed activities can be expanded and applied to other priority One Health issues and shared priorities. The activities described in this framework are intended to support and encourage collaboration and cooperation with existing efforts, initiatives, and plans rather than create a parallel set of activities and priorities over the next five years (2025-2029). At the end of the five-year period, collaborating federal agencies may determine whether to renew their commitment to this framework or update the goals and objectives. Future work needed to support the framework's objectives, including evaluation efforts and gap analyses, will be conducted within the five-year period.



Appendix A

Prioritized Zoonotic Diseases of National Concern in the United States.

Identified as part of the 2017 U.S. One Health Zoonotic Disease Prioritization workshop*

1. Zoonotic Influenza
2. Salmonellosis
3. West Nile virus
4. Plague
5. Emerging coronaviruses (SARS, MERS)**
6. Rabies
7. Brucellosis
8. Lyme disease

* For additional context please refer to the full U.S. One Health Zoonotic Disease Prioritization Report

**NOTE: This list was developed in December 2017 prior to the emergence of SARS-CoV-2, the virus that causes COVID-19



Federal Partner Collaboration

U.S. Department of Health & Human Services (HHS)

Centers for Disease Control and Prevention (**CDC**)

Administration for Strategic Preparedness and Response (**ASPR**)

U.S. Food and Drug Administration (**FDA**)

National Institutes of Health (**NIH**)

Office of Global Affairs (**OGA**)

U.S. Department of Agriculture (USDA)

Animal and Plant Health Inspection Service (**APHIS**)

Agricultural Research Service (**ARS**)

Food Safety and Inspection Service (**FSIS**)

Forest Service (**FS**)

National Institute of Food and Agriculture (**NIFA**)

U.S. Department of the Interior (DOI)

Bureau of Reclamation (**USBR**)

U.S. Fish and Wildlife Service (**FWS**)

U.S. Geological Survey (**USGS**)

Indian Affairs (**IA**)

National Park Service (**NPS**)

Department of Commerce (DOC)

National Oceanic and Atmospheric Administration **(NOAA)**

U.S. Department of Defense (DOD)

Health Readiness Policy and Oversight (**HRP&O**)- Office of the Assistant Secretary of Defense for Health Affairs (**OASD[HA]**)

U.S. Department of Energy (DOE)

Office of Science (**SC**)

U.S. Department of Homeland Security (DHS)

Federal Emergency Management Agency (**FEMA**)

Office of Health Security (**OHS**)

U.S. Department of State (DOS)

Bureau of Oceans and International Environmental and Scientific Affairs
Office of Conservation and Water (**OES/ECW**)

Environmental Protection Agency (EPA)

U.S. Agency for International Development (USAID)

23 **Agencies** representing 8 federal departments (HHS, USDA, DOI, DOC, DOD, DOE DHS, DOS) developed this **Framework**



Cost Estimates of Foodborne Illnesses

ers.usda.gov/data-products/cost-estimates-of-foodborne-illnesses

3 de dezembro de 2025

The Cost Estimates of Foodborne Illnesses data product provides per-case and total estimates of the cost of foodborne illness in the United States. Estimates are provided for total foodborne illness, foodborne illnesses by specific pathogens, and foodborne illnesses whose pathogen cause was not specified in U.S. Centers for Disease Control and Prevention (CDC) disease incidence estimates.

These estimates draw on medical treatment cost data, public data on employment and wages, CDC estimates of the incidence of foodborne illness and associated hospitalizations and deaths, and peer-reviewed scientific research. Economic Research Service (ERS) estimates model illness outcomes from short-term illnesses (e.g., doctor's office visits), as well as long-term health outcomes (e.g., kidney failure from *E. coli* O157:H7 also known as STEC). These long-term health outcomes can themselves cause additional deaths and these deaths are included in ERS estimates.

In 2023 U.S. dollars, the cost of foodborne illness in the United States was $74.7 billion (table 1). Most of this cost was due to serious illnesses whose pathogen cause has been specified. These serious illnesses accounted for 20 percent of cases, but 60 percent of the total cost. The pathogen cause of most foodborne illnesses is never identified because most illnesses are relatively mild. Most individuals do not seek medical care. Those who do are generally treated on the basis of their symptoms, rather than on the basis of laboratory tests needed to identify the illness's pathogen cause. These milder illnesses, whose pathogen cause is not specified (described as "other foodborne gastroenteritis" in table 1), accounted for 80 percent of cases and 40 percent of total cost.

Cause	Mean number of cases	Mean total cost	Mean per-case cost
Illnesses from 31 major foodborne pathogens	9,388,133	$44,743,300,000	$4,766
Other foodborne gastroenteritis	38,392,704	$29,972,800,000	$781
Total	47,780,837	$74,716,100,000	$1,564

Cause	Mean number of cases	Mean total cost	Mean per-case cost

Note: Values do not sum to the total because values are simulated to account for uncertainty.

Source: USDA, Economic Research Service (ERS) calculations using estimates published in Hoffmann, S., White, A. E., McQueen, R. B., Ahn, J. W., Gunn-Sandell, L. B., & Scallan Walter, E. J. (2025). Economic burden of foodborne illnesses acquired in the United States. *Foodborne Pathogens and Disease*, 22(1), p.4−14.; Scallan, E., Hoekstra, R.M., Angulo, F.J., Tauxe, R.V., Widdowson, M.A., Roy, S.L., Jones, J.L. and Griffin, P.M., (2011a). Foodborne illness acquired in the United States—major pathogens. *Emerging Infectious Diseases*, 17(1), p.7.; and Scallan, E., Griffin, P.M., Angulo, F.J., Tauxe, R.V. and Hoekstra, R.M., (2011b). Foodborne illness acquired in the United States—unspecified agents. *Emerging Infectious Diseases,* 17(1), p.16.

Table 1. Estimated cost of foodborne illnesses in the United States, by cause (U.S. dollars, 2023)

Cost varies by pathogen due to both the extent and severity of illnesses the pathogens cause. Total cost by pathogen ranges from $100,000 for cholera (a relatively rare disease in the United States) to $17 billion for nontyphoidal *Salmonella*. Average per-case cost by pathogen ranges from $196 for *Bacillus cereus* to $4.6 million for *Vibrio vulnificus*. Table 2 presents the mean cost of illness estimates for select pathogens. These are pathogens that rank high in terms of total or per-case cost. A spreadsheet with per-case and total cost estimates for each of the 31 pathogens is included in the data product and available for download below.

Pathogen	Mean number of cases	Mean total cost	Mean per-case cost
Salmonella spp., nontyphoidal	1,027,561	$17,127,000,000	$16,668
Campylobacter spp.	845,024	$11,327,300,000	$13,405
Toxoplasma gondii (total)	86,753	$5,719,300,000	$65,926
Listeria monocytogenes (total)	1583	$3,964,300,000	$2,504,296
Norovirus	5,461,731	$2,968,300,000	$543

Pathogen	Mean number of cases	Mean total cost	Mean per-case cost
STEC O157 & non-O157	175,905	$503,900,000	$2,865
V. vulnificus	96	$438,400,000	$4,566,667
Clostridium botulinum	55	$115,600,000	$2,101,818

Source: USDA, Economic Research Service (ERS) calculations using estimates published in Hoffmann, S., White, A. E., McQueen, R. B., Ahn, J. W., Gunn-Sandell, L. B., & Scallan Walter, E. J. (2025). Economic burden of foodborne illnesses acquired in the United States. *Foodborne Pathogens and Disease*, 22(1), p.4−14. and Scallan, E., Hoekstra, R.M., Angulo, F.J., Tauxe, R.V., Widdowson, M.A., Roy, S.L., Jones, J.L. and Griffin, P.M., (2011a). Foodborne illness acquired in the United States—major pathogens. *Emerging Infectious Diseases*, 17(1), p.7.

Table 2. Estimated cost of select foodborne illnesses in the United States, by pathogen (U.S. dollars, 2023)

The data product provides a set of consistent, peer-reviewed estimates of the cost of U.S. foodborne illnesses that can be used by the public and regulatory agencies to understand the total impact of foodborne illnesses in the United States and the relative impact of different pathogen-specific foodborne pathogens and illnesses.

The 2025 data update highlights the concentrated economic impact of five primary foodborne pathogens: Campylobacter, Listeria monocytogenes, norovirus, Salmonella (non-typhoidal), and Toxoplasma gondii. These pathogens consistently account for the majority of the total economic burden of foodborne illnesses in the United States.

To support detailed economic analysis, ERS provides detailed supplemental Excel workbooks for these five high total-cost pathogens. These datasets offer a granular breakdown of cost components across distinct health outcomes, from non-physician visits to acute hospitalizations and premature mortality. The How to Read a Workbook page provides technical guidance on interpreting the data structures and modeling assumptions.

Costs of illness estimates are often used to approximate the public's willingness to pay to prevent foodborne illnesses. These cost estimates provide a conservative approximation because they do not include the willingness to pay to prevent non-financial impacts of illness, including pain and suffering.

The cost estimates in this data product are drawn from the 2025 article, Hoffmann et al., Economic burden of foodborne illnesses acquired in the United States (more information is available on the Documentation page). The Background & History page provides information about changes to this data product as estimates and the underlying methodology have been updated. The current estimates should not be used in comparison with previous estimates.

Interagency Food Safety Analytics Collaboration

cdc.gov/ifsac/php/data-research/annual-report-2023.html

CDC 27 de março de 2026

IFSAC 2023 Annual Report

For Public Health

At a glance

Report name: IFSAC 2023 annual report: Foodborne illness source attribution estimates for *Salmonella*, *Escherichia coli* O157, and *Listeria monocytogenes* — United States, a weighted approach using 1998–2023 outbreak data
Publication date: March 27, 2026
Summary:

- This report presents annual estimates of the percentages of foodborne illness attributed to 17 food categories for *Salmonella*, *Escherichia coli* O157, and *Listeria monocytogenes*.
- These estimates can inform food safety decision-making and provide pathogen-specific direction for reducing foodborne illness.
- Data came from 49,848 illnesses linked to 1,390 foodborne disease outbreaks that occurred from 1998 through 2023.



Executive summary

Background

Each year in the United States, an estimated 9.9 million people get sick, 53,300 are hospitalized, and 931 die of a foodborne disease caused by seven major food pathogens—including the three pathogens presented in this report. These estimates highlight the scope of

this public health problem. However, to develop effective prevention measures, food safety agencies and partners need to understand the types of foods contributing to the problem.

The Interagency Food Safety Analytics Collaboration (IFSAC) is a tri-agency group created by CDC, the U.S. Food and Drug Administration (FDA), and the U.S. Department of Agriculture's Food Safety and Inspection Service (USDA-FSIS).

Fact

By bringing together data from CDC, FDA, and USDA-FSIS, and by developing sound analytical methods, IFSAC scientists can improve estimates of the sources of foodborne illness.

Key findings

Using outbreak surveillance data from 1998 through 2023, this report presents annual estimates of the percentages of foodborne illness attributed to 17 food categories for *Salmonella*, *Escherichia coli* (*E. coli*) O157, and *Listeria monocytogenes (Listeria).*

Highlights

- *Salmonella* illnesses came from a wide variety of foods.
  More than 75% of *Salmonella* illnesses were attributed to six food categories: chicken (19.1%), fruits (14.2%), seeded vegetables (13.0%, such as tomatoes), pork (11.7%), other produce (10.0%, such as nuts), and beef (7.8%).
- *E. coli* O157 illnesses were most often linked to two food categories.
  Over 85% of *E. coli* O157 illnesses were linked to vegetable row crops (67.9%, such as leafy greens) and beef (18.6%).
- *Listeria* illnesses were most often linked to three food categories.
  More than 75% of illnesses were attributed to dairy (31.9%), vegetable row crops (27.4%), and fruits (15.9%), but the rarity of *Listeria* outbreaks makes these estimates less reliable than those for other pathogens.

Attribution estimates for *Campylobacter* are not presented in this year's report. Evidence suggests the sources of *Campylobacter* outbreaks likely differ considerably from the sources of non-outbreak-associated illnesses caused by this pathogen. IFSAC continues to explore viable alternatives for estimating the sources of *Campylobacter* illnesses.

How we got the data

IFSAC derived these estimates using the same method used for previous estimates, with some modifications. The original method, dating back to the estimates from 2012, was described in a report and a peer-reviewed journal article.

The data in this year's report came from 49,848 illnesses linked to 1,390 foodborne disease outbreaks that occurred from 1998 through 2023 and for which each confirmed or suspected implicated food was assigned to a single food category. The method relies most heavily on the last five years of outbreak data (2019–2023).

Foods are categorized using a scheme IFSAC created that classifies foods into 17 categories that closely align with the U.S. food regulatory agencies' classification needs. Caution should be exercised when comparing estimates across years. For example, a decrease in a percentage may result from a decrease in the number of illnesses attributed to that food but may also reflect an increase in illnesses attributed to another food.

Resource

Examples of foods included in each food category can be found in the Appendix.

Why this report is important

This collaborative effort to provide annual attribution estimates continues IFSAC's work to improve foodborne illness source attribution, which can help inform efforts to prioritize food safety initiatives, interventions, and policies for reducing foodborne illnesses. These consensus estimates allow all three agencies to take a consistent approach to identifying food safety priorities to protect public health.

Introduction

Context and scope

Each year in the United States, an estimated 9.9 million people get sick, 53,300 are hospitalized, and 931 die of a foodborne disease caused by seven major food pathogens—including the three pathogens presented in this report.[1] These estimates highlight the scope of this public health problem. However, to develop effective prevention measures, food safety agencies and partners need to understand the percentage of foodborne illnesses associated with specific foods; we call this work **foodborne illness source attribution**.

With the creation of IFSAC in 2011, CDC, FDA, and USDA-FSIS agreed to improve data and methods used to estimate foodborne illness source attribution and provide timely estimates of the food sources of four priority foodborne pathogens: *Salmonella*, Shiga toxin-producing *E. coli* O157, *Listeria monocytogenes (Listeria)*, and *Campylobacter*. IFSAC considers these four pathogens to be priorities because of the frequency and severity of illness they cause, and because targeted interventions can significantly reduce these illnesses.

Consistent with the 2020–2022 reports, attribution estimates for *Campylobacter* are not presented due to observed limitations of using outbreak data to attribute *Campylobacter* illnesses to food sources. IFSAC continues to explore viable alternatives for estimating the sources of *Campylobacter* illnesses.

Analysis

IFSAC developed a method for analyzing outbreak data to estimate which foods are responsible for illnesses related to the four priority pathogens, using a scheme IFSAC created to classify foods into 17 categories that closely align with the U.S. food regulatory agencies' classification needs.[2] Examples of foods included in each food category can be found in the Appendix. IFSAC described this method and the resulting estimates for the year 2012 in a report and a peer-reviewed article.[3]

IFSAC derived these estimates using the same method, with some modifications. IFSAC publishes annual estimates of the sources of foodborne illness for the priority pathogens while continuing to work on methods to further improve these estimates.

Goals

The consensus among the three agencies on methods and attribution estimates can help inform efforts to prioritize food safety initiatives, interventions, and policies for reducing foodborne illnesses. These estimates achieve IFSAC's goals of using improved methods to develop estimates of foodborne illness source attribution for priority pathogens and of achieving consensus that these are the best current estimates for the agencies to use in their food safety activities.

These estimates can also help scientists; federal, state, and local policymakers; the food industry; consumer advocacy groups; and the public to assess whether prevention-oriented measures are working.

Methods

The data

Foodborne Disease Outbreak Surveillance System[45] on outbreaks (defined as two or more illnesses with a common exposure[6]) that were confirmed or suspected to be caused by three priority pathogens — *Salmonella*, *E. coli* O157, and *Listeria* — from 1998 through 2023.

Because the analysis only includes *E. coli* O157 outbreaks,[A] outbreaks caused by a combination of O157 and non-O157 *E. coli* are excluded. Similarly, outbreaks caused by a combination of *Salmonella* Enteritidis (SE) and any other *Salmonella* serotype are omitted because IFSAC's method runs two separate models for SE and non-SE outbreaks.[3] Outbreaks caused by multiple non-SE serotypes of *Salmonella*, however, are included.

Finally, the analysis excludes outbreaks that met one or more of the following conditions: occurred solely in a U.S. territory; had no identified food vehicle or contaminated ingredient; or were caused by more than one pathogen, including pathogens not included in this report.

Food categories

Each outbreak was assigned to a single food category using the IFSAC food categorization scheme[2] based on confirmed or suspected implicated foods and ingredients (i.e., a single ingredient was confirmed or suspected to be implicated or all ingredients in the food were assigned to the same food category).

We excluded outbreaks that could not be assigned to a single food category, as the food was often complex (i.e., composed of ingredients belonging to more than one category) and the contaminated ingredient in the complex food could not be identified.

Modeling

We developed pathogen-specific analysis of variance models using our previously described method[3] to mitigate the impact of large outbreaks and control for epidemiological factors. We estimated the number of log-transformed illnesses associated with each outbreak based on three factors deemed to be important during exploratory analyses: food category, type of preparation location (e.g., restaurant, home), and whether the outbreak occurred in one or more states.

Model estimates were back-transformed and down-weighted with a function that declines exponentially for outbreaks older than the most recent five years (i.e., before 2019) because

we considered foods more recently implicated to be the most relevant for estimating current attribution.

For *Salmonella* and *E. coli* O157, we assigned outbreaks to the year in which the first illnesses occurred. However, since the 2021 report, we have adjusted our method to assign model-estimated illnesses for *Listeria* outbreaks proportionally to the years in which illnesses in that outbreak occurred. This change reflects the fact that about half of *Listeria* outbreaks in our data span multiple years.

Estimating source attribution

We used the resulting down-weighted model-estimated illnesses to calculate each estimated attribution percentage: the sum of illnesses associated with a pathogen-food category pair was divided by the sum of illnesses associated with that pathogen across all food categories.

We calculated 90% credibility intervals and considered non-overlapping credibility intervals an indication of statistical significance at the $p<0.10$ level. After down-weighting, 56% of overall data came from the most recent five years (2019–2023), 38% from the next most recent five years (2014–2018), and 6% from the oldest data (1998–2013).

In the graphs and tables, food categories appear in descending order of their estimated attribution percentage, and those that contributed to a cumulative attribution of approximately 75% of illnesses are indicated.

Results

Outbreaks

We identified 4,156 outbreaks that occurred from 1998 through 2023 and were confirmed or suspected to be caused by *Salmonella*, *E. coli* O157, or *Listeria*. These included 224 outbreaks that were confirmed or suspected to be caused by multiple pathogens or serotypes. Of these, we excluded 113 outbreaks according to our pathogen exclusion criteria, leaving 4,043 outbreaks. We further excluded

- 1,755 outbreaks without a confirmed or suspected implicated food
- 892 outbreaks for which the food vehicle could not be assigned to one of the 17 food categories, and
- 6 outbreaks that occurred solely in a U.S. territory.

The resulting dataset included **1,390 outbreaks** in which the confirmed or suspected implicated food or foods could be assigned to a single food category. These outbreaks were

caused or suspected to be caused by:

1,037 outbreaks (including 50 outbreaks caused by multiple serotypes of *Salmonella*)

285 outbreaks

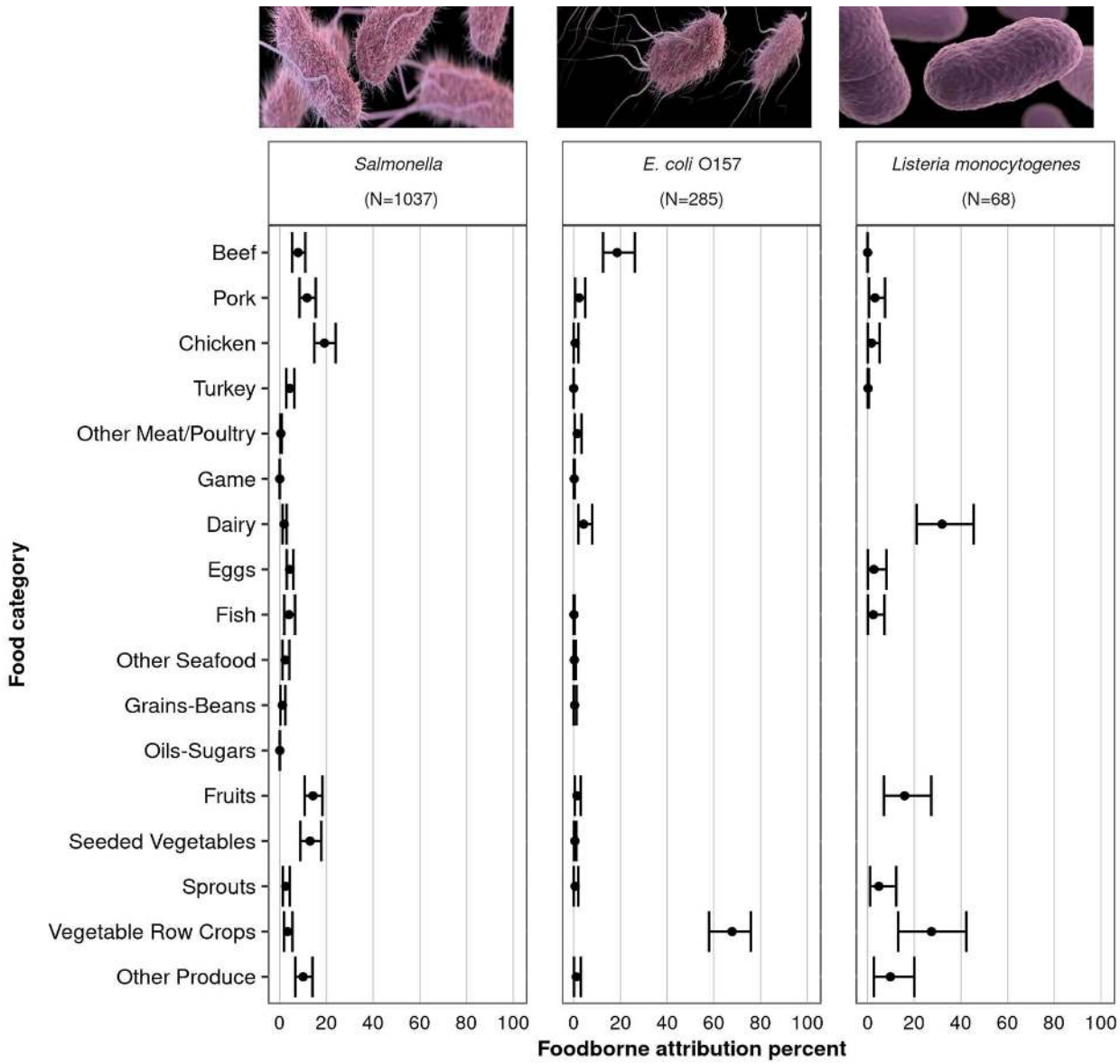
Due to down-weighting, the last five years of outbreaks provided the majority of information for the estimates; outbreaks from 2019 through 2023 provided 57% of model-estimated illnesses used to calculate attribution for *Salmonella*, 59% for *E. coli* O157, and 31% for *Listeria*.

The overall results and those for each pathogen are shown in Figures 1 through 4 below.

Overall

Figure 1

Estimated percentage (with 90% credibility intervals) of foodborne *Salmonella*, *E. coli* O157, and *Listeria* illnesses attributed to 17 food categories based on 1998–2023 outbreak data, United States



Based on a model using outbreak data that gives equal weight to each of the most recent five years of data (2019–2023) and exponentially less weight to each earlier year (1998–2018).

[Download data]

Key results

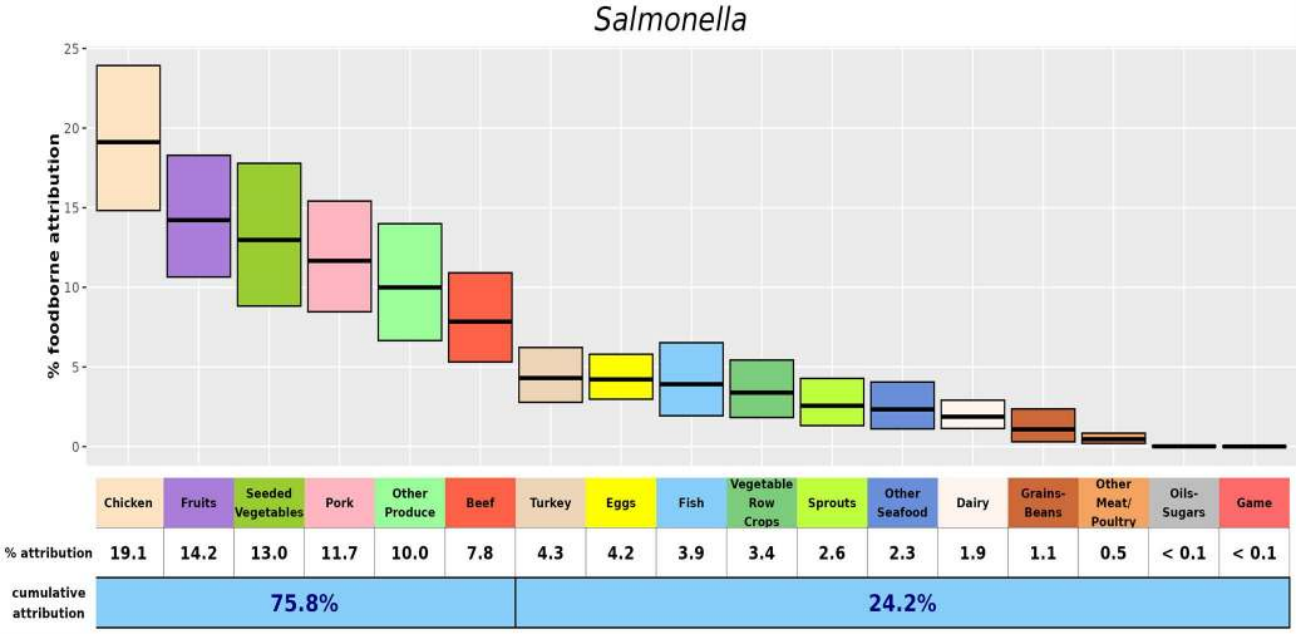
- Results are based on 1,037 outbreaks caused or suspected to be caused by *Salmonella*, 285 by *E. coli* O157, and 68 by *Listeria*.
- Estimated *Salmonella* illnesses were more evenly distributed across several food categories compared with illnesses from *E. coli* O157, and *Listeria* where most of the illnesses were attributed to fewer than four food categories.

- Credibility intervals overlap for most *Salmonella* and all *Listeria* categories that make up the top 75% of attribution sources, indicating no statistically significant difference among them.

Salmonella

Figure 2

Estimated percentage of foodborne *Salmonella* illnesses (with 90% credibility intervals), in descending order, attributed to each of 17 food categories, based on 1998–2023 outbreak data, United States



Based on a model using outbreak data that gives equal weight to each of the most recent five years of data (2019–2023) and exponentially less weight to each earlier year (1998–2018).

[Download data]

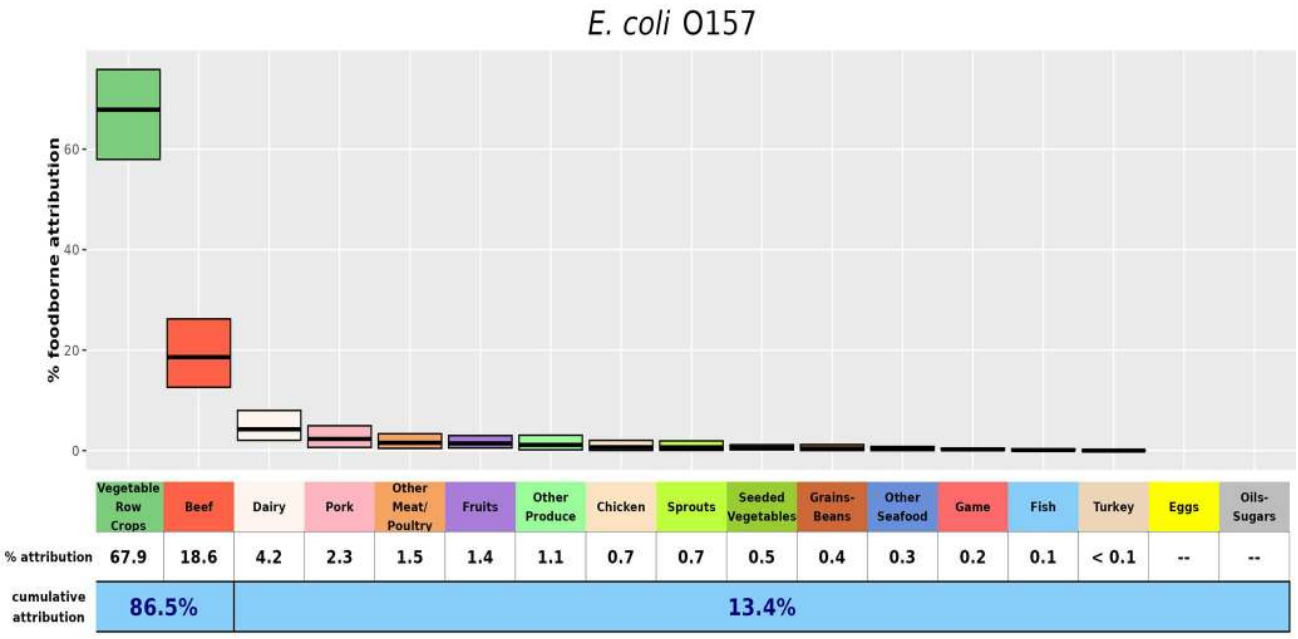
Key results

- Over 75% of illnesses were attributed to six food categories: chicken, fruits, seeded vegetables (such as tomatoes), pork, other produce (such as nuts), and beef.
- The credibility intervals for each of the six food categories that account for 75.8% of all illnesses overlap with the intervals of some other categories.

E. coli O157

Figure 3

Estimated percentage of foodborne *E. coli* O157 illnesses (with 90% credibility intervals), in descending order, attributed to each of 17 food categories, based on 1998–2023 outbreak data, United States



Based on a model using outbreak data that gives equal weight to each of the most recent five years of data (2019–2023) and exponentially less weight to each earlier year (1998–2018).

[Download data]

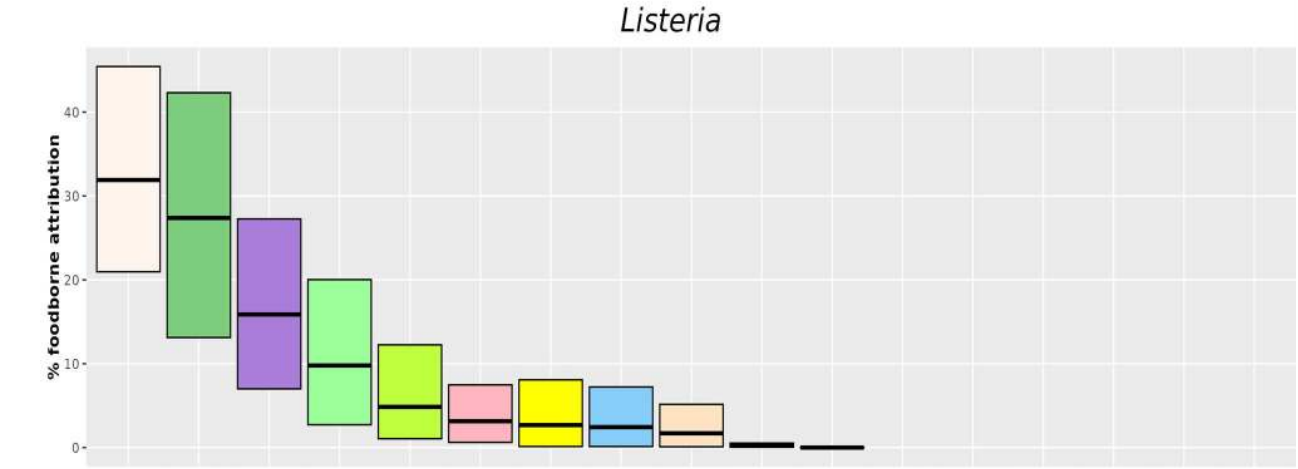
Key results

- Over 85% of *E. coli* O157 illnesses were attributed to vegetable row crops (such as leafy greens) and beef.
- Vegetable row crops had a significantly higher estimated attribution percentage than all other categories.
- Beef had a significantly higher estimated attribution percentage than all categories other than vegetable row crops.
- No illnesses were attributed to eggs or oils-sugars.

Listeria monocytogenes

Figure 4

Estimated percentage of foodborne *Listeria* illnesses (with 90% credibility intervals), in descending order, attributed to each of 17 food categories, based on 1998–2023 outbreak data, United States



	Dairy	Vegetable Row Crops	Fruits	Other Produce	Sprouts	Pork	Eggs	Fish	Chicken	Turkey	Beef	Other Meat/ Poultry	Game	Other Seafood	Grains-Beans	Oils-Sugars	Seeded Vegetables
% attribution	31.9	27.4	15.9	9.8	4.9	3.1	2.7	2.4	1.7	0.2	< 0.1	--	--	--	--	--	--
cumulative attribution	75.2%											24.8%					

Based on a model using outbreak data that gives equal weight to each of the most recent five years of data (2019–2023) and exponentially less weight to each earlier year (1998–2018).

[Download data]

Key results

- Over 75% of illnesses were attributed to dairy, vegetable row crops, and fruits.
- Credibility intervals for the dairy, fruits, and vegetable row crops categories were wide, partly due to the small total number of outbreaks (68).
- No illnesses were attributed to other meat/poultry, game, other seafood, grains-beans, oils-sugars, and seeded vegetables.

Discussion

This report uses data from 1998 through 2023 to provide outbreak-based attribution estimates of the percentages of illnesses caused by three (*Salmonella*, *E. coli* O157, and *Listeria)* of four priority pathogens, attributing illnesses to each of the 17 food categories.

Data from foodborne disease outbreaks are the foundation of many foodborne illness source attribution analyses, in part because outbreak investigations often link illnesses to a specific food, and the data are captured nationally. These estimates can inform food safety decision-making and provide pathogen-specific direction for reducing foodborne illness.

Similar to the 2021–2022 reports, we have assigned illnesses in multi-year *Listeria* outbreaks to different years based on the proportion of cases that occurred during each year of the outbreak. Weighting cases across the years of the outbreak proportionally gives an improved representation of the impact of that food category on the estimates.

Key takeaways

Salmonella

The attribution of *Salmonella* illnesses to multiple food categories suggests that interventions designed to reduce illnesses from these pathogens need to target a variety of food categories.

E. coli

In contrast, most *E. coli* O157 illnesses were attributed to two food categories: vegetable row crops and beef. These data suggest that interventions for *E. coli* O157 focusing on these two food categories may be most effective in reducing illnesses.

Similar to prior reports, vegetable row crops had a significantly higher estimated *E. coli* O157 attribution percentage than all other food categories.

Listeria

Most *Listeria* illnesses were attributed to three food categories: dairy, vegetable row crops, and fruits.

Although the limited number of outbreaks and wide credibility intervals dictate caution in interpreting the attribution percentage for dairy, the risk to pregnant women and persons with weakened immune systems of consuming soft cheese made from unpasteurized milk or in unsanitary conditions is well-recognized,[7] and outbreaks from fruits contaminated by *Listeria* have been observed in recent years.[8][9][10]

Limitations

Campylobacter

Attribution estimates for *Campylobacter* are not presented in this year's report due to continued concerns about the limitations of using outbreak data to attribute *Campylobacter*

illnesses to sources.

As described in the 2021 IFSAC Report, these concerns are largely due to the outsized influence of outbreaks in certain foods that pose a high individual risk for *Campylobacter* infection but do not represent the risk to the general population. Most of the reported *Campylobacter* outbreaks related to dairy were associated with unpasteurized milk (164/180, 91%) and most reported *Campylobacter* outbreaks related to chicken were due to chicken liver products (54/85, 64%), both of which are not widely consumed.[11]

A lack of representativeness heightens the likelihood that the sources of reported *Campylobacter* outbreaks differ considerably from the sources of non-outbreak-associated illnesses. In response to these limitations, IFSAC analysts are developing other methods to estimate the sources of *Campylobacter* infection. For example, IFSAC is exploring methods using data associated with sporadic infections, including genomic information from patient isolates and case exposure data collected by FoodNet sites.

Multi-year outbreaks

This analysis includes two *Listeria* outbreaks that spanned multiple years and were not included in prior reports because the investigations had not been completed.

Multi-year outbreaks are solved in large part because whole-genome sequencing is used to link human and food isolates across multiple years. In some outbreaks, recent nonclinical isolates (such as food isolates) are subsequently linked to clinical cases from the past.[12]

Uncertainties

Our analytical approach addresses several issues with outbreak-based foodborne illness source attribution, yet limitations associated with generalizing outbreak data to sporadic illnesses remain and are well-documented.[4][5]

Our analysis is also subject to other uncertainties and biases.

- For pathogens with a small number of outbreaks, outbreaks with a very large illness count can have substantial influence on the attribution point estimate.
- The analysis only included 33% (1,390 of 4,156) of reported outbreaks caused by the three priority pathogens because we excluded those outbreaks that occurred solely in a U.S. territory, those in which the implicated food could not be assigned to a single food category, and those that did not meet our pathogen inclusion criteria. The ones we included might not be representative of all outbreaks caused by these pathogens.

- The analysis includes illnesses that occurred among institutionalized populations, such as those in prisons, hospitals, and schools. These populations are easier to identify and collect complete data from, have fewer food options, are more likely to have documentation of what was served, and are not representative of the general population.

Caution in interpretation

- These estimates should not be interpreted as suggesting that all foods in a category are equally likely to transmit pathogens.
- Caution should also be exercised when comparing estimates across years.
    - A decrease in a percentage may result, not from a decrease in the number of illnesses attributed to that food category, but from an increase in illnesses attributed to another food category.
    - This is especially true for *Listeria*, as the attribution percentages might vary widely from year to year due to the limited number of outbreaks and the zero-sum nature of the attribution percentages.
- The analyses show relative changes in percentage, not absolute changes in attribution to a specific food. Therefore, we advise using these results with other scientific data for decision-making.

Conclusions

IFSAC's work to provide a harmonized analytic approach for estimating foodborne illness source attribution from outbreak data can provide consistency in the use and interpretation of estimates across public health and regulatory agencies.

As more data become available and methods evolve, attribution estimates may improve. Annual updates to these estimates will enhance IFSAC's efforts to inform and engage stakeholders, and further their ability to assess whether prevention measures are working.

IFSAC continues to enhance attribution efforts through projects that address limitations identified in this report.

Appendix

Expand All

Representative examples of foods contained in IFSAC categories presented in the annual report

Acknowledgments

The methods used for this report were developed by members of the Interagency Food Safety Analytics Collaboration (IFSAC), which includes the Centers for Disease Control and Prevention (CDC), the U.S. Food and Drug Administration (FDA), and the U.S. Department of Agriculture's Food Safety and Inspection Service (USDA-FSIS).

Suggested citation

Interagency Food Safety Analytics Collaboration. IFSAC 2023 annual report: Foodborne illness source attribution estimates for *Salmonella*, *Escherichia coli* O157, and *Listeria monocytogenes*, United States, a weighted approach using 1998–2023 outbreak data. GA and D.C.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Food and Drug Administration, U.S. Department of Agriculture's Food Safety and Inspection Service. March 27, 2026.

IFSAC Publications

Estimates: Burden of Foodborne Illness in the United States

cdc.gov/food-safety/php/data-research/foodborne-illness-burden/index.html

CDC 19 de março de 2025

For Public Health

What to know

- Foodborne illness estimates can serve as a foundation for future public health action.
- CDC estimated the average number of U.S. foodborne illnesses, hospitalizations, and deaths in 2019 caused by seven major pathogens.
- Six of these pathogens caused 9.9 million domestically acquired foodborne illnesses.
- Illnesses caused by all seven pathogens resulted in 53,300 hospitalizations and 931 deaths.



Why do we estimate?

Knowing how many foodborne illnesses occur – or the burden of disease – provides us with a better understanding of an important public health problem.

Surveillance systems and surveys provide vital information about the burden of foodborne illness in the United States, but they do not capture *every* illness.

Because only a fraction of illnesses is diagnosed and reported, we need periodic assessments of the total burden of illness to set public health goals, allocate resources, and measure the economic impact of disease.

We use the best data available and make reasonable adjustments – based on surveys, study results, and statistical methods – to account for shortcomings and missing pieces of information.

What did we estimate?

Read the full report

CDC estimated the average number of U.S. foodborne illnesses, hospitalizations, and deaths in 2019 caused by seven major pathogens: *Campylobacter spp.*, *Clostridium perfringens*, invasive *Listeria monocytogenes*, norovirus, nontyphoidal *Salmonella*, Shiga toxin-producing *Escherichia coli* (STEC), and *Toxoplasma gondii*. These are some of our findings.

Main findings

Illnesses

The major pathogens, excluding *Toxoplasma gondii*, caused an estimated 9.9 million domestically acquired foodborne illnesses.

53,300 hospitalizations

An estimated 53,300 hospitalizations resulted from domestically acquired foodborne illnesses caused by the seven pathogens.

931 deaths

An estimated 931 deaths resulted from domestically acquired foodborne illnesses caused by the seven pathogens.

Top 5 contributors

Illnesses

Norovirus, *Campylobacter*, *Salmonella*, *C. perfringens*, and STEC caused the most illnesses.

Hospitalizations

Norovirus, *Campylobacter*, *Salmonella*, STEC, and *Listeria* caused the most hospitalizations.

Deaths

Salmonella, *Campylobacter*, norovirus, *Listeria*, and STEC caused the most deaths.

Other findings

- Norovirus was the leading cause of domestically acquired foodborne illnesses (5.5 million) and hospitalizations from these illnesses (22,400).
- *Salmonella* was the leading cause of domestically acquired foodborne illnesses resulting in death (238).
- The top five *Salmonella* serotypes causing foodborne illnesses were Enteritidis (23% of *Salmonella* infections), Newport (14%), Typhimurium (11%), I 4,[5],12:i- (7%), and Javiana (7%). These five *Salmonella* serotypes, in order from highest to lowest, also caused the most hospitalizations.
- Non-O157 serogroups caused 76% of STEC illnesses compared with 24% caused by O157 serotypes.
- Invasive *Listeria* caused 1,050 non-pregnancy-associated illnesses and 198 pregnancy-associated illnesses.

At a glance

Estimated annual number of foodborne illnesses, hospitalizations, and deaths caused by seven major pathogens, United States, circa 2019

Pathogen	Illnesses	Hospitalizations	Deaths
Campylobacter spp.	1,870,000	13,000	197
C. perfringens	889,000	338	41
Listeria	1,250	1,070	172
Norovirus	5,540,000	22,400	174
Salmonella	1,280,000	12,500	238
STEC	357,000	3,150	66
Toxoplasma	NA	848	44
Total	**9.9 million***	**53,300**	**931**

*Excluding *Toxoplasma*: Laboratory-confirmed illness data are not available because *Toxoplasma* illness is not nationally notifiable.

Keep in mind

This table is condensed. For more information, refer to the tables in the publication.

Dive deeper

- Read the publication: Foodborne illness acquired in the United States—Major pathogens, 2019
- Get answers to commonly asked questions
- Learn about the methods and data sources

Methods

Exhibit C.II - Second Prong - Well Positioned to Advance the Proposed Endeavor

FEDERATIVE REPUBLIC OF BRAZIL
FEDERAL COUNCIL OF VETERINARY MEDICINE
PROFESSIONAL IDENTITY CARD
VETERINARIAN
Regional Council of Veterinary Medicine of the State of Minas Gerais



Name
HANNA CAROLINA CAMPOS FERREIRA

CPF
067.410.916-37

Registration Number
MG-10058-VP

MG1055931

Holder's Signature

CFMV

FEDERAL COUNCIL OF VETERINARY MEDICINE



Filiation
YULO ANTONIO FERREIRA DE SA

MARIANE CAMPOS FERREIRA

Date of Birth
09/25/1984

Place of Birth
JANUARIA - MG

CRMV-MG

Nationality
BRAZILIAN

Serial Number
MG20250751700

Place and Date of Issuance
Minas Gerais, January 22, 2025

Signature of the President of Regional Council
of Veterinary Medicine of Minas Gerais (CRMV-MG)

VALID THROUGHOUT THE ENTIRE NATIONAL TERRITORY
Law No. 6.206/75

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 22, 2026.

REPÚBLICA FEDERATIVA DO BRASIL
CONSELHO FEDERAL DE MEDICINA VETERINÁRIA
CÉDULA DE IDENTIDADE PROFISSIONAL
MÉDICO-VETERINÁRIO
Conselho Regional de Medicina Veterinária do Estado de Minas Gerais



Nome
HANNA CAROLINA CAMPOS FERREIRA

CPF
067.410.916-37

Número da Inscrição
MG-10058-VP

MG1055931

Assinatura do Portador

CFMV

CONSELHO REGIONAL DE MEDICINA VETERINÁRIA



Filiação
YULO ANTONIO FERREIRA DE SA

MARIANE CAMPOS FERREIRA

Data de Nascimento
25/09/1984

Naturalidade
JANUÁRIA - MG

CRMV-MG

Nacionalidade
BRASILEIRA

Número de Série
MG20250751700

Local e Data de Expedição
Minas Gerais, 22 de janeiro de 2025

Assinatura do Presidente CRMV-MG

VÁLIDO EM TODO O TERRITÓRIO NACIONAL
LEI Nº 6.206/75

you are also required to use them to prevent accidents and avoid occupational diseases.

Show your new coworker the dangers that surround them at work.

Each accident is a lesson that should be valued to prevent greater tragedies.

Every accident has a cause that needs to be investigated to prevent its recurrence.

If you are injured, seek appropriate medical assistance promptly. Do not let "know-it-alls" and "curious onlookers" contribute to worsening your injury.

If you're not an electrician, don't attempt to do electrical work.

Seek immediate medical help if you are a victim of an accident; tomorrow may be too late.

Machines don't respect anyone, but you must respect them.

Follow the recommendations of the CIPA (Internal Commission for Accident Prevention) members, your supervisors, and managers.

Always know the safety rules of the section where you work.

Talking and arguing at work predisposes one to accidents due to inattention.

Always read and reflect on the teachings contained in posters and notices about accident prevention.

Rings, bracelets, ties, and long sleeves are not part of your work uniform.

Always keep the safety guards of machines in place.

Stop the machine when you need to repair or lubricate it.

Get used to working safely to prevent accidents. Use equipment suitable for your job.

Know how to handle the fire extinguishers and other fire-fighting devices at your workplace. You may need to use them someday.

MINISTRY OF LABOR AND EMPLOYMENT

EMPLOYMENT RECORD BOOK AND SOCIAL SECURITY

MTB - DRT - MG - SDT (AM PM)

Issued via Partnership Agreement



Number 39.346 Series 0152/MG

Flamma Carolina C. Ferreira

HOLDER'S SIGNATURE

CIVIL QUALIFICATION

Name ...HANNA CAROLINA CAMPOS FERREIRA.....

.....

Place of Birth ...JANUARIA..... State ....MG..... Date ..09/25/84..

Filiation ...MARIANE CAMPOS FERREIRA AND.....

.....PAULO ANTONIO FERREIRA DE SA.....

Document No. ID MG 12.992.107 SSP-MG.....

FOREIGNERS

Arrival in Brazil .../...../...../.....Identity Document No. .....

Issued on ...../...../.....State .....

Notes ...JANUÁRIA - MG.....

Issuing Date ..10/28/2005... DRT (Regional Labor Office) ...MG.....

MTB - DRT - MG
SDT em PARACATU
Issued via Partnership Agreement

-----//signature//-----

PAULO PEREIRA GUEDES

.....

Employee Signature

IDENTITY CHANGES

(Regarding name, marital status, and date of birth)

Name .....

.....

Document .....

.....

Name .....

.....

Document .....

Marital Status .....

.....

Document .....

Marital Status .....

.....

Document .....

Birth .....

.....

Document .....

.....

.....

12

EMPLOYMENT CONTRACT

Employer 04.097.860/0001-46

CESG - CENTRO DE EDUCAÇÃO

CNPJ/MF SUPERIOR DE GUANAMBI

Street No.

Av. Barão do rio Branco, 459

City State

Centro - ZIP CODE 46.430-000

Specification of the Establishment

Occupation PROFESSOR Guanambi - Bahia

FULL-TIME CBO No. 234510

Date of Hire April, 7, 2016

Registration No. 0963 Pages/Record

Specified Remuneration R$ 35.16 (thirty-five reais and sixteen centavos) per teaching hour.

-----//signature//------

Signature of the employer or by proxy with witness

1st 2nd

CESG - Centro de Edu. Sup. de Guanambi

Date of Termination FEBRUARY 09, 2017

-----//signature//------

Signature of the employer or by proxy with witness

1st 2nd

CESG - Centro de Edu. Sup. de Guanambi

Termination Note CD No.

13

EMPLOYMENT CONTRACT

Employer

CGC/MF

Street No.

City State

Specification of the Establishment

Occupation

CBO No.

Date of Hire

Registration No. Pages/Record

Specified Remuneration

1st 2nd

Date of Termination

Signature of the employer or by proxy with witness

1st 2nd

Termination Note CD No.

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 21, 2026

você também está obrigado a usá-los, para prevenir acidentes e evitar as doenças profissionais.

Mostre ao seu novo companheiro os perigos que o cercam no trabalho.

Cada acidente é uma lição que deve ser apreciada, para evitar maiores desgraças.

Todo o acidente tem uma causa que é preciso ser pesquisada, para evitar a sua repetição.

Se você for acidentado, procure logo o socorro médico adequado. Não deixe que "entendidos" e "curiosos" concorram para o agravamento de sua lesão.

Se você não é eletricista, não se meta a fazer serviços de eletricidade.

Procure o socorro médico imediato, se você for vítima de um acidente, amanhã será tarde demais.

As máquinas não respeitam ninguém; mas você deve respeitá-las.

Atenda às recomendações dos Membros da CIPA e de seus mestres e chefes.

Conheça sempre as regras de segurança da seção onde você trabalha.

Conversa e discussão no trabalho predispõem a acidentes pela desatenção.

Leia e reflita sempre os ensinamentos contidos nos cartazes e avisos sobre prevenção de acidentes.

Os anéis, pulseiras, gravatas e mangas compridas não fazem parte do seu uniforme de trabalho.

Mantenha sempre as guardas protetoras das máquinas nos devidos lugares.

Pare a máquina quando tiver que consertá-la ou lubrificá-la.

Habitue-se a trabalhar protegido contra os acidentes. Use equipamentos de proteção adequados a seu serviço.

Conheça o manejo dos extintores e demais dispositivos de combate ao fogo existentes em seu local de trabalho. Você pode ter necessidade de usá-los algum dia.

MINISTÉRIO DO TRABALHO E EMPREGO

CARTEIRA DE TRABALHO E PREVIDÊNCIA SOCIAL

MTB - DRT - MG - SDT CONVÊNIO



Número 39.346 Série 015a/MG

Ramona Carolina C. Ferreira

ASSINATURA DO PORTADOR

QUALIFICAÇÃO CIVIL

Nome Hanna carolina campos ferreira

Loc. Nasc. Januaria Est. MG Data 25 / 09 / 84

Filiação Mariane Campos Ferreira e Paulo Antonio Ferreira de Sa

Doc. Nº C.I. MG-12.992.107 SSP-MG

ESTRANGEIROS

Chegada ao Brasil em ..... / ..... / ..... Doc. Ident. Nº .....

Exp. em ..... / ..... / ..... Estado .....

Obs.: Januaria - MG

Data Emissão 28 / 10 / 2005 DRT MG

Paulo Pereira Guedes

Assinatura do Funcionário

SDS - MTB - DRT - MG
CONVÊNIO
PM JANUARIA

ALTERAÇÕES DE IDENTIDADE

(Com relação nome, est. civil e data nasc.)

Nome .....

Doc. .....

Nome .....

Doc. .....

Nome .....

Doc. .....

Est. Civil .....

Doc. .....

Nascimento .....

Doc. .....

CONTRATO DE TRABALHO

Empregador 04.097.860/0001-46
CESG-CENTRO DE EDUCAÇÃO
CNPJ/MF SUPERIOR DE GUANAMBI
Rua Av. Barão do Rio Branco, 458 Nº
Município Centro - CEP: 46.430-000 Est.
Esp. do estabelecimento Guanambi - Bahia
Cargo PROFESSOR
REG. INTEGRAL CBO nº 234510
Data admissão 07 de ABRIL de 2016
Registro nº 0963 Fls./Ficha
Remuneração especificada R$ 35,16 (trinta e cinco reais e dezesseis centavos) HORA/AULA.

Ass. do empregador ou a rogo c/test.
CESG - Centro de Educ. Sup. de Guanambi Ltda.
1º 2º
Data saída 09 de FEVEREIRO de 2017

Assado empregador ou a rogo c/test.
CESG - Centro de Educ. Sup. de Guanambi Ltda.
1º 2º
Com. Dispensa CD Nº

CONTRATO DE TRABALHO

Empregador
CNPJ/MF
Rua Nº
Município Est.
Esp. do estabelecimento
Cargo
CBO nº
Data admissão de de
Registro nº Fls./Ficha
Remuneração especificada

Ass. do empregador ou a rogo c/test.
1º 2º
Data saída de de

Ass. do empregador ou a rogo c/test.
1º 2º
Com. Dispensa CD Nº

UNIFG
UNIVERSITY CENTER

DECLARATION

We hereby declare, for all due purposes, that Hanna Carolina Campos Ferreira, holder of CPF No. 067.410.916-37, CTPS No. 00039346-00152-MG, worked at this Educational Institution (CESG – Centro de Educação Superior de Guanambi LTDA), the maintaining institution of Guanambi College, from 04/07/2016 to 02/09/2017, in the following positions:

1) Coordinator of the Veterinary Medicine Program, on a full-time basis (40 hours), performing the following activities: academic management of the Veterinary Medicine Program; participation in the structuring and administration of the Program, including planning for a Veterinary Hospital and affiliated laboratories, development of the curriculum and promotion of academic events; responding to specific administrative and academic matters related to the Program; updating and implementing the Program's Pedagogical Project; coordinating the appropriate forums for conducting the Program's agendas (Collegiate Body and Teaching Staff Development Core); monitoring faculty members; providing weekly assistance to students regarding teaching, research, and extension activities; verifying the quality of classes with students; surveying, updating, and requesting the acquisition of bibliographic references for the Program; maintaining dialogue with the Self-Assessment Committee and the Pedagogical and Psychopedagogical Center in order to obtain assessment information regarding the Program's performance and student learning; maintaining professional relationships with other higher education institutions in order to establish partnerships to support and meet the theoretical and practical learning needs of students.

2) Faculty Member of the Veterinary Medicine Program, teaching the following courses: General Microbiology (course load: 60 hours), Veterinary Microbiology (course load: 60 hours), and Veterinary Immunology (course load: 30 hours). In this position, the following activities were performed: preparation and delivery of theoretical and practical classes; continuous assessment of students (attendance, participation, and learning progress); preparation and grading of examinations and supplementary activities as reinforcement strategies; disciplinary work with students; seeking partnerships to promote dynamic practical classes; participation in the structuring of the Veterinary Medicine Program; referring students with learning difficulties to the Pedagogical and Psychopedagogical Center; encouraging students to participate in internship and teaching assistantship activities.

In witness whereof, we issue this declaration.

Guanambi, Bahia, April 2, 2019.

Lourinaldo Paulo dos Santos
Payroll Analyst RM
CRC-BA 17025

CESG – CENTRO DE EDUCAÇÃO SUPERIOR DE GUANAMBI LTDA

UNIFG

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 21, 2026

UNIFG
CENTRO UNIVERSITÁRIO

DECLARAÇÃO

Declaramos, para os devidos fins, que Hanna Carolina Campos Ferreira, portadora do CPF nº 067.410.916-37, CTPS nº 00039346-00152MG, trabalhou nesta Instituição de Ensino (CESG - Centro de Educação Superior de Guanambi LTDA), mantenedora da Faculdade Guanambi, no período de 07/04/2016 a 09/02/2017 nas funções de:
1) Coordenadora do Curso de Medicina Veterinária, com carga horária de regime integral (40 horas), desenvolvendo as seguintes atividades: gestão acadêmica do Curso de Medicina Veterinária; participação na estruturação e administração do Curso, incluindo projeção de Hospital Veterinário e de laboratórios vinculados, estruturação de matriz curricular e promoção de eventos acadêmicos; respostas às questões de ordens administrativa e acadêmica específicas do Curso; atualização e execução do Projeto Pedagógico do Curso; articulação dos fóruns apropriados para condução das agendas do Curso (Colegiado e Núcleo Docente Estruturante); acompanhamento dos docentes; atendimento semanal dos discentes referentes às atividades de ensino, pesquisa e extensão; verificação da qualidade das aulas com os discentes; levantamento, atualização e solicitação de aquisição de referências bibliográficas ao Curso; relações de diálogo com a Comissão Própria de Avaliação e com o Centro Pedagógico e Psicopedagógico a fim de captar subsídios de avaliação do desempenho do curso e da aprendizagem dos alunos; manutenção de relações profissionais com outras instituições de ensino superior a fim de captar parcerias para subsidiar e atender às necessidades teórico-práticas na aprendizagem dos discentes.
2) Docente do Curso de Medicina Veterinária, ministrando as disciplinas de Microbilgia Geral (carga horária: 60 horas), Microbiologia Veterinária (carga horária: 60 horas) e Imunologia Veterinária (carga horária: 30 horas). Nesta função, as seguintes atividades foram desenvolvidas: preparação e condução de aulas teóricas e práticas; avaliação continuada dos discentes (frequência, participação e evolução do aprendizado); elaboração e correção de provas e atividades complementares como estratégias de reforço; trabalho disciplinar com os discentes; busca por parcerias para dinamismo de aulas práticas; paticipação da estruturação do Curso de Medicina Veterinária; encaminhamento de discentes com dificuldades de aprendizado ao Centro Pedagógico e Psicopedagógico; estímulo discente às atividades de estágio e monitoria.

Por expressão da verdade, firmamos a presente.

Guanambi-BA, 02 de abril de 2019.

CESG – CENTRO DE EDUCAÇÃO SUPERIOR DE GUANAMBI LTDA

Lourivaldo Prado dos Santos
ANALISTA DE FOLHA DE PESSOAL RH
CRC-BA 17029-O
UNIFG CENTRO UNIVERSITÁRIO

GUANAMBI
COLLEGE
KNOWLEDGE CLOSE TO YOU

ACADEMIC VICE-DIRECTOR'S OFFICE
ORDINANCE 14/2016

Provides for the appointment of the Coordinator of the Bachelor's Degree Program in Veterinary Medicine; composition of the Teaching Staff Development Core (NDE) and the Collegiate Body of said program.

The Academic Vice-Director of Guanambi College, in the exercise of his powers and in accordance with the provisions of the Institution's General Regulations, resolves:

Art. 1. Prof. Dr. Hanna Carolina Campos Ferreira is hereby appointed Coordinator of the Bachelor's Degree Program in Veterinary Medicine at Guanambi College.

Art. 2. The following faculty members are hereby appointed as members of the Teaching Staff Development Core (NDE) of the Bachelor's Degree Program in Veterinary Medicine at Guanambi College: Gonçalo Mesquita da Silva, Hanna Carolina Campos Ferreira, José de Souza Abreu Júnior, Pablo Teixeira Viana, Ralael Gomes e Souza de Barros, and Rodrigo Rodrigues Alvarenga.

Art. 3. The following faculty members are hereby appointed as full members of the Collegiate Body of the Bachelor's Degree Program in Veterinary Medicine at Guanambi College: Cassyo de Araújo Rufino, Gonçalo Mesquita da Silva, Hanna Carolina Campos Ferreira, Hozana Leite Dantas, José de Souza Abreu Júnior, Juliana Mendonça dos Santos Lopes, Laudicéio Viana Matos, Pablo Teixeira Viana, Rafael Gomes e Souza de Barros, and Rodrigo Rodrigues Alvarenga.

Art. 4. The following faculty members are hereby appointed as alternate members of the Collegiate Body of the Bachelor's Degree Program in Veterinary Medicine at Guanambi College: Charles Neris Moreira, Lilian Kirdeika Martins, and Luciano Hasimoto Malheiro.

Art. 5. This Ordinance shall enter into force on the date hereof and shall be published on the official FG website (www.faculdadeguanambi.edu.br) and through other communication channels of the Institution.

Guanambi, July 25, 2016.

Mauro César Ribeiro
Academic Vice-Director

GUANAMBI
COLLEGE
KNOWLEDGE CLOSE TO YOU

DECLARATION

We hereby declare, for all due purposes, that **HANNA CAROLINA CAMPOS FERREIRA**, registered under CPF No. 087.410.916-37, holder of ID No. MG 12.992.107 SSP/MG, has been working at this Higher Education Institution, CESG – Centro de Educação Superior de Guanambi (FG), in the position of Faculty Member, from April 7, 2016 to the present date.

In witness whereof, we issue this declaration.

Guanambi, Bahia, April 8, 2016.

Ana Claudia Nobre
HR Coordinator
GUANAMBI
COLLEGE
CESG - CENTRO DE EDUCAÇÃO SUPERIOR DE GUANAMBI LTDA.

CNPJ Nº 04.097.860/0001-46

GUANAMBI
COLLEGE
KNOWLEDGE CLOSE TO YOU

DECLARATION

We hereby declare, for all due purposes, that **HANNA CAROLINA CAMPOS FERREIRA**, registered under CPF No. 067.410.916-37, holder of ID No. MG 12.992.107 SSP/MG, has been working at this Higher Education Institution, CESG – Centro de Educação Superior de Guanambi (FG), in the position of Faculty Member, from April 7, 2016 to the present date.

In witness whereof, we issue this declaration.

Guanambi, Bahia, April 8, 2016.

Ana Claudia Nobre
HR Coordinator
GUANAMBI
COLLEGE
CESG - CENTRO DE EDUCAÇÃO SUPERIOR DE GUANAMBI LTDA.

CNPJ Nº 04.097.860/0001-46

RESIGNATION LETTER

Guanambi, Bahia, January 10, 2017.

Name: HANNA CAROLINA CAMPOS FERREIRA

CTPS (Employment Record Book) No. 00039346-00152-MG
Dear Sir/Madam,

For personal reasons, I hereby request my resignation from the position of **Professor/Coordinator**, which I have held at this company (CESG – Centro de Educação Superior de Guanambi LTDA) since 04/07/2016.

Having acknowledged the foregoing, the signatures appear below.

Sincerely,

HANNA CAROLINA CAMPOS FERREIRA

Louriválido Prado dos Santos
Payroll Analyst – HR
CRC-BA 17029-0
Human Resources
GUANAMBI COLLEGE

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana **Date: September 21, 2026**

ATUAL

FACULDADE
GUANAMBI
O CONHECIMENTO PERTO DE VOCÊ

VICE-DIREÇÃO ACADÊMICA
PORTARIA 14/2016

Dispõe sobre a nomeação da Coordenação do curso de Bacharelado em Medicina Veterinária; composição do Núcleo Docente Estruturante (NDE) e Colegiado do referido curso.

O Vice-diretor Acadêmico da Faculdade Guanambi, no uso de suas atribuições e em conformidade com as disposições do Regimento Geral da Instituição, delibera:

Art. 1º. Fica nomeada, como Coordenadora do curso de Bacharelado em Medicina Veterinária da Faculdade Guanambi, a Profa. Dra. Hanna Carolina Campos Ferreira.

Art. 2º. Ficam nomeados, como membros do Núcleo Docente Estruturante (NDE) do curso de Bacharelado em Medicina Veterinária da Faculdade Guanambi, os docentes Gonçalo Mesquita da Silva, Hanna Carolina Campos Ferreira, José de Souza Abreu Júnior, Pablo Teixeira Viana, Rafael Gomes e Souza de Barros, Rodrigo Rodrigues Alvarenga.

Art. 3º. Ficam nomeados como membros titulares do Colegiado do curso de Bacharelado em Medicina Veterinária da Faculdade Guanambi, os docentes Cassyo de Araújo Rufino, Gonçalo Mesquita da Silva, Hanna Carolina Campos Ferreira, Hozana Leite Dantas, José de Souza Abreu Júnior, Juliana Mendonça dos Santos Lopes, Laudicéio Viana Matos, Pablo Teixeira Viana, Rafael Gomes e Souza de Barros e Rodrigo Rodrigues Alvarenga.

Art. 4º. Ficam nomeados como membros suplentes do Colegiado do curso de Bacharelado em Medicina Veterinária da Faculdade Guanambi, os docentes Charles Neris Moreira, Lilian Kirdeika Martins e Luciano Hasimoto Malheiro.

Art. 5º. A presente portaria entra em vigor nesta data, devendo ser divulgada pela internet no site oficial da FG (www.faculdadeguanambi.edu.br) e demais meios de comunicação da Instituição.

Guanambi, 25 de julho de 2016.

Mauro César Ribeiro
Vice-diretor Acadêmico

FACULDADE
GUANAMBI
O CONHECIMENTO PERTO DE VOCÊ

DECLARAÇÃO

Declaramos, para os devidos fins, que **HANNA CAROLINA CAMPOS FERREIRA,** inscrita no CPF sob o número 067.410.916-37, portadora do RG MG-12.992.107 SSP/MG, trabalha nesta Instituição de Ensino Superior, CESG – Centro de Educação Superior de Guanambi (FG) exercendo a função de Docente, desde 07 de abril de 2016 até a presente data.

Por ser a expressão da verdade, firmamos a presente.

Guanambi/Bahia, 08 de abril de 2016.

Ana Claudia Nobre
Coordenadora de RH
FACULDADE GUANAMBI

CESG - CENTRO DE EDUCAÇÃO SUPERIOR DE GUANAMBI LTDA.

CNPJ Nº 04.097.860/0001-46

FACULDADE
GUANAMBI
O CONHECIMENTO PERTO DE VOCÊ

DECLARAÇÃO

Declaramos, para os devidos fins, que **HANNA CAROLINA CAMPOS FERREIRA,** inscrita no CPF sob o número 067.410.916-37, portadora do RG MG-12.992.107 SSP/MG, trabalha nesta Instituição de Ensino Superior, CESG – Centro de Educação Superior de Guanambi (FG) exercendo a função de Docente, desde 07 de abril de 2016 até a presente data.

Por ser a expressão da verdade, firmamos a presente.

Guanambi/Bahia, 08 de abril de 2016.

Ana Claudia Nobre
Coordenadora de RH
FACULDADE GUANAMBI

CESG - CENTRO DE EDUCAÇÃO SUPERIOR DE GUANAMBI LTDA.

CNPJ Nº 04.097.860/0001-46

PEDIDO DE DEMISSÃO

Guanambi-Ba, 10 de janeiro de 2017.

Nome: HANNA CAROLINA CAMPOS FERREIRA

CTPS – 00039346-00152MG
Prezado(s) Senhor(es)

Por razões particulares, venho solicitar meu desligamento do cargo de **Professora/Coordenadora,** que ocupo nesta empresa (CESG – Centro de Educação Superior de Guanambi LTDA) desde 07/04/2016.

Estando cientes, abaixo as assinaturas.

Atenciosamente

HCferreira
HANNA CAROLINA CAMPOS FERREIRA

Lourivaldo Prado dos Santos
ANALISTA DE FOLHA DE PAGTO-RH
CRC-BA 17029-O
Recursos Humanos FACULDADE GUANAMBI

FEDERAL EXECUTIVE BRANCH

DECLARATION

This is to certify that **HANNA CAROLINA CAMPOS FERREIRA**, CPF No. **067.410.916-37**, Integrated Personnel Management System (SIAPE) registration No. **1159674**, is a federal public servant of the **MINISTRY OF AGRICULTURE AND LIVESTOCK**, CNPJ **00.396.895/0097-77**, under the **SINGLE LEGAL REGIME – ACTIVE PERMANENT (STATUTORY 01)**, having entered the federal public service on **12/27/2019**.
It is also hereby certified that the public servant currently holds the position of **FEDERAL AGRICULTURAL TAX AUDITOR**, with a work schedule of 40 hours per week.

Verify the authenticity of the data using the app:
Vio App: QR Seguro

Version date: 02/01/2026 11:20:48 PM

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 23, 2026

PODER EXECUTIVO FEDERAL

DECLARAÇÃO

Declara-se que **HANNA CAROLINA CAMPOS FERREIRA**, CPF nº **067.410.916-37**, matrícula SIAPE nº **1159674**, é agente público federal do(a) **MINISTERIO DA AGRICULTURA E PECUARIA**, CNPJ **00.396.895/0097-77**, vinculado ao **REGIME JURIDICO UNICO - ATIVO PERMANENTE (EST 01)**, com ingresso no serviço público federal desde **27/12/2019**.
Declara-se também que o(a) agente atualmente é ocupante do cargo **AUDITOR FISCAL FEDERAL AGROPEC**, com jornada de trabalho de **40 horas** semanais.

Verifique a autenticidade dos dados com o app:

App Vio: QR Seguro

Data da versão: 01/02/2026 23:20:48

Fonte: Sistemas Estruturantes de Pessoal Civil da Administração Federal

FEDERAL EXECUTIVE BRANCH

DECLARATION OF LENGTH OF FEDERAL PUBLIC SERVICE

Name: HANNA CAROLINA CAMPOS FERREIRA	
CPF: 067.410.916-37	**SIAPE Registration:** 1159674
Agency: MINISTRY OF AGRICULTURE AND LIVESTOCK	**CNPJ:** 00.396.895/0097-77
Position/Employment: FEDERAL AGRICULTURAL TAX AUDITOR - AGROPEC	**Role:** EXECUTIVE COMMISSIONED ROLE
Declaration Employment Relationship: MAPA - 133001159674	**Employment Relationship Regime:** STATUTORY – SINGLE LEGAL REGIME

It is hereby declared, for all due purposes, that, according to the documentation contained in the Personnel Records and a consultation conducted on the date hereof with the Federal Government's Personnel Management Structural Systems, the above-mentioned public servant has **6 years, 1 month, and 8 days** of effective federal public service, having entered the federal public service on **12/27/2019**.

This declaration has no legal validity for retirement purposes. For this purpose, please contact your Personnel Management Unit and request your Certificate of Contribution Time (CTC).

Attention: The information contained in this declaration is automatically extracted from the databases of the Federal Government's structural systems and **specifically refers to the employment relationship identified above**. In case of questions or discrepancies, please contact your Personnel Management Unit.

***The system considers years of 365 days and months of 30 days for the calculation.**

Source: Civil Personnel Structural Systems of the Federal Administration

Verify the authenticity of the data using the app:
Vio App: QR Seguro

Version date: 02/01/2026 11:24:56 PM

Attention: The information contained in this declaration is automatically extracted from the databases of the Federal Government's structural systems and **specifically refers to the employment relationship identified above**. In case of questions or discrepancies, please contact your Personnel Management Unit.

***The system considers years of 365 days and months of 30 days for the calculation.**

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 23, 2026

PODER EXECUTIVO FEDERAL

DECLARAÇÃO DE TEMPO DE SERVIÇO PÚBLICO FEDERAL

Nome: HANNA CAROLINA CAMPOS FERREIRA	
CPF: 067.410.916-37	**Matrícula SIAPE:** 1159674
Órgão: MINISTERIO DA AGRICULTURA E PECUARIA	**CNPJ:** 00.396.895/0097-77
Cargo/Emprego: AUDITOR FISCAL FEDERAL AGROPEC	**Função:** FUNCÃO COMISSIONADA EXECUTIVA
Vínculo desta declaração: MAPA - 133001159674	**Regime do Vínculo:** EST - REGIME JURIDICO UNICO

Declara-se, para os devidos fins, que, de acordo com a documentação constante nos Assentamentos Funcionais e consulta realizada na presente data aos Sistemas Estruturantes de Gestão de Pessoas do Governo Federal, o(a) servidor(a) acima citado possui **6 anos, 1 mês e 8 dias** de tempo efetivo de serviço público federal, tendo ingressado em **27/12/2019**.

Essa declaração não tem fundamento legal para aposentadoria. Para isso, procure a sua unidade de gestão de pessoas e solicite a sua Certidão de Tempo de Contribuição (CTC).

Atenção: As informações constantes nesta declaração são extraídas automaticamente das bases de dados dos sistemas estruturantes do Governo Federal e **referem-se especificamente ao vínculo acima identificado**. Em caso de dúvidas ou divergências, entre em contato com a sua Unidade de Gestão de Pessoas.
***O sistema considera anos de 365 dias e meses de 30 dias no cálculo.**

Fonte: Sistemas Estruturantes de Pessoal Civil da Administração Federal

Verifique a autenticidade dos dados com o app:

App Vio: QR Seguro

Data da versão: 01/02/2026 23:24:56

Atenção: As informações constantes nesta declaração são extraídas automaticamente das bases de dados dos sistemas estruturantes do Governo Federal e **referem-se especificamente ao vínculo acima identificado**. Em caso de dúvidas ou divergências, entre em contato com a sua Unidade de Gestão de Pessoas.
***O sistema considera anos de 365 dias e meses de 30 dias no cálculo.**

FEDERAL EXECUTIVE BRANCH

DECLARATION OF COMMISSIONED POSITIONS AND FUNCTIONS

Name: HANNA CAROLINA CAMPOS FERREIRA	
CPF: 067.410.916-37	**SIAPE Registration:** 1159674
Agency: MINISTRY OF AGRICULTURE AND LIVESTOCK	**CNPJ:** 00.396.895/0097-77
Position/Employment: FEDERAL AGRICULTURAL TAX AUDITOR - AGROPEC	**Role:** EXECUTIVE COMMISSIONED ROLE
Declaration Employment Relationship: MAPA - 133001159674	**Employment Relationship Regime:** STATUTORY – SINGLE LEGAL REGIME

This is to certify, for all due purposes, that, according to the documentation contained in the Personnel Records and a consultation conducted on the date hereof with the Federal Government's Personnel Management Structural Systems, the public servan**t holds/has held positions and functions within the Federal Executive Branch**, as follows:

Code / Title	Unit of Assignment	Period
FEX 0102 – EXECUTIVE COMMISSIONED ROLE	REGIONAL TECHNICAL UNIT OF MONTES CLAROS-MG	02/18/2025 to present date

Attention: The information contained in this declaration is automatically extracted from the databases of the Federal Government's structural systems and **specifically refers to the employment relationship identified above**. In case of questions or discrepancies, please contact your Personnel Management Unit.

Source: Civil Personnel Structural Systems of the Federal Administration

Verify the authenticity of the data using the app:
Vio App: QR Seguro

Version date: 02/01/2026 11:22:46 PM

Attention: The information contained in this declaration is automatically extracted from the databases of the Federal Government's structural systems and **specifically refers to the employment relationship identified above**. In case of questions or discrepancies, please contact your Personnel Management Unit.

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 23, 2026

PODER EXECUTIVO FEDERAL

DECLARAÇÃO DE CARGOS E FUNÇÕES - COMISSIONADOS

Nome: HANNA CAROLINA CAMPOS FERREIRA	
CPF: 067.410.916-37	**Matrícula SIAPE:** 1159674
Órgão: MINISTERIO DA AGRICULTURA E PECUARIA	**CNPJ:** 00.396.895/0097-77
Cargo/Emprego: AUDITOR FISCAL FEDERAL AGROPEC	**Função:** FUNCÃO COMISSIONADA EXECUTIVA
Vínculo desta declaração: MAPA - 133001159674	**Regime do Vínculo:** EST - REGIME JURIDICO UNICO

Declara-se, para os devidos fins, que, de acordo com a documentação constante nos Assentamentos Funcionais e consulta realizada na presente data aos Sistemas Estruturantes de Gestão de Pessoas do Governo Federal, o(a) servidor(a) **exerce/exerceu Cargos e Funções do Poder Executivo Federal**, conforme segue:

Código / Denominação	Unidade de Exercício	Período
FEX 0102 - FUNCAO COMISSIONADA EXECUTIVA	UNID TEC REG DE MONTES CLAROS-MG	18/02/2025 até a presente data

Atenção: As informações constantes nesta declaração são extraídas automaticamente das bases de dados dos sistemas estruturantes do Governo Federal e **referem-se especificamente ao vínculo acima identificado**. Em caso de dúvidas ou divergências, entre em contato com a sua Unidade de Gestão de Pessoas.

Fonte: Sistemas Estruturantes de Pessoal Civil da Administração Federal

Verifique a autenticidade dos dados com o app:

App Vio: QR Seguro

Data da versão: 01/02/2026 23:22:46

Atenção: As informações constantes nesta declaração são extraídas automaticamente das bases de dados dos sistemas estruturantes do Governo Federal e **referem-se especificamente ao vínculo acima identificado**. Em caso de dúvidas ou divergências, entre em contato com a sua Unidade de Gestão de Pessoas.

MINISTRY OF AGRICULTURE AND LIVESTOCK

DECLARATION

Case No. 21028.001955/2016-11

SUPERINTENDENCE OF AGRICULTURE AND LIVESTOCK OF THE STATE OF MINAS GERAIS	CNPJ: 00.396.895/0026-83
PERSONNEL MANAGEMENT DIVISION	

1. I hereby declare that Ms. **Hanna Carolina Campos Ferreira**, SIAPE registration No. **1159674**, who holds the permanent position of **Federal Agricultural Tax Auditor**, is a permanent civil servant of this Ministry, having joined the Agency on December 27, 2019, through admission by public competitive examination, and is serving at the Regional Technical Unit of Montes Claros, State of Minas Gerais, of the Superintendence of Agriculture and Livestock of the State of Minas Gerais of this Ministry.

2. The duties of holders of the position of Federal Agricultural Tax Auditor, Veterinary Medicine area, correspond to those provided for in Article 3 of Law No. 10,883, of June 16, 2004, transcribed below, in accordance with the specificities and particularities of the activities carried out in this area within the Ministry of Agriculture and Livestock throughout the national territory:

I – animal and plant health protection;

II – industrial and sanitary inspection of products of animal origin and inspection of products intended for animal feed;

III – inspection of veterinary-use products and the establishments that manufacture them, as well as pesticides, their components and related products;

IV – inspection of the genealogical registration of domestic animals, the performance of zootechnical tests, equestrian and horse-racing activities, semen intended for artificial insemination of domestic animals, and animal reproduction service providers;

V – inspection and supervision of the production and trade of seeds and seedlings and of the production and trade of fertilizers, soil amendments, inoculants, stimulants, or biofertilizers intended for agriculture;

VI – inspection of the production, circulation, and marketing of wine and wine derivatives, grapes, and beverages in general;

VII – inspection and control of the classification of plant and animal products, by-products, and residues of economic value, and preparation of the respective standards;

VIII – inspection of agricultural aviation activities, as applicable;

IX – inspection of the movement of live animals, their products and by-products intended for any purpose; of plants and plant parts, their products and by-products intended for any purpose; of inputs intended for use in agriculture and livestock; and of biological materials of agricultural or veterinary interest, at international ports and airports, border posts, and other customs-controlled locations;

X – issuance of notices of violation, seizure, and closure of establishments or products when noncompliance with a legal obligation related to the duties described in this Article is identified;

XI – providing technical advice to the government, when requested, in the preparation of agreements, treaties, and conventions with foreign governments and international organizations of which the country is a member, on matters related to the duties established in this Article;

XII – inspection of compliance with administrative acts intended for the protection and certification of cultivars;

XIII – other activities inherent to the authority of the Ministry of Agriculture, Livestock and Food Supply assigned to them by regulation.

Sole paragraph. The Executive Branch, observing the provisions of this Article, shall regulate the duties of the position of Federal Agricultural Tax Auditor in accordance with the specificities and particularities of the activities carried out in areas of professional specialization. (Wording given by Law No. 13,324, of 2016) (Effective).

The information listed in this document is sourced from data extracted from the Integrated Personnel Administration System as of this date.

RODRIGO MONTEIRO GONCALVES
Head of People Management Division - DIGP-MG

sei! electronic signature

Document electronically signed by **RODRIGO MONTEIRO GONCALVES, Head of Division**, on 02/03/2026, at 3:11 p.m., Brasília official time, pursuant to Article 4, § 3, of Decree No. 10,543, of November 13, 2020.

The authenticity of this document may be verified at the website: https://sei.agro.gov.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0, by entering verification code **50159107** and CRC code **8B6FC296**.

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 23, 2026

MINISTÉRIO DA AGRICULTURA E PECUÁRIA

DECLARAÇÃO

Processo nº 21028.001955/2016-11

SUPERINTENDÊNCIA DE AGRICULTURA E PECUÁRIA DO ESTADO DE MINAS GERAIS	CNPJ: 00.396.895/0026-83
DIVISÃO DE GESTÃO DE PESSOAS	

1. Declaro que o (a) Sr. (a). **Hanna Carolina Campos Ferreira**, matrícula SIAPE nº **1159674**, ocupante do cargo efetivo de **Auditor Fiscal Federal Agropecuário**, é servidor (a) efetivo (a) deste Ministério com ingresso no Órgão em 27 de dezembro de 2019, por admissão em concurso público e em exercício na Unidade Técnica Regional de Montes Claros do Estado de Minas Gerais, da Superintendência de Agricultura e Pecuária do Estado de Minas Gerais neste Ministério.

2. As atribuições dos titulares do cargo de Auditor Fiscal Federal Agropecuário, área Medicina Veterinária, correspondem às previstas no artigo 3º, da Lei nº 10.883, de 16 de junho de 2004, abaixo transcrito, em conformidade com as especificidades e as peculiaridades desenvolvidas nessa área, no âmbito do Ministério da Agricultura e Pecuária, em todo o território nacional:

I - a defesa sanitária animal e vegetal;

II - a inspeção industrial e sanitária dos produtos de origem animal e a fiscalização dos produtos destinados à alimentação animal;

III - a fiscalização de produtos de uso veterinário e dos estabelecimentos que os fabricam e de agrotóxicos, seus componentes e afins;

IV - a fiscalização do registro genealógico dos animais domésticos, da realização de provas zootécnicas, das atividades hípicas e turfísticas, do sêmen destinado à inseminação artificial em animais domésticos e dos prestadores de serviços de reprodução animal;

V - a fiscalização e inspeção da produção e do comércio de sementes e mudas e da produção e comércio de fertilizantes, corretivos, inoculantes, estimulantes ou biofertilizantes destinados à agricultura;

VI - a fiscalização da produção, circulação e comercialização do vinho e derivados do vinho, da uva e de bebidas em geral;

VII - a fiscalização e o controle da classificação de produtos vegetais e animais, subprodutos e resíduos de valor econômico e elaboração dos respectivos padrões;

VIII - a fiscalização das atividades de aviação agrícola, no que couber;

IX - a fiscalização do trânsito de animais vivos, seus produtos e subprodutos destinados a quaisquer fins, de vegetais e partes vegetais, seus produtos e subprodutos destinados a quaisquer fins, de insumos destinados ao uso na agropecuária e de materiais biológicos de interesse agrícola ou veterinário, nos portos e aeroportos internacionais, nos postos de fronteira e em outros locais alfandegados;

X - lavrar auto de infração, de apreensão e de interdição de estabelecimentos ou de produtos, quando constatarem o descumprimento de obrigação legal relacionada com as atribuições descritas neste artigo;

XI - assessorar tecnicamente o governo, quando requisitado, na elaboração de acordos, tratados e convenções com governos estrangeiros e organismos internacionais, dos quais o País seja membro, nos assuntos relacionados com as atribuições fixadas neste artigo;

XII - fiscalizar o cumprimento de atos administrativos destinados à proteção e certificação de cultivares;

XIII - as demais atividades inerentes à competência do Ministério da Agricultura, Pecuária e Abastecimento, que lhes forem atribuídas em regulamento.

Parágrafo único. O Poder Executivo, observado o disposto neste artigo, disciplinará as atribuições do cargo de Auditor Fiscal Federal Agropecuário, em conformidade com as especificidades e as peculiaridades desenvolvidas por áreas de especialização profissional. (Redação dada pela lei nº 13.324, de 2016) (Produção de efeito).

As informações listadas neste documento têm como fonte dados extraídos do Sistema Integrado de Administração de Pessoal nesta data.

RODRIGO MONTEIRO GONCALVES
Chefe da DIGP-MG

Documento assinado eletronicamente por **RODRIGO MONTEIRO GONCALVES**, **Chefe de Divisão de**, em 03/02/2026, às 15:11, conforme horário oficial de Brasília, com fundamento no art. 4º,§ 3º, do Decreto nº 10.543, de 13 de novembro de 2020.

A autenticidade deste documento pode ser conferida no site: https://sei.agro.gov.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 , informando o código verificador **50159107** e o código CRC **8B6FC296**.

PREFEITURA DE DIAMANTINA

MUNICIPAL GOVERNMENT OF DIAMANTINA
MUNICIPAL SECRETARIAT OF PLANNING AND MANAGEMENT

D E C L A R A T I O N

We hereby declare, at the request of the interested party, having reviewed the records of this office, that **HANNA CAROLINA CAMPOS FERREIRA**, CPF No. 067.410.916-37, is an employee of the Municipal Government of Diamantina, contracted, admitted from 12.14.2018 to 06.05.2019, in the position of **Veterinarian**; through PSS Public Notice No. 06/2018, having thus completed **174** days, i.e., **5 months and 24 days**, of active service. We further inform that the aforementioned employee performs the following duties, pursuant to Complementary Law No. 125, of December 22, 2015:

"Plan and develop campaigns, extension services, and technical assistance related to livestock and public health, at the national and regional levels, based on needs assessments and the use of available budgetary resources, in order to promote herd health and productivity; Prepare and implement agricultural and livestock projects and projects related to rural credit, providing advice, assistance, and guidance and monitoring such projects, in order to ensure the rational and profitable production of food and compliance with legal provisions regarding the use of the resources provided; Carry out the prevention, diagnosis, and treatment of animal diseases by conducting clinical and laboratory examinations to ensure the individual and collective health of such animals; Perform laboratory examinations by collecting samples and/or conducting anatomopathological, histopathological, hematological, and immunological analyses to establish the therapeutic diagnosis; Promote livestock improvement through artificial insemination, guiding the selection of the species most suitable for each region of the country and establishing the most advantageous characteristics, in order to ensure the profitability of livestock production; Develop and implement animal nutrition programs by formulating and balancing feed rations to lower the feed conversion ratio, prevent nutritional deficiency diseases, and increase productivity; Perform sanitary control of animal production intended for industry by conducting clinical, anatomopathological, and laboratory examinations before and after slaughter, in order to protect the individual and collective health of the population; Promote sanitary inspection at locations where products of animal origin are produced, handled, stored, and marketed, as well as inspection of their quality, by conducting on-site visits to enforce applicable legislation, provide guidance on the technological processing of foods of animal origin, preparing and implementing projects to ensure greater profitability and better food quality; Observe and comply with occupational health and safety regulations; Perform other related duties, as determined by the immediate supervisor."

Diamantina, June 12, 2019.

-----// signature //-----
Elinara Cristina de Oliveira Souza de Paula
Person responsible for the information

[stamp – Municipal Government of Diamantina
Registration No. 1559]

-----// signature //-----
Ivanice Araújo
Human Resources Directorate

[stamp – Director of Human Resources - PMD
Registration No. 92503]

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura.

Date: September 27, 2026.

PREFEITURA MUNICIPAL DE DIAMANTINA
SECRETARIA MUNICIPAL DE PLANEJAMENTO E GESTÃO

DECLARAÇÃO

Declaramos a pedido da interessada, revendo os arquivos desta repartição, que a senhora **HANNA CAROLINA CAMPOS FERREIRA**, CPF: 067.410.916-37, é servidora da Prefeitura Municipal de Diamantina, contratada, admitida em 14.12.2018 a 05.06.2019, na função de **Médica Veterinária**; através do PSS edital nº 06/2018, tendo assim **174** dias, ou seja, **05 meses e 24 dias** de efetivo exercício. Informamos ainda, que a servidora supracitada exerce as seguintes funções, conforme Lei Complementar nº 125, de 22 de dezembro de 2015:

"Planejar e desenvolver campanhas serviços de fomento e assistência técnica relacionada com a pecuária e saúde pública, em âmbito nacional e regional, valendo-se de levantamentos de necessidades e do aproveitamento de recursos orçamentários existentes, para favorecer a sanidade e a produtividade do rebanho; Elaborar e executar agropecuários e os referentes ao crédito rural, prestando assessoramento, assistência e orientação fazendo acompanhamento desses projetos, para garantir a produção racional e lucrativa dos alimentos e o atendimento aos dispositivos legais, quanto a aplicação dos recursos oferecidos; Fazer profilaxia, diagnóstico e tratamento de doenças dos animais realizando exames clínicos e de laboratório para assegurar a sanidade individual e coletiva desses animais; Realizar exames laboratoriais, colhendo material e/ou procedendo a análise anatomopatológica, histopatológica, hematológica e imunológica, para estabelecer o diagnóstico terapêutico; Promover o melhoramento do gado, procedendo a inseminação artificial, orientando a seleção das espécies mais convenientes a cada região do país e fixando os caracteres mais vantajosos, para assegurar o rendimento da exploração pecuária; Desenvolver e executar programas de nutrição animal, formulando e balanceando as rações, para baixar a índice de conversão alimentar, prevenir doenças cariciais e aumentar a produtividade; Efetuar o controle sanitário da produção animal destinada a indústria, realizando exames clínicos, anatomopatológicos laboratoriais ante e post mortem, para proteger a saúde individual e coletiva da população; Promover a fiscalização sanitária nos locais de produção, manipulação, armazenamento e comercialização dos produtos de origem animal, bem, como de sua qualidade determinando visita in loco, para fazer cumprir a legislação pertinente, orientar quanto ao preparo tecnológico dos alimentos de origem animal, elaborando e executando projetos, para assegurar maior lucratividade e melhor qualidade dos alimentos; Observar e cumprir as normas de higiene e segurança do trabalho; Executar outras tarefas correlatas, a critério do superior imediato."

Diamantina, 12 de junho de 2019.

Elinara Cristina de Oliveira Souza de Paula
Responsável pelas informações

Elinara C. O. S. de Paula
Prefeitura Municipal
de Diamantina
Matrícula: 1559

Ivanice Araújo
Diretoria de Recursos Humanos

Ivanice Araujo
Diretora de
Recursos Humanos - PMD
Matrícula: 92503

BRAZILIAN NAVY

COMMAND OF THE 1ST NAVAL DISTRICT

081.2.01
62002.005972/2019-46 e 62002.005686/2019-81.

ORDINANCE No. 677/Com1stND, DATED JULY 4, 2019

Incorporation into the Volunteer Military Service (SMV).

The COMMANDER OF THE 1ST NAVAL DISTRICT, in accordance with the provisions of Art. 10 of Law No. 6,880, dated December 9, 1980, combined with item III, § 3 and item I, § 5, of Art. 30 of Decree No. 4,780, dated July 15, 2003, and the provisions of Art. 12 of the General Instructions for Training Programs and the Provision of Military Service by Members of the 2nd and 3rd Class Reserve of the Navy, approved by Ordinance No. 383, dated December 17, 2008, of the Commander of the Navy, resolves:

Art. 1. To incorporate into this Command, to perform the SMV in the form of the Adaptation and Service Training Program (EAS) and Technical Service Training Program (EST), effective June 10, 2019, in the capacity of a member of the 2nd Class Reserve of the Navy, designated for incorporation by Ordinances Nos. 658 and 659, dated July 1, 2019, of this Command, the following Volunteers:

§ 1. To perform the Adaptation and Service Training Program (EAS):

I. Healthcare Area:

a) Medicine – Gynecology and Obstetrics – Rio de Janeiro (RJ):
FLÁVIA DE MELLO VIOT; and
MAITÊ TOSTES CALDAS FROTA.

b) Medicine – Ophthalmology – Rio de Janeiro (RJ):
PALOMA GASSEN FACCENDA.

c) Medicine – Pediatrics – Rio de Janeiro (RJ):
MARIANA CERQUEIRA MACIEL VIANNA.

d) Dentistry – Rio de Janeiro (RJ):
MARIANA CAMPELLO NUNES.

e) Dentistry – Endodontics – Rio de Janeiro (RJ):
LUIZA GONÇALVES ROMA.

f) Dentistry – Implant Dentistry – Rio de Janeiro (RJ):
FELIPE LEAL MANHÃES DE SÁ; and
ÍSIS LOPES DE OLIVEIRA.

g) Dentistry – Pediatric Dentistry – Rio de Janeiro (RJ):
ANDRÉA LAUDARES MARQUES; and
BÁRBARA MONTEIRO GRISOLIA.

h) Dentistry – Dental Prosthetics – Rio de Janeiro (RJ):
ANDRESSA INCERTE FILIZZOLA;
PRISCILLA LENNY DA SILVA DE OLIVEIRA;
BRUNA MARIA DE CARVALHO MARTINS; and
ANDREIA MIRANDA SPYRIDES.

i) Pharmacy – Rio de Janeiro (RJ):
NAYANE ABREU DO AMARAL E SILVA;
LIVIA GOUDINHO DA CUNHA; and
STEPHANIE CARVALHAL MOREIRA DOS SANTOS.

j) Veterinary Medicine – Rio de Janeiro (RJ):
HANNA CAROLINA CAMPOS FERREIRA.

II. Healthcare Support Area:

a) Nursing – Rio de Janeiro (RJ):
JULIANA DIAS CIRILO;
MARINA LIMA E SILVA;
LAÍS SANTOS SANTANA;
NATHÁLIA CAROLINA TOMAZELLI CRESPO;
AMANDA GURJÃO DE QUEIROZ MENDES;
PRINCE DAIANE FELIZARDO SILVA NASCIMENTO;
MARIA ALBERMÁRIA VERAS SIQUEIRA;
RAPHILLA MARQUES RANGEL;
TATIANA MONTEIRO DA PAIXÃO;
RAFAELA FERREIRA TEIXEIRA;
LUANE SANTIAGO GOMES DA SILVA;
ELAINE ARAUJO DA SILVA;
GABRIEL ROQUE FERREIRA;
FERNANDA CONCEIÇÃO SILVA DO AMORIM;
TAIS CRISTINA BENITES VAZ;
DÉBORA DOS SANTOS VIEIRA;
MAXSUELEN GONÇALVES MARTINS;
NATHALIA DAMAZIO DE ALMEIDA;
JULIANA ALVES HELENO;
THAMIRES EUGÊNIO DE MORAES; and
FRANCISCA VERONICA MADEIRA MELO RODRIGUES.

b) Physical Therapy – Rio de Janeiro (RJ):
RAVENA CAROLINA DE CARVALHO;

NATHALIA DE FÁTIMA RODRIGUES CRUZ;
JULIANA GAFFURI;
ARTUR MATUQUE DA SILVA;
YURI SABINO FREITAS;
FABIANA SANTOS AIRES;
ISABELLE DA NOBREGA FERREIRA;
RITA DE CASSIA CARVALHO DE ALMEIDA NOGUEIRA;
MARIANA NOGUEIRA SILVEIRA;
JÉSSICA GONÇALVES DE LIMA;
RACHEL MARINI FIGUEIRA CHIOTE ALVES DE OLIVEIRA;
NÚBIA GAMA DA SILVA BACK;
ESTHER FERREIRA TIMÓTEO;
LEILANE COSTA LEAL PEREIRA;
ALINE PROCÓPIO DE ALBUQUERQUE;
CECILIA DO NASCIMENTO LOPES;
LÉIA PACHECO DA COSTA DA SILVA;
ROSEANE FERREIRA ARAUJO MAFRA;
BRUNO ARAÚJO RIBEIRO;
GISELLE SANT´ANNA LYRA;
LAYLA ALVES DA CRUZ;
ANA CARLA GONZAGA DE OLIVEIRA;
MARCELLA NOVARINO RODRIGUES DA SILVEIRA; and
AYEXA SOUZA DA CRUZ.

c) Speech-Language Pathology – Rio de Janeiro (RJ):
KELLY CRISTINA DE SOUZA ANDRADE.

d) Nutrition – Rio de Janeiro (RJ):
MARIANA SILVA PELOSI;
LIZA GHASSAN RIACHI;
JULIA MARIA CABRAL RELVAS JACOME BERTOLDI;
CELINA SOARES DE CARVALHO;
ROBERTA FERREIRA FORTINS DE MOURA;
RENATA DE AZEVEDO MACEDO;
PRISCILA ROSSINI GOMES SANTOS;
KALINCA VITÓRIA CARDOSO CUSIELO;
RHAYSSA SILVEIRA GARIOS; and
JULIANA GEORGIA CARVALHO DOS SANTOS.

e) Occupational Therapy – Rio de Janeiro (RJ):
KARINA LOIS PEREIRA.

f) Occupational Therapy – São Pedro da Aldeia (RJ):
MANUELA LIMA DE CARVALHO DA ROCHA.

§ 2. To perform the Technical Service Training Program (EST):

I. Technical Area:

a) Administration – Rio de Janeiro (RJ):

PABLO GESTO ARAUJO RODRIGUES VIEGAS;
MONALISA PIMENTEL SOUZA DE FARIAS;
BRUNO ALVES DE SOUZA E SILVA;
ELIZÂNGELA REGINA DE MAGALHÃES GRANERO;
MICHELLE DA SILVA VALERIO;
MARIA KATYANE TORRES RIBEIRO;
LILIANE DOS SANTOS TRINDADE DETTOGNI;
TAMARA DA COSTA RIBEIRO GONÇALVES NOGUEIRA;
NATHALIA RAMADE DA SILVA;
FREDERICO OZANAN MARCONDES RAMOS FILHO;
ROZELANE DE MATOS MARTINS VIANA;
THAUAN DE OLIVEIRA NICOMEDES;
ANANDDA HUANG ALBACETE;
LEONARDO ROSA CAMPOS;
NATÁLIA MERCADANTE GÓES;
THIAGO OCTÁVIO NOGUEIRA DE CARVALHO;
DAIANE ROCHA PEREIRA;
PRISCILA SOUSA DOS SANTOS MIRANDA SOARES;
SAMIRA PEIXOTO RODRIGUES;
OTAVIO RODRIGUES DA SILVA NUNES; and
SUELLEM DE MOURA ANTUNES AZEVEDO.

b) Management – São Pedro da Aldeia (RJ):
FERNANDA VIEIRA GUIMARÃES.

c) Management – Vila Velha (ES):
YASMIN TAYNA ALVES DE GONZALEZ.

d) Archival Science – Rio de Janeiro (RJ):
LEANDRO PINTO PEREIRA.

e) Library Science – Rio de Janeiro (RJ):
DANIELA MENDES ZETTERMANN;
SUZAN BARBOZA DO NASCIMENTO; and
NATACHA MESQUITA ALMEIDA MOREIRA.

f) Marine Biology – Rio de Janeiro (RJ):
JENNIFER DA SILVA ARÊAS; and
MAURICIO PEIXOTO SCAPOLATEMPORE.

g) Social Communication – Rio de Janeiro (RJ):
THAIS DOS SANTOS PORTELLA;
DANIELLE VERAS DOS SANTOS SALLES;
TATIANA ALVAREZ ARRUDA;
GABRIELLE DIAS MATTOS;
BARBARA DE LIMA DO CARMO DE ALMEIDA;
FELIPE NOGUEIRA AZEVEDO LEMOS;
DEBORA DE SOUZA CRUZ HAUA DA SILVA;
TATIANE BORGES GONÇALVES;
JULIANA LAGI CASTRO PEREZ GARCIA;

ELIANE TEIXEIRA RABELLO;
THAINÃ DEROCI FONTE; and
ANA PAULA RODRIGUES PERLAMAGNA.

h) Social Communication – Arraial do Cabo (RJ):
CECÍLIA PAES RIBEIRO.

i) Social Communication – São Pedro da Aldeia (RJ):
MANUELA WERMELINGER ARAUJO DE BARROS.

j) Industrial Design – Rio de Janeiro (RJ):
MARIANA VIÉGAS SOARES.

k) Law – Rio de Janeiro (RJ):
MARCO THADEU GASPAR DIAS;
CAIO MEDEIROS MARINS;
CELIO ROBERTO CANUTO DE MELO;
LIVIA AYRÃO LOPES DA SILVA;
STEFFI GRECHE BARRETO;
RANNA RANNUAI RODRIGUES SILVA;
ROBERTA MOTTA DA SILVA SILVEIRA;
JULIANA BIASOLI CYPRIANO;
KARINE SOUZA DA SILVA;
CAMILA RUPERTI CANABARRO;
MANUELLA FERREIRA GARCIA BORGES; and
ANA RITA PESSUTO MIRANDA PIXIOLINI.

l) Physical Education – Rio de Janeiro (RJ):
MARCELO MOREIRA MELO.

m) Statistics – Rio de Janeiro (RJ):
THAINÁ CASTRO DA SILVA.

n) Information Technology – Rio de Janeiro (RJ):
ANDRÉ SIQUEIRA RUELA;
THEREZA MARIA DA CONCEIÇÃO LIMA BINDI RODRIGUES;
BRUNO DA SILVA PINTO;
VILSON FERNANDES DE SOUZA;
DIOGO JOSÉ FARIA DE FARIAS; and
ARIELA CRISTINA DAMASCENO DE SOUZA.

o) Meteorology – Rio de Janeiro (RJ):
JEFFERSON XAVIER DE MELLO.

p) Meteorology – Arraial do Cabo (RJ):
JOÃO PAULO DA COSTA PEDROSA.

q) Oceanography – Rio de Janeiro (RJ):
ANA BEATRIZ AZEVEDO RAMOS.

r) Psychology – Rio de Janeiro (RJ):
CLARA CALDEIRA DIAS;
MARIANA DE ALMEIDA RONDON;
CAROLINA SUAREZ PARADA;
GABRIELLA DE OLIVEIRA SANTIAGO WOLFRAM;
JÉSSICA MARTINS DA SILVA;
DANIELA RAMOS DE OLIVEIRA;
RONÁLIA PAULINO LESSA;
ÉRICA BARREIROS PACHECO SANTOS DO NASCIMENTO;
JORGE VICTOR NASCIMENTO DA SILVA; and
SUÊRDA MARIA PAIVA DE SOUSA.

s) Chemistry – Arraial do Cabo (RJ):
NÍNEVE ALVES VIERIA DE MATOS.

t) Social Work – Rio de Janeiro (RJ):
MARIANNE SOBRAL DE OLIVEIRA;
PATRÍCIA RAMALDES FERREIRA DA SILVA MOREIRA;
DÉBORA CRISTINA BAHIA FORTES;
BIANCA DA COSTA TEIXEIRA GALISA;
DÉBORA LOUÍSE SIMÕES GOUVÊA;
GUSTAVO PALMARES GOMES DA COSTA;
THALYTA PERES DOS REIS;
ISADORA SILVANO FONTES;
YZIS LEONOR ALMEIDA PEIXOTO NUNES;
FABIANA ABREU MORAES;
GISELE FIGUEIREDO SILVA LOPES;
JOYCE KARLA DE ARAUJO MELO; and
FABIOLA LEITE DE LIMA.

II – Technical Area – Naval Inspector/Naval Surveyor (IN/VN):

a) Nautical Sciences – Rio de Janeiro (RJ):
2nd Lieutenant (RM2-T) ALANA MENDONÇA CANDIDO PEREIRA.

b) Naval Construction Technology – Rio de Janeiro (RJ):
YAGO DOS SANTOS DAMASCENO.

III – Technical Area with Specific Qualifications:

a) Physical Education – Boxing – Rio de Janeiro (RJ):
CHARLES BARTEL FARIAS.

b) Physical Education – Olympic Weightlifting – Rio de Janeiro (RJ):
TIAGO OLIVEIRA COUTO.

c) Physical Education – Sailing – Experience in HPE 25, Snipe or TP52 Championship – Rio de Janeiro (RJ):
MÁRIO TINOCO DO AMARAL.

IV – Physical Education – Sports:

a) Physical Education – Athletics – Long-Distance – Rio de Janeiro (RJ):
GABRIELA FERNANDES LOPES.

b) Physical Education – Athletics – Sprint – Rio de Janeiro (RJ):
MARCELO HENRIQUE VINCE BORGES.

c) Physical Education – Basketball – Rio de Janeiro (RJ):
TIAGO BINATO NEVES.

d) Physical Education – Canoeing – Rio de Janeiro (RJ):
ROBERTO MAEHLER.

e) Physical Education – Judo – Rio de Janeiro (RJ):
RODRIGO SAINT-CLAIR FREITAS DA CUNHA.

f) Physical Education – Water Polo – Rio de Janeiro (RJ):
RAPHAELE METRI PERROTTA LOURENÇO.

g) Physical Education – Rifle Shooting – Rio de Janeiro (RJ):
ALEX ALBERT SOUZA DE CARVALHO.

h) Physical Education – Triathlon – Rio de Janeiro (RJ):
IURI VINUTO JOSINO.

i) Physical Education – Sailing – Rio de Janeiro (RJ):
HENRIQUE SAUERBRONN ANDRADE PEREIRA.

V – Technical Area – Teaching:

a) Physical Education – Angra dos Reis (RJ):
JULIANA ROSANO DA SILVA; and
SABRINA REIS DE AMORIM.

b) Nursing – Rio de Janeiro (RJ):
WILAYNE ATANAZIO DOS SANTOS GARCIA;
FERNANDA SILVA LINHARES; and
KARINA FEITAL DA COSTA DE SOUZA.

c) Information Technology – Angra dos Reis (RJ):
ELAINE CRISTINA DE SOUSA SANTANA.

d) English – Rio de Janeiro (RJ):
RAQUEL SAMPAIO MELLO;
ADRIENE DAFNE VIEIRA DA SILVA;
WILKA CATARINA DA SILVA SOARES; and
VANESSA SANTOS RIBEIRO DE ALMEIDA.

e) English – Angra dos Reis (RJ):
DANIELA HADDAD MARTINS.

f) Mathematics – Angra dos Reis (RJ):
JULIANA DE ALMEIDA SILVA; and
DANIEL OLIVEIRA SILVA DE SOUZA.

g) Pedagogy – Rio de Janeiro (RJ):
LARISSA CÂNDIDO PIAZZI;
ELIANE SOUZA DOS SANTOS DALTRO;
KEILLA CIBELLE SANTOS DO NASCIMENTO PEREIRA;
2nd Lieutenant (RM2-T) TRINDADE VIEIRA LIMA;
LUANA BARROS FREIRE;
RENATA DE ARAUJO PEREIRA ANDRADE;
ILANE PEREIRA DA SILVA;
BRUNA ALVAREZ LEMOS DO CARMO; and
FABRICIO CARLOS DE OLIVEIRA FAGUNDES.

h) Portuguese – Rio de Janeiro (RJ):
JULIANA DA SILVA NETO; and
MAYARA DE ARAÚJO MATTOS.

i) Portuguese – Vila Velha (ES):
ADRIANA GRACIELA VIANA DE SOUZA.

j) International Relations – Rio de Janeiro (RJ):
TAYANE REIS CARVALHO SESSA.

VI – Engineering Area:

a) Architecture and Urban Planning – Rio de Janeiro (RJ):
LAÍS MORAES TEIXEIRA.

b) Environmental Engineering – Rio de Janeiro (RJ):
NINA CARDOSO GRUBER; and
JOSÉ GUILHERME LEOPOLDO DE MELO.

c) Environmental Engineering – Arraial do Cabo (RJ):
LAURA BRAZ MONTEIRO DE BARROS.

d) Cartographic Engineering – Rio de Janeiro (RJ):
LUMA COSTA LIMA DOS SANTOS; and
OCIMAR JOSÉ CASTRO JUNIOR.

e) Civil Engineering – Rio de Janeiro (RJ):
ANDRÉ BARBOSA GONÇALVES;
BRUNO PEREIRA GÓES;
PEDRO FERNANDES RODRIGUES; and
THAÍS GONÇALVES SERMENHO;

f) Electrical Engineering – Rio de Janeiro (RJ):
LUIZ GUILHERME BATISTA GENÚ;
HENRIQUE ALVES GASPAR RIBEIRO;
HUGO CASSÉ DA SILVA; and
GUILHERME BAUMANN CORRÊA.

g) Electronics Engineering – Rio de Janeiro (RJ):
LUCIANO CESAR DA SILVA COSTA; and
VANESSA SOUZA REBOUÇAS.

h) Mechanical Engineering – Rio de Janeiro (RJ):
CARLOS AUGUSTO CARDOSO LIMA;
BRAYNER CARDOSO DOS SANTOS;
LUIZ FERNANDO CAVALCANTI GALVÃO;
FÁBIO BENVENUTI DE ABREU PEREZ; and
CAMILA MELO DE OLIVEIRA.

i) Production Engineering – Rio de Janeiro (RJ):
CLARICE GUIMARÃES BARROS MARTINS.

j) Chemical Engineering – Rio de Janeiro (RJ):
FERNANDA COUTO SILVA;
RENATA COSTA ZIMPECK MENDONÇA; and
JOÃO MÁRCIO SUTANA ALVIM.

k) Chemical Engineering – Arraial do Cabo (RJ):
FREDERICO AMORIM SAFATLE.

l) Telecommunications Engineering – Rio de Janeiro (RJ):
JÉSSICA DOS REIS ARAÚJO;
CESAR NOBREGA RODRIGUES; and
ARMANDO FIGUEIREDO GOMES FILHO.

Art. 2. It is hereby recorded that the volunteers listed below performed Military/Civil Public Service, totaling the following periods of service:

§ 1. Military Service:

I – In this Armed Force:

2nd Lieutenant (RM2-T) TRINDADE VIEIRA LIMA
1 year, 6 months and 17 days – September 25, 2017 to June 8, 2018, and June 12, 2018 to April 11, 2019.

2nd Lieutenant (RM2-T) ALANA MENDONÇA CANDIDO PEREIRA
1 year, 9 months and 10 days – January 31, 2011 to November 23, 2015.

* RM2-T - Second-Class Navy Reserve / Temporary Service Officer

II – Brazilian Army:

FABRICIO CARLOS DE OLIVEIRA FAGUNDES
3 years and 19 days – March 10, 1997 to March 27, 2000.

III – Brazilian Air Force:

DANIEL OLIVEIRA SILVA DE SOUZA
1 month and 26 days – July 11, 2013 to September 6, 2013.

§ 2. Civil Public Service:

I – Federal Public Service:

ANDREIA MIRANDA SPYRIDES
1 year, 2 months and 7 days – April 2, 2018 to June 9, 2019.

RAVENA CAROLINA DE CARVALHO
1 year and 19 days – March 8, 2016 to March 27, 2017.

LUIZ GUILHERME BATISTA GENÚ
1 year, 3 months and 27 days – September 4, 2015 to December 31, 2016.

MANUELA LIMA DE CARVALHO DA ROCHA
4 years and 28 days – October 21, 2010 to December 31, 2011; May 15, 2015 to March 31, 2017; and February 1, 2018 to January 31, 2019.

ANDRÉ SIQUEIRA RUELA
11 months and 13 days – August 8, 2016 to July 21, 2017.

II – State Public Service:

ANA CARLA GONZAGA DE OLIVEIRA
5 years, 9 months and 9 days – July 1, 2013 to April 9, 2019.

BRUNA ALVAREZ LEMOS DO CARMO
1 year, 8 months and 17 days – February 10, 2017 to December 21, 2017, and February 15, 2018 to December 20, 2018.

MARIANA SILVA PELOSI
5 years – October 22, 2010 to January 9, 2014, and March 2, 2015 to January 9, 2017.

JEFFERSON XAVIER DE MELLO
2 years, 6 months and 10 days – October 1, 2016 to April 10, 2019.

RAPHILLA MARQUES RANGE
5 years, 3 months and 19 days – December 20, 2013 to April 8, 2019.

III – Municipal Public Service:

LIVIA AYRÃO LOPES DA SILVA
4 months and 17 days – January 1, 2013 to May 17, 2013.

ROSEANE FERREIRA ARAUJO MAFRA
3 years, 1 month and 29 days – February 12, 2016 to April 10, 2019.

MAYARA DE ARAÚJO MATTOS
2 years, 3 months and 8 days – December 29, 2016 to April 4, 2019.

PRISCILA ROSSINI GOMES SANTOS
2 years, 1 month and 7 days – April 2, 2012 to January 1, 2013; April 27, 2016 to December 30, 2016; and February 21, 2017 to October 24, 2017.

ROBERTA FERREIRA FORTINS DE MOURA
1 year, 5 months and 19 days – October 27, 2017 to April 15, 2019.

LAÍS MORAES TEIXEIRA
1 year, 5 months and 26 days – September 25, 2017 to April 1, 2019.

FELIPE NOGUEIRA AZEVEDO LEMOS
4 years, 11 months and 26 days – April 1, 2009 to April 28, 2014.

FRANCISCA VERONICA MADEIRA MELO RODRIGUES
1 year, 11 months and 28 days – April 6, 2017 to April 4, 2019.

FERNANDA CONCEIÇÃO SILVA DO AMORIM
2 years, 6 months and 22 days – July 17, 2011 to November 23, 2012, and November 26, 2014 to February 11, 2016.

Art. 3. This Ordinance shall enter into force on the date hereof, with administrative effects retroactive to June 10, 2019.

FLÁVIO AUGUSTO VIANA ROCHA
Vice Admiral
Commander

THIAGO DOS SANTOS GUIMARÃES
Lieutenant Commander
Assistant

DIGITALLY AUTHENTICATED

Distribution:
CIAW, DEnsM, DGPM, DPMM, DSM, SIM, SSPM, DN-60, DN-61, DN-61.3, DN-65 and File.

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 21, 2026

MARINHA DO BRASIL

COMANDO DO 1º DISTRITO NAVAL

081.2.01
62002.005972/2019-46 e 62002.005686/2019-81.

PORTARIA Nº 677/Com1ºDN, DE 04 DE JULHO DE 2019.

Incorpora ao Serviço Militar Voluntário (SMV).

O COMANDANTE DO 1º DISTRITO NAVAL, de acordo com o contido no art. 10 da Lei nº 6.880, de 9 de dezembro de 1980, combinado com o inciso III, § 3º e inciso I, § 5º, art. 30 do Decreto nº 4.780, de 15 de julho de 2003, e o disposto no art. 12 das Instruções Gerais para os Estágios e a Prestação do Serviço Militar pelos Militares da Reserva de 2ª e 3ª Classes da Marinha, aprovadas pela Portaria nº 383, de 17 de dezembro de 2008, do Comandante da Marinha, resolve:

Art. 1º Incorporar neste Comando, para prestarem o SMV sob a forma do Estágio de Adaptação e Serviço (EAS) e Estágio de Serviço Técnico (EST), a partir de 10JUN2019, na situação de Militar da Reserva de 2ª Classe da Marinha, designados à incorporação pelas Portarias nº 658 e 659, de 1º de julho de 2019, deste Comando, os seguintes Voluntários:

§ 1º Para prestar o Estágio de Adaptação e Serviço (EAS):

I. Área de Saúde:

a) Medicina - Ginecologia e Obstetrícia - Rio de Janeiro (RJ):
FLÁVIA DE MELLO VIOT; e
MAITÊ TOSTES CALDAS FROTA.

b) Medicina - Oftalmologia - Rio de Janeiro (RJ):
PALOMA GASSEN FACCENDA.

c) Medicina - Pediatria - Rio de Janeiro (RJ):
MARIANA CERQUEIRA MACIEL VIANNA.

d) Odontologia - Rio de Janeiro (RJ):
MARIANA CAMPELLO NUNES.

e) Odontologia - Endodontia - Rio de Janeiro (RJ):
LUIZA GONÇALVES ROMA.

f) Odontologia - Implantodontia - Rio de Janeiro (RJ):
FELIPE LEAL MANHÃES DE SÁ; e
ÍSIS LOPES DE OLIVEIRA.

g) Odontologia - Odontopediatria - Rio de Janeiro (RJ):
ANDRÉA LAUDARES MARQUES; e
BÁRBARA MONTEIRO GRISOLIA.

h) Odontologia - Prótese Dentária - Rio de Janeiro (RJ):
ANDRESSA INCERTE FILIZZOLA;
PRISCILLA LENNY DA SILVA DE OLIVEIRA;
BRUNA MARIA DE CARVALHO MARTINS; e
ANDREIA MIRANDA SPYRIDES.

i) Farmácia - Rio de Janeiro (RJ):
NAYANE ABREU DO AMARAL E SILVA;
LIVIA GOUDINHO DA CUNHA; e
STEPHANIE CARVALHAL MOREIRA DOS SANTOS.

j) Veterinária - Rio de Janeiro (RJ):
HANNA CAROLINA CAMPOS FERREIRA.

II. Área de Apoio à Saúde:

a) Enfermagem - Rio de Janeiro (RJ):
JULIANA DIAS CIRILO;
MARINA LIMA E SILVA;
LAÍS SANTOS SANTANA;
NATHÁLIA CAROLINA TOMAZELLI CRESPO;
AMANDA GURJÃO DE QUEIROZ MENDES;
PRINCE DAIANE FELIZARDO SILVA NASCIMENTO;
MARIA ALBERMÁRIA VERAS SIQUEIRA;
RAPHILLA MARQUES RANGEL;
TATIANA MONTEIRO DA PAIXÃO;
RAFAELA FERREIRA TEIXEIRA;
LUANE SANTIAGO GOMES DA SILVA;
ELAINE ARAUJO DA SILVA;
GABRIEL ROQUE FERREIRA;
FERNANDA CONCEIÇÃO SILVA DO AMORIM;
TAIS CRISTINA BENITES VAZ;
DÉBORA DOS SANTOS VIEIRA;
MAXSUELEN GONÇALVES MARTINS;
NATHALIA DAMAZIO DE ALMEIDA;
JULIANA ALVES HELENO;
THAMIRES EUGÊNIO DE MORAES; e
FRANCISCA VERONICA MADEIRA MELO RODRIGUES.

b) Fisioterapia - Rio de Janeiro (RJ):
RAVENA CAROLINA DE CARVALHO;

NATHALIA DE FÁTIMA RODRIGUES CRUZ;
JULIANA GAFFURI;
ARTUR MATUQUE DA SILVA;
YURI SABINO FREITAS;
FABIANA SANTOS AIRES;
ISABELLE DA NOBREGA FERREIRA;
RITA DE CASSIA CARVALHO DE ALMEIDA NOGUEIRA;
MARIANA NOGUEIRA SILVEIRA;
JÉSSICA GONÇALVES DE LIMA;
RACHEL MARINI FIGUEIRA CHIOTE ALVES DE OLIVEIRA;
NÚBIA GAMA DA SILVA BACK;
ESTHER FERREIRA TIMÓTEO;
LEILANE COSTA LEAL PEREIRA;
ALINE PROCÓPIO DE ALBUQUERQUE;
CECILIA DO NASCIMENTO LOPES;
LÉIA PACHECO DA COSTA DA SILVA;
ROSEANE FERREIRA ARAUJO MAFRA;
BRUNO ARAÚJO RIBEIRO;
GISELLE SANT´ANNA LYRA;
LAYLA ALVES DA CRUZ;
ANA CARLA GONZAGA DE OLIVEIRA;
MARCELLA NOVARINO RODRIGUES DA SILVEIRA; e
AYEXA SOUZA DA CRUZ.

c) Fonoaudiologia -Rio de Janeiro (RJ):
KELLY CRISTINA DE SOUZA ANDRADE.

d) Nutrição - Rio de Janeiro (RJ):
MARIANA SILVA PELOSI;
LIZA GHASSAN RIACHI;
JULIA MARIA CABRAL RELVAS JACOME BERTOLDI;
CELINA SOARES DE CARVALHO;
ROBERTA FERREIRA FORTINS DE MOURA;
RENATA DE AZEVEDO MACEDO;
PRISCILA ROSSINI GOMES SANTOS;
KALINCA VITÓRIA CARDOSO CUSIELO;
RHAYSSA SILVEIRA GARIOS; e
JULIANA GEORGIA CARVALHO DOS SANTOS.

e) Terapia Ocupacional - Rio de Janeiro (RJ):
KARINA LOIS PEREIRA.

f) Terapia Ocupacional - São Pedro da Aldeia (RJ):
MANUELA LIMA DE CARVALHO DA ROCHA.

§ 2º Para prestar o Estágio de Serviço Técnico (EST):

I. Área Técnica:

a) Administração - Rio de Janeiro (RJ):

PABLO GESTO ARAUJO RODRIGUES VIEGAS;
MONALISA PIMENTEL SOUZA DE FARIAS;
BRUNO ALVES DE SOUZA E SILVA;
ELIZÂNGELA REGINA DE MAGALHÃES GRANERO;
MICHELLE DA SILVA VALERIO;
MARIA KATYANE TORRES RIBEIRO;
LILIANE DOS SANTOS TRINDADE DETTOGNI;
TAMARA DA COSTA RIBEIRO GONÇALVES NOGUEIRA;
NATHALIA RAMADE DA SILVA;
FREDERICO OZANAN MARCONDES RAMOS FILHO;
ROZELANE DE MATOS MARTINS VIANA;
THAUAN DE OLIVEIRA NICOMEDES;
ANANDDA HUANG ALBACETE;
LEONARDO ROSA CAMPOS;
NATÁLIA MERCADANTE GÓES;
THIAGO OCTÁVIO NOGUEIRA DE CARVALHO;
DAIANE ROCHA PEREIRA;
PRISCILA SOUSA DOS SANTOS MIRANDA SOARES;
SAMIRA PEIXOTO RODRIGUES;
OTAVIO RODRIGUES DA SILVA NUNES; e
SUELLEM DE MOURA ANTUNES AZEVEDO.

b) Administração - São Pedro da Aldeia (RJ):
FERNANDA VIEIRA GUIMARÃES.

c) Administração - Vila Velha (ES):
YASMIN TAYNA ALVES DE GONZALEZ.

d) Arquivologia - Rio de Janeiro (RJ):
LEANDRO PINTO PEREIRA.

e) Biblioteconomia - Rio de Janeiro (RJ):
DANIELA MENDES ZETTERMANN;
SUZAN BARBOZA DO NASCIMENTO; e
NATACHA MESQUITA ALMEIDA MOREIRA.

f) Biologia Marinha - Rio de Janeiro (RJ):
JENNIFER DA SILVA ARÊAS; e
MAURICIO PEIXOTO SCAPOLATEMPORE.

g) Comunicação Social - Rio de Janeiro (RJ):
THAIS DOS SANTOS PORTELLA;
DANIELLE VERAS DOS SANTOS SALLES;
TATIANA ALVAREZ ARRUDA;
GABRIELLE DIAS MATTOS;
BARBARA DE LIMA DO CARMO DE ALMEIDA;
FELIPE NOGUEIRA AZEVEDO LEMOS;
DEBORA DE SOUZA CRUZ HAUA DA SILVA;
TATIANE BORGES GONÇALVES;
JULIANA LAGI CASTRO PEREZ GARCIA;

ELIANE TEIXEIRA RABELLO;
THAINÃ DEROCI FONTE; e
ANA PAULA RODRIGUES PERLAMAGNA.

h) Comunicação Social - Arraial do Cabo (RJ):
CECÍLIA PAES RIBEIRO.

i) Comunicação Social - São Pedro da Aldeia (RJ):
MANUELA WERMELINGER ARAUJO DE BARROS.

j) Desenho Industrial - Rio de Janeiro (RJ):
MARIANA VIÉGAS SOARES.

k) Direito - Rio de Janeiro (RJ):
MARCO THADEU GASPAR DIAS;
CAIO MEDEIROS MARINS;
CELIO ROBERTO CANUTO DE MELO;
LIVIA AYRÃO LOPES DA SILVA;
STEFFI GRECHE BARRETO;
RANNA RANNUAI RODRIGUES SILVA;
ROBERTA MOTTA DA SILVA SILVEIRA;
JULIANA BIASOLI CYPRIANO;
KARINE SOUZA DA SILVA;
CAMILA RUPERTI CANABARRO;
MANUELLA FERREIRA GARCIA BORGES; e
ANA RITA PESSUTO MIRANDA PIXIOLINI.

l) Educação Física - Rio de Janeiro (RJ):
MARCELO MOREIRA MELO.

m) Estatística - Rio de Janeiro (RJ):
THAINÁ CASTRO DA SILVA.

n) Informática - Rio de Janeiro (RJ):
ANDRÉ SIQUEIRA RUELA;
THEREZA MARIA DA CONCEIÇÃO LIMA BINDI RODRIGUES;
BRUNO DA SILVA PINTO;
VILSON FERNANDES DE SOUZA;
DIOGO JOSÉ FARIA DE FARIAS; e
ARIELA CRISTINA DAMASCENO DE SOUZA.

o) Meteorologia - Rio de Janeiro (RJ):
JEFFERSON XAVIER DE MELLO.

p) Meteorologia - Arraial do Cabo (RJ):
JOÃO PAULO DA COSTA PEDROSA.

q) Oceanografia - Rio de Janeiro (RJ):
ANA BEATRIZ AZEVEDO RAMOS.

r) Psicologia - Rio de Janeiro (RJ):
CLARA CALDEIRA DIAS;
MARIANA DE ALMEIDA RONDON;
CAROLINA SUAREZ PARADA;
GABRIELLA DE OLIVEIRA SANTIAGO WOLFRAM;
JÉSSICA MARTINS DA SILVA;
DANIELA RAMOS DE OLIVEIRA;
RONÁLIA PAULINO LESSA;
ÉRICA BARREIROS PACHECO SANTOS DO NASCIMENTO;
JORGE VICTOR NASCIMENTO DA SILVA; e
SUÊRDA MARIA PAIVA DE SOUSA.

s) Química - Arraial do Cabo (RJ):
NÍNEVE ALVES VIERIA DE MATOS.

t) Serviço Social - Rio de Janeiro (RJ):
MARIANNE SOBRAL DE OLIVEIRA;
PATRÍCIA RAMALDES FERREIRA DA SILVA MOREIRA;
DÉBORA CRISTINA BAHIA FORTES;
BIANCA DA COSTA TEIXEIRA GALISA;
DÉBORA LOUÍSE SIMÕES GOUVÊA;
GUSTAVO PALMARES GOMES DA COSTA;
THALYTA PERES DOS REIS;
ISADORA SILVANO FONTES;
YZIS LEONOR ALMEIDA PEIXOTO NUNES;
FABIANA ABREU MORAES;
GISELE FIGUEIREDO SILVA LOPES;
JOYCE KARLA DE ARAUJO MELO; e
FABIOLA LEITE DE LIMA.

II - Área Técnica - Inspetor Naval/Vistoriador Naval (IN/VN):

a) Ciências Náuticas - Rio de Janeiro (RJ):
2ºTen (RM2-T) ALANA MENDONÇA CANDIDO PEREIRA.

b) Tecnologia em Construção Naval - Rio de Janeiro (RJ):
YAGO DOS SANTOS DAMASCENO.

III - Área Técnica com Competência Específicas:

a) Educação Física - Boxe - Rio de Janeiro (RJ):
CHARLES BARTEL FARIAS.

b) Educação Física - Levantamento de Peso Olímpico - Rio de Janeiro (RJ):
TIAGO OLIVEIRA COUTO.

c) Educação Física - Vela Experiência Campeonato HPE 25, Snipe ou TP52 - Rio de Janeiro (RJ):
MÁRIO TINOCO DO AMARAL.

IV - Educação Física - Modalidades

a) Educação Física - Atletismo – Fundo - Rio de Janeiro (RJ):
GABRIELA FERNANDES LOPES.

b) Educação Física - Atletismo - Raso – Rio de Janeiro (RJ):
MARCELO HENRIQUE VINCE BORGES.

c) Educação Física - Basquete - Rio de Janeiro (RJ):
TIAGO BINATO NEVES.

d) Educação Física - Canoagem - Rio de Janeiro (RJ):
ROBERTO MAEHLER.

e) Educação Física - Judô - Rio de Janeiro (RJ):
RODRIGO SAINT-CLAIR FREITAS DA CUNHA.

f) Educação Física - Pólo Aquático - Rio de Janeiro (RJ):
RAPHAELE METRI PERROTTA LOURENÇO.

g) Educação Física - Tiro Arma Longa - Rio de Janeiro (RJ):
ALEX ALBERT SOUZA DE CARVALHO.

h) Educação Física - Triatlo - Rio de Janeiro (RJ):
IURI VINUTO JOSINO.

i) Educação Física - Vela - Rio de Janeiro (RJ):
HENRIQUE SAUERBRONN ANDRADE PEREIRA.

V - Área Técnica - Magistério:

a) Educação Física - Angra dos Reis (RJ):
JULIANA ROSANO DA SILVA; e
SABRINA REIS DE AMORIM.

b) Enfermagem - Rio de Janeiro (RJ):
WILAYNE ATANAZIO DOS SANTOS GARCIA
FERNANDA SILVA LINHARES; e
KARINA FEITAL DA COSTA DE SOUZA.

c) Informática - Angra dos Reis (RJ):
ELAINE CRISTINA DE SOUSA SANTANA.

d) Inglês - Rio de Janeiro (RJ):
RAQUEL SAMPAIO MELLO;
ADRIENE DAFNE VIEIRA DA SILVA;
WILKA CATARINA DA SILVA SOARES; e
VANESSA SANTOS RIBEIRO DE ALMEIDA.

e) Inglês - Angra dos Reis (RJ):
DANIELA HADDAD MARTINS.

f) Matemática - Angra dos Reis (RJ):
JULIANA DE ALMEIDA SILVA; e
DANIEL OLIVEIRA SILVA DE SOUZA.

g) Pedagogia - Rio de Janeiro (RJ):
LARISSA CÂNDIDO PIAZZI;
ELIANE SOUZA DOS SANTOS DALTRO;
KEILLA CIBELLE SANTOS DO NASCIMENTO PEREIRA;
2ºTen (RM2-T) TRINDADE VIEIRA LIMA;
LUANA BARROS FREIRE;
RENATA DE ARAUJO PEREIRA ANDRADE;
ILANE PEREIRA DA SILVA;
BRUNA ALVAREZ LEMOS DO CARMO; e
FABRICIO CARLOS DE OLIVEIRA FAGUNDES.

h) Português - Rio de Janeiro (RJ):
JULIANA DA SILVA NETO; e
MAYARA DE ARAÚJO MATTOS.

i) Português - Vila Velha (ES):
ADRIANA GRACIELA VIANA DE SOUZA.

j) Relações Internacionais - Rio de Janeiro (RJ):
TAYANE REIS CARVALHO SESSA.

VI - Área de Engenharia:

a) Arquitetura e Urbanismo - Rio de Janeiro (RJ):
LAÍS MORAES TEIXEIRA.

b) Engenharia Ambiental - Rio de Janeiro (RJ):
NINA CARDOSO GRUBER; e
JOSÉ GUILHERME LEOPOLDO DE MELO.

c) Engenharia Ambiental - Arraial do Cabo (RJ):
LAURA BRAZ MONTEIRO DE BARROS.

d) Engenharia Cartográfica - Rio de Janeiro (RJ):
LUMA COSTA LIMA DOS SANTOS; e
OCIMAR JOSÉ CASTRO JUNIOR.

e) Engenharia Civil - Rio de Janeiro (RJ):
ANDRÉ BARBOSA GONÇALVES;
BRUNO PEREIRA GÓES;
PEDRO FERNANDES RODRIGUES; e
THAÍS GONÇALVES SERMENHO;

f) Engenharia Elétrica - Rio de Janeiro (RJ):
LUIZ GUILHERME BATISTA GENÚ;
HENRIQUE ALVES GASPAR RIBEIRO;
HUGO CASSÉ DA SILVA; e
GUILHERME BAUMANN CORRÊA.

g) Engenharia Eletrônica - Rio de Janeiro (RJ):
LUCIANO CESAR DA SILVA COSTA; e
VANESSA SOUZA REBOUÇAS.

h) Engenharia Mecânica - Rio de Janeiro (RJ):
CARLOS AUGUSTO CARDOSO LIMA;
BRAYNER CARDOSO DOS SANTOS;
LUIZ FERNANDO CAVALCANTI GALVÃO;
FÁBIO BENVENUTI DE ABREU PEREZ; e
CAMILA MELO DE OLIVEIRA.

i) Engenharia de Produção - Rio de Janeiro (RJ):
CLARICE GUIMARÃES BARROS MARTINS.

j) Engenharia Química - Rio de Janeiro (RJ):
FERNANDA COUTO SILVA;
RENATA COSTA ZIMPECK MENDONÇA; e
JOÃO MÁRCIO SUTANA ALVIM.

k) Engenharia Química - Arraial do Cabo (RJ):
FREDERICO AMORIM SAFATLE.

l) Engenharia de Telecomunicações - Rio de Janeiro (RJ):
JÉSSICA DOS REIS ARAÚJO;
CESAR NOBREGA RODRIGUES; e
ARMANDO FIGUEIREDO GOMES FILHO.

Art. 2º Fica consignado, no presente ato, que os voluntários abaixo prestaram Serviço Militar/Público Civil, perfazendo o tempo e período, conforme a seguir:

§ 1º Serviço Militar:

I - Nesta Força:

2ºTen (RM2-T) TRINDADE VIEIRA LIMA;
1 ano, 6 meses e 17 dias – 25SET2017 até 08JUN2018 e 12JUN2018 até 11ABR2019.

2ºTen (RM2-T) ALANA MENDONÇA CANDIDO PEREIRA
1 ano, 9 meses e 10 dias – 31JAN2011 até 23NOV2015.

II- Exército Brasileiro:

FABRICIO CARLOS DE OLIVEIRA FAGUNDES
3 anos e 19 dias – 10MAR1997 até 27MAR2000.

III- Força Aérea Brasileira:

DANIEL OLIVEIRA SILVA DE SOUZA
1 mês e 26 dias – 11JUL2013 até 06SET2013.

§ 2º Serviço Público Civil:

I - Serviço Público Federal:

ANDREIA MIRANDA SPYRIDES
1 ano, 2 meses e 7 dias – 02ABR2018 até 09JUN2019.

RAVENA CAROLINA DE CARVALHO
1 ano e 19 dias – 08MAR2016 até 27MAR2017.

LUIZ GUILHERME BATISTA GENÚ
1 ano, 3 meses e 27 dias – 04SET2015 até 31DEZ2016.

MANUELA LIMA DE CARVALHO DA ROCHA
4 anos e 28 dias – 21OUT2010 até 31DEZ2011, 15MAI2015 até 31MAR2017 e 01FEV2018 até 31JAN2019.

ANDRÉ SIQUEIRA RUELA
11 meses e 13 dias – 08AGO2016 até 21JUL2017.

II - Serviço Público Estadual:

ANA CARLA GONZAGA DE OLIVEIRA
5 anos, 9 meses e 9 dias – 01JUL2013 até 09ABR2019.

BRUNA ALVAREZ LEMOS DO CARMO
1 ano, 8 meses e 17 dias – 10FEV2017 até 21DEZ2017 e 15FEV2018 até 20DEZ2018.

MARIANA SILVA PELOSI
5 anos – 22OUT2010 até 09JAN2014 e 02MAR2015 até 09JAN2017.

JEFFERSON XAVIER DE MELLO
2 anos, 6 meses e 10 dias – 01OUT2016 até 10ABR2019.

RAPHILLA MARQUES RANGE
5 anos, 3 meses e 19 dias – 20DEZ2013 até 08ABR2019.

III - Serviço Público Municipal:

LIVIA AYRÃO LOPES DA SILVA
4 meses e 17 dias – 01JAN2013 até 17MAI2013.

ROSEANE FERREIRA ARAUJO MAFRA
3 anos, 1 mês e 29 dias – 12FEV2016 até 10ABR2019.

MAYARA DE ARAÚJO MATTOS
2 anos, 3 meses e 8 dias – 29DEZ2016 até 04ABR2019.

PRISCILA ROSSINI GOMES SANTOS
2 anos, 1 mês e 7 dias – 02ABR2012 até 01JAN2013, 27ABR2016 até 30DEZ2016 e 21FEV2017 até 24OUT2017.

ROBERTA FERREIRA FORTINS DE MOURA
1 ano, 5 meses e 19 dias – 27OUT2017 até 15ABR2019.

LAÍS MORAES TEIXEIRA
1 ano, 5 meses e 26 dias – 25SET2017 até 01ABR2019.

FELIPE NOGUEIRA AZEVEDO LEMOS
4 anos, 11 meses e 26 dias – 01ABR2009 até 28ABR2014.

FRANCISCA VERONICA MADEIRA MELO RODRIGUES
1 ano, 11 meses e 28 dias – 06ABR2017 até 04ABR2019.

FERNANDA CONCEIÇÃO SILVA DO AMORIM
2 anos, 6 meses e 22 dias – 17JUL2011 até 23NOV2012 e 26NOV2014 até 11FEV2016.

Art. 3º Esta Portaria entra em vigor na presente data, com efeitos administrativos retroativos a 10JUN2019.

FLÁVIO AUGUSTO VIANA ROCHA
Vice-Almirante
Comandante
THIAGO DOS SANTOS GUIMARÃES
Capitão-Tenente
Assistente
AUTENTICADO DIGITALMENTE

Distribuição:
CIAW, DEnsM, DGPM, DPMM, DSM, SIM, SSPM, DN-60, DN-61, DN-61.3, DN-65 e Arquivo.

BRAZILIAN NAVY

COMMAND OF THE 1ST NAVAL DISTRICT

61.3/082.1.01

ORDINANCE No. 1215/Com1stND, DATED DECEMBER 9, 2019

Promotion of Midshipmen (RM2) to the Rank of Second Lieutenant (RM2)

The **COMMANDER OF THE 1ST NAVAL DISTRICT**, in the exercise of the authority conferred upon him by item II of Article 46 of Decree No. 4,780, dated July 15, 2003, and in accordance with the provisions of paragraphs 1 and 2 of Article 39 of said Decree, hereby resolves:

Art. 1. To promote to the rank of Second Lieutenant of the 2nd Class Reserve of the Navy (RM2) and to include in the Naval Reserve Officers Corps (CORM), remaining called up and incorporated as Officers for the completion of the Adaptation or Technical Service Training Program, the following Midshipmen (GM):

I – Effective December 10, 2019:

GM (RM2-S)	19.0824.28	MARIANA NOGUEIRA SILVEIRA;
GM (RM2-S)	19.0823.47	ROSEANE FERREIRA ARAUJO MAFRA;
GM (RM2-EN)	19.0834.24	FREDERICO AMORIM SAFATLE;
GM (RM2-S)	19.0821.00	RHAYSSA SILVEIRA GARIOS;
GM (RM2-T)	19.0825.50	SAMIRA PEIXOTO RODRIGUES;
GM (RM2-T)	19.0836.96	DAIANE ROCHA PEREIRA;
GM (RM2-T)	19.0826.73	ROBERTA MOTTA DA SILVA SILVEIRA;
GM (RM2-T)	19.0833.94	FREDERICO OZANAN MARCONDES RAMOS FILHO;
GM (RM2-S)	19.0877.99	ESTHER FERREIRA TIMÓTEO;
GM (RM2-T)	15.1159.68	RANNA RANNUAI RODRIGUES SILVA;
GM (RM2-T)	19.0834.08	ELIZÂNGELA REGINA DE MAGALHÃES GRANERO;
GM (RM2-T)	19.0826.90	STEFFI GRECHE BARRETO;
GM (RM2-T)	19.0836.61	PATRÍCIA RAMALDES FERREIRA DA SILVA MOREIRA;
GM (RM2-S)	19.0822.40	PRISCILA ROSSINI GOMES SANTOS;
GM (RM2-S)	19.0822.15	LIVIA GOUDINHO DA CUNHA;

GM (RM2-S)	19.0827.97	AMANDA GURJÃO DE QUEIROZ MENDES;
GM (RM2-S)	19.0829.32	ANA CARLA GONZAGA DE OLIVEIRA;
GM (RM2-S)	19.0822.66	NAYANE ABREU DO AMARAL E SILVA;
GM (RM2-S)	19.0828.27	ALINE PROCÓPIO DE ALBUQUERQUE;
GM (RM2-T)	19.0837.93	BRUNO DA SILVA PINTO;
GM (RM2-T)	19.0839.71	ARIELA CRISTINA DAMASCENO DE SOUZA;
GM (RM2-T)	19.0841.29	ANDRÉ SIQUEIRA RUELA;
GM (RM2-T)	19.0833.60	FERNANDA VIEIRA GUIMARÃES;
GM (RM2-S)	19.0828.86	JULIA MARIA CABRAL RELVAS JACOME BERTOLDI;
GM (RM2-S)	86.7680.51	MARIA ALBERMÁRIA VERAS SIQUEIRA;
GM (RM2-T)	19.0831.14	CELIO ROBERTO CANUTO DE MELO;
GM (RM2-T)	19.0837.18	CECÍLIA PAES RIBEIRO;
GM (RM2-Md)	19.0830.17	HANNA CAROLINA CAMPOS FERREIRA;
GM (RM2-S)	87.0904.31	NATHALIA DE FÁTIMA RODRIGUES CRUZ;
GM (RM2-S)	19.0826.65	MARINA LIMA E SILVA;
GM (RM2-CD)	19.0821.42	MARIANA CAMPELLO NUNES;
GM (RM2-S)	19.0830.09	JULIANA DIAS CIRILO;
GM (RM2-S)	19.0820.96	RENATA DE AZEVEDO MACEDO;
GM (RM2-S)	19.0822.82	STEPHANIE CARVALHAL MOREIRA DOS SANTOS;
GM (RM2-S)	19.0829.08	LAÍS SANTOS SANTANA;
GM (RM2-S)	19.0823.71	YURI SABINO FREITAS;
GM (RM2-EN)	19.0835.56	HENRIQUE ALVES GASPAR RIBEIRO;
GM(RM2-S)	19.0830.33	ARTUR MATUQUE DA SILVA;
GM (RM2-S)	19.0821.77	MAXSUELEN GONÇALVES MARTINS;
GM (RM2-T)	19.0836.29	JÉSSICA MARTINS DA SILVA;
GM (RM2-S)	19.0820.88	ROBERTA FERREIRA FORTINS DE MOURA;
GM (RM2-S)	19.0821.69	THAMIRES EUGÊNIO DE MORAES;
GM (RM2-T)	19.0876.24	TATIANA ALVAREZ ARRUDA;
GM(RM2-T)	19.0838.31	DÉBORA LOUÍSE SIMÕES GOUVÊA;
GM(RM2-EN)	19.0838.23	CLARICE GUIMARÃES BARROS MARTINS;
GM (RM2-CD)	19.0822.07	LUIZA GONÇALVES ROMA;
GM(RM2-S)	19.0829.67	CELINA SOARES DE CARVALHO;
GM(RM2-S)	19.0824.10	RITA DE CASSIA CARVALHO DE ALMEIDA NOGUEIRA;
GM (RM2-T)	19.0836.11	ELIANE TEIXEIRA RABELLO;
GM(RM2-T)	87.1035.67	THAINÃ DEROCI FONTE;
GM (RM2-T)	15.0592.01	CAMILA RUPERTI CANABARRO;

GM (RM2-S)	19.0839.47	ISABELLE DA NOBREGA FERREIRA;
GM (RM2-EN)	19.0827.46	THAÍS GONÇALVES SERMENHO;
GM (RM2-S)	19.0821.34	RAVENA CAROLINA DE CARVALHO;
GM (RM2-CD)	19.0827.71	ANDRÉA LAUDARES MARQUES;
GM (RM2-S)	19.0827.62	KELLY CRISTINA DE SOUZA ANDRADE;
GM(RM2-T)	19.0837.51	ADRIENE DAFNE VIEIRA DA SILVA;
GM(RM2-EN)	19.0826.57	LUMA COSTA LIMA DOS SANTOS;
GM(RM2-T)	15.1359.34	THAINÁ CASTRO DA SILVA;
GM(RM2-S)	19.0824.52	LUANE SANTIAGO GOMES DA SILVA;
GM(RM2-T)	19.0837.26	DEBORA DE SOUZA CRUZ HAUA DA SILVA;
GM(RM2-EN)	19.0823.21	ANDRÉ BARBOSA GONÇALVES;
GM(RM2-S)	19.0829.91	JULIANA GAFFURI;
GM(RM2-CD)	86.6627.91	PRISCILLA LENNY DA SILVA DE OLIVEIRA;
GM(RM2-CD)	19.0828.43	ANDRESSA INCERTE FILIZZOLA;
GM(RM2-S)	19.0824.01	NÚBIA GAMA DA SILVA BACK;
GM (RM2-T)	19.0835.48	JULIANA DA SILVA NETO;
GM (RM2-S)	19.0876.67	NATHÁLIA CAROLINA TOMAZELLI CRESPO;
GM(RM2-T)	19.0837.69	DANIEL OLIVEIRA SILVA DE SOUZA;
GM (RM2-S)	19.0829.41	JULIANA GEORGIA CARVALHO DOS SANTOS;
GM (RM2-T)	19.0833.01	JULIANA BIASOLI CYPRIANO;
GM(RM2-S)	19.0823.63	RAFAELA FERREIRA TEIXEIRA;
GM (RM2-S)	19.0821.51	TATIANA MONTEIRO DA PAIXÃO;
GM (RM2-EN)	19.0834.16	FÁBIO BENVENUTI DE ABREU PEREZ;
GM (RM2-T)	19.0835.72	JENNIFER DA SILVA ARÊAS;
GM (RM2-T)	19.0821.18	WILAYNE ATANAZIO DOS SANTOS GARCIA;
GM (RM2-T)	19.0834.59	ISADORA SILVANO FONTES;
GM(RM2-S)	19.0822.58	MARIANA SILVA PELOSI;
GM(RM2-S)	17.0043.14	ELAINE ARAUJO DA SILVA;
GM (RM2-Md)	19.0821.93	FLÁVIA DE MELLO VIOT;
GM (RM2-T)	19.0838.40	DIOGO JOSÉ FARIA DE FARIAS;
GM (RM2-T)	19.0834.67	JULIANA DE ALMEIDA SILVA;
GM (RM2-T)	19.0833.35	JULIANA ROSANO DA SILVA;
GM (RM2-T)	19.0834.41	GABRIELLA DE OLIVEIRA SANTIAGO WOLFRAM;
GM (RM2-T)	19.0826.49	WILKA CATARINA DA SILVA SOARES;
GM (RM2-T)	19.0839.80	BIANCA DA COSTA TEIXEIRA GALISA;
GM (RM2-EN)	19.0876.75	PEDRO FERNANDES RODRIGUES;
GM (RM2-T)	19.0834.32	JOYCE KARLA DE ARAUJO MELO;
GM (RM2-T)	19.0831.90	LIVIA AYRÃO LOPES DA SILVA;
GM (RM2-T)	86.2428.81	FABIOLA LEITE DE LIMA;
GM (RM2-EN)	19.0832.89	JOÃO MARCIO SUTANA ALVIM;

GM (RM2-T)	19.0832.38	NATÁLIA MERCADANTE GÓES;
GM (RM2-S)	19.0839.12	BRUNO ARAÚJO RIBEIRO;
GM (RM2-T)	85.1448.01	ADRIANA GRACIELA VIANA DE SOUZA;
GM (RM2-S)	14.1830.81	LEILANE COSTA LEAL PEREIRA;
GM (RM2-T)	19.0826.31	VANESSA SANTOS RIBEIRO DE ALMEIDA;
GM (RM2-T)	19.0834.83	KARINE SOUZA DA SILVA;
GM (RM2-T)	19.0825.33	YAGO DOS SANTOS DAMASCENO;
GM (RM2-T)	19.0840.64	JEFFERSON XAVIER DE MELLO;
GM (RM2-T)	19.0833.27	NATHALIA RAMADE DA SILVA;
GM (RM2-T)	19.0841.53	MARIANA DE ALMEIDA RONDON;
GM (RM2-EN)	87.0907.83	BRUNO PEREIRA GÓES;
GM (RM2-EN)	19.0840.21	ARMANDO FIGUEIREDO GOMES FILHO;
GM (RM2-T)	19.0833.78	JORGE VICTOR NASCIMENTO DA SILVA;
GM (RM2-EN)	19.0833.43	GUILHERME BAUMANN CORRÊA;
GM (RM2-T)	19.0826.14	YZIS LEONOR ALMEIDA PEIXOTO NUNES;
GM (RM2-T)	19.0838.58	BARBARA DE LIMA DO CARMO DE ALMEIDA;
GM (RM2-T)	12.0346.31	ILANE PEREIRA DA SILVA;
GM (RM2-T)	19.0825.84	SUZAN BARBOZA DO NASCIMENTO;
GM (RM2-T)	19.0836.45	MARIANNE SOBRAL DE OLIVEIRA;
GM (RM2-T)	19.0837.85	DANIELLE VERAS DOS SANTOS SALLES;
GM (RM2-S)	19.0823.98	RACHEL MARINI FIGUEIRA CHIOTE ALVES DE OLIVEIRA;
GM (RM2-S)	86.5295.95	JULIANA ALVES HELENO;
GM (RM2-T)	19.0831.57	MANUELLA FERREIRA GARCIA BORGES;
GM (RM2-EN)	19.0832.46	LAURA BRAZ MONTEIRO DE BARROS;
GM (RM2-S)	19.0829.75	FABIANA SANTOS AIRES;
GM (RM2-T)	19.0825.25	THAIS DOS SANTOS PORTELLA;
GM (RM2-T)	19.0838.15	BRUNO ALVES DE SOUZA E SILVA;
GM (RM2-T)	19.0831.81	MAYARA DE ARAÚJO MATTOS;
GM (RM2-S)	19.0822.91	MANUELA LIMA CARVALHO DA ROCHA;
GM (RM2-S)	19.0821.85	NATHALIA DAMAZIO DE ALMEIDA;
GM (RM2-S)	19.0823.04	MARCELLA NOVARINO RODRIGUES DA SILVEIRA;
GM (RM2-EN)	19.0825.76	RENATA COSTA ZIMPECK MENDONÇA;
GM (RM2-T)	19.0832.97	FELIPE NOGUEIRA AZEVEDO LEMOS;
GM (RM2-T)	19.0824.79	THEREZA MARIA DA CONCEIÇÃO LIMA BINDI RODRIGUES;

GM (RM2-EN)	19.0841.02	JOSÉ GUILHERME LEOPOLDO DE MELO;
GM (RM2-CD)	19.0828.01	BÁRBARA MONTEIRO GRISOLIA;
GM (RM2-S)	11.1764.23	LAYLA ALVES DA CRUZ;
GM (RM2-S)	19.0876.59	TAIS CRISTINA BENITES VAZ;
GM (RM2-CD)	19.0823.39	FELIPE LEAL MANHÃES DE SÁ;
GM (RM2-CD)	86.8269.56	BRUNA MARIA DE CARVALHO MARTINS;
GM (RM2-T)	19.0835.64	GISELE FIGUEIREDO SILVA LOPES;
GM (RM2-T)	19.0831.31	DANIELA HADDAD MARTINS;
GM (RM2-T)	87.1652.52	TATIANE BORGES GONÇALVES;
GM (RM2-EN)	19.0831.22	CARLOS AUGUSTO CARDOSO LIMA;
GM (RM2-T)	19.0821.26	ANANDDA HUANG ALBACETE;
GM (RM2-T)	19.0829.59	KARINA FEITAL DA COSTA DE SOUZA;
GM (RM2-S)	19.0829.83	KARINA LOIS PEREIRA;
GM (RM2-T)	19.0825.41	TAMARA DA COSTA RIBEIRO GONÇALVES NOGUEIRA;
GM (RM2-EN)	19.0824.61	NINA CARDOSO GRUBER;
GM (RM2-T)	19.0841.88	JOÃO PAULO DA COSTA PEDROSA;
GM (RM2-T)	86.1710.97	MARIANA VIÉGAS SOARES;
GM (RM2-T)	86.8138.89	JULIANA LAGI CASTRO PEREZ GARCIA;
GM (RM2-T)	19.0825.09	ROZELANE DE MATOS MARTINS VIANA;
GM (RM2-T)	86.7834.24	RAQUEL SAMPAIO MELLO;
GM (RM2-T)	19.0835.05	PABLO GESTO ARAUJO RODRIGUES VIEGAS;
GM (RM2-EN)	19.0833.86	JÉSSICA DOS REIS ARAÚJO;
GM (RM2-T)	19.0840.56	GABRIELLE DIAS MATTOS;
GM (RM2-S)	19.0824.36	PRINCE DAIANE FELIZARDO SILVA NASCIMENTO;
GM (RM2-T)	19.0827.20	TAYANE REIS CARVALHO SESSA;
GM (RM2-Md)	19.0823.80	PALOMA GASSEN FACCENDA;
GM (RM2-T)	19.0823.12	ANA RITA PESSUTO MIRANDA PIXIOLINI;
GM (RM2-T)	19.0836.37	MARIA KATYANE TORRES RIBEIRO;
GM (RM2-EN)	19.0834.91	HUGO CASSÉ DA SILVA;
GM (RM2-S)	19.0828.35	GABRIEL ROQUE FERREIRA;
GM (RM2-T)	13.1092.01	NATACHA MESQUITA ALMEIDA MOREIRA;
GM (RM2-T)	19.0826.06	SABRINA REIS DE AMORIM;
GM (RM2-T)	19.0831.65	MICHELLE DA SILVA VALERIO;
GM (RM2-S)	19.0829.16	JÉSSICA GONÇALVES DE LIMA;
GM (RM2-T)	19.0834.75	GABRIELA FERNANDES LOPES;
GM (RM2-T)	19.0827.38	ROBERTO MAEHLER;
GM (RM2-T)	17.0068.56	MÁRIO TINOCO DO AMARAL;

GM (RM2-T)	17.0892.12	THIAGO OCTÁVIO NOGUEIRA DE CARVALHO;
GM (RM2-T)	19.0831.49	CHARLES BARTEL FARIAS;
GM (RM2-Md)	19.0822.23	MAITÊ TOSTES CALDAS FROTA;
GM (RM2-S)	87.0418.39	AYEXA SOUZA DA CRUZ;
GM (RM2-EN)	19.0835.99	FERNANDA COUTO SILVA;
GM (RM2-EN)	19.0838.07	BRAYNER CARDOSO DOS SANTOS;
GM (RM2-T)	19.0830.92	CAROLINA SUAREZ PARADA;
GM (RM2-T)	19.0841.45	RAPHAELE METRI PERROTTA LOURENÇO;
GM (RM2-T)	87.3953.80	DANIELA RAMOS DE OLIVEIRA;
GM (RM2-EN)	19.0841.61	LUIZ GUILHERME BATISTA GENÚ;
GM (RM2-T)	19.0836.53	LARISSA CÂNDIDO PIAZZI;
GM (RM2-T)	19.0840.48	FABIANA ABREU MORAES;
GM (RM2-T)	19.0831.73	MANUELA WERMELINGER ARAUJO DE BARROS;
GM (RM2-T)	19.0837.42	CLARA CALDEIRA DIAS;
GM (RM2-T)	19.0841.11	MAURICIO PEIXOTO SCAPOLATEMPORE;
GM (RM2-S)	19.0829.24	DÉBORA DOS SANTOS VIEIRA;
GM (RM2-T)	19.0833.19	IURI VINUTO JOSINO;
GM (RM2-EN)	19.0832.03	LAÍS MORAES TEIXEIRA;
GM (RM2-T)	19.0827.54	THAUAN DE OLIVEIRA NICOMEDES;
GM (RM2-EN)	19.0841.70	LUIZ FERNANDO CAVALCANTI GALVÃO;
GM (RM2-EN)	19.0835.30	LUCIANO CESAR DA SILVA COSTA;
GM (RM2-T)	19.0840.13	DÉBORA CRISTINA BAHIA FORTES;
GM (RM2-T)	19.0835.13	ANA PAULA RODRIGUES PERLAMAGNA;
GM (RM2-T)	04.1916.50	ELIANE SOUZA DOS SANTOS DALTRO;
GM (RM2-T)	19.0830.84	MARCO THADEU GASPAR DIAS;
GM (RM2-T)	19.0841.37	LEANDRO PINTO PEREIRA;
GM (RM2-T)	19.0832.20	MARCELO MOREIRA MELO;
GM (RM2-S)	13.0666.41	FRANCISCA VERONICA MADEIRA MELO RODRIGUES;
GM (RM2-CD)	19.0828.51	ANDREIA MIRANDA SPYRIDES;
GM (RM2-T)	19.0836.88	LUANA BARROS FREIRE;
GM (RM2-EN)	19.0827.03	OCIMAR JOSÉ CASTRO JUNIOR;
GM (RM2-T)	19.0830.76	NÍNIVE ALVES VIERIA DE MATOS;
GM (RM2-T)	19.0835.21	ELAINE CRISTINA DE SOUSA SANTANA;
GM (RM2-T)	86.3045.18	SUELLEM DE MOURA ANTUNES AZEVEDO;
GM (RM2-T)	19.0840.99	LEONARDO ROSA CAMPOS;
GM (RM2-T)	19.0825.92	TIAGO BINATO NEVES;
GM (RM2-S)	19.0827.89	FERNANDA CONCEIÇÃO SILVA DO AMORIM;

GM (RM2-T)	19.0840.05	ANA BEATRIZ AZEVEDO RAMOS;
GM (RM2-T)	19.0839.04	MARCELO HENRIQUE VINCI BORGES;
GM (RM2-Md)	18.1800.19	MARIANA CERQUEIRA MACIEL VIANNA;
GM (RM2-S)	19.0828.78	GISELLE SANT´ ANNA LYRA;
GM (RM2-EN)	19.0837.00	CESAR NOBREGA RODRIGUES;
GM (RM2-T)	19.0839.98	DANIELA MENDES ZETTERMANN;
GM (RM2-T)	86.2983.13	BRUNA ALVAREZ LEMOS DO CARMO;
GM (RM2-T)	19.0828.60	FERNANDA SILVA LINHARES;
GM (RM2-T)	09.1294.13	ÉRICA BARREIROS PACHECO SANTOS DO NASCIMENTO;
GM (RM2-S)	19.0830.25	CECILIA DO NASCIMENTO LOPES;
GM (RM2-T)	86.1241.45	VILSON FERNANDES DE SOUZA;
GM (RM2-S)	06.0650.23	LÉIA PACHECO DA COSTA DA SILVA;
GM (RM2-T)	19.0876.83	RODRIGO SAINT-CLAIR FREITAS DA CUNHA;
GM (RM2-T)	19.0835.81	GUSTAVO PALMARES GOMES DA COSTA;
GM (RM2-T)	19.0824.87	THALYTA PERES DOS REIS;
GM (RM2-T)	19.0832.62	PRISCILA SOUSA DOS SANTOS MIRANDA SOARES;
GM (RM2-T)	19.0826.81	TIAGO OLIVEIRA COUTO;
GM (RM2-T)	19.0832.11	MONALISA PIMENTEL SOUZA DE FARIAS;
GM (RM2-T)	19.0836.02	HENRIQUE SAUERBRONN ANDRADE PEREIRA;
GM (RM2-S)	19.0828.94	KALINCA VITÓRIA CARDOSO CUSIELO;
GM (RM2-T)	05.1350.28	KEILLA CIBELLE SANTOS DO NASCIMENTO PEREIRA;
GM (RM2-T)	19.0877.81	RONÁLIA PAULINO LESSA;
GM (RM2-EN)	19.0825.17	VANESSA SOUZA REBOUÇAS;
GM (RM2-T)	19.0876.91	FABRICIO CARLOS DE OLIVEIRA FAGUNDES;
GM (RM2-T)	19.0825.68	YASMIN TAYNA ALVES DE GONZALEZ;
GM (RM2-T)	19.0832.54	OTAVIO RODRIGUES DA SILVA NUNES;
GM (RM2-T)	19.0837.77	ALEX ALBERT SOUZA DE CARVALHO;
GM (RM2-S)	19.0822.31	RAPHILLA MARQUES RANGEL;
GM (RM2-T)	19.0832.71	LILIANE DOS SANTOS TRINDADE DETTOGNI;
GM (RM2-T)	19.0826.22	RENATA DE ARAUJO PEREIRA ANDRADE.

II – Effective December 12, 2019:

GM (RM2-EN)	19.0839.3	CAMILA MELO DE OLIVEIRA;

GM (RM2-EN)	19.0839.55	SUELI PADRONI DE SOUZA CHAGAS;
GM (RM2-EN)	18.1801.75	ANDRÉ LUIZ MARCELINO TORRES.

III – Effective December 14, 2019:

GM (RM2-S)	19.0878.02	ANTONIO LEONAN DE SOUZA BEZERRA.

IV – Effective December 16, 2019:

GM (RM2-T)	19.0876.41	RAFAELA DA SILVA MATILDES;
GM (RM2-T)	19.0876.16	SUÊRDA MARIA PAIVA DE SOUSA;
GM (RM2-S)	19.0876.32	MARCELA SOUZA CUNHA;
GM (RM2-T)	19.0877.05	BRUNNA HERDY MAGALHÃES DA SILVEIRA.

Art. 2. This Ordinance shall enter into force on the date hereof.

FLÁVIO AUGUSTO VIANA ROCHA
Vice Admiral
Commander

THIAGO DOS SANTOS GUIMARÃES
Lieutenant Commander
Assistant

DIGITALLY AUTHENTICATED

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62002.009341/2019-04

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 18, 2026

MARINHA DO BRASIL

COMANDO DO 1º DISTRITO NAVAL

61.3/082.1.01

PORTARIA Nº 1215 /Com1ºDN, DE 9 DE DEZEMBRO DE 2019.

Promoção de Guardas-Marinhas (RM2) ao posto de Segundo-Tenente (RM2).

O COMANDANTE DO 1º DISTRITO NAVAL, no uso da atribuição que lhe confere o contido no inciso II do art. 46 do Decreto nº 4.780, de 15 de julho de 2003, e de acordo com o disposto nos §§ 1º e 2º do art. 39 do citado Decreto, resolve:

Art. 1º Promover ao posto de Segundo-Tenente da Reserva de 2ª Classe da Marinha (RM2) e incluir no Corpo de Oficiais da Reserva da Marinha (CORM), continuando convocados e incorporados como Oficiais, para a conclusão do Estágio de Adaptação ou de Serviço Técnico, os seguintes Guardas-Marinhas:

I – A partir de 10DEZ2019:

GM (RM2-S)	19.0824.28	MARIANA NOGUEIRA SILVEIRA;
GM (RM2-S)	19.0823.47	ROSEANE FERREIRA ARAUJO MAFRA;
GM (RM2-EN)	19.0834.24	FREDERICO AMORIM SAFATLE;
GM (RM2-S)	19.0821.00	RHAYSSA SILVEIRA GARIOS;
GM (RM2-T)	19.0825.50	SAMIRA PEIXOTO RODRIGUES;
GM (RM2-T)	19.0836.96	DAIANE ROCHA PEREIRA;
GM (RM2-T)	19.0826.73	ROBERTA MOTTA DA SILVA SILVEIRA;
GM (RM2-T)	19.0833.94	FREDERICO OZANAN MARCONDES RAMOS FILHO;
GM (RM2-S)	19.0877.99	ESTHER FERREIRA TIMÓTEO;
GM (RM2-T)	15.1159.68	RANNA RANNUAI RODRIGUES SILVA;
GM (RM2-T)	19.0834.08	ELIZÂNGELA REGINA DE MAGALHÃES GRANERO;
GM (RM2-T)	19.0826.90	STEFFI GRECHE BARRETO;
GM (RM2-T)	19.0836.61	PATRÍCIA RAMALDES FERREIRA DA SILVA MOREIRA;
GM (RM2-S)	19.0822.40	PRISCILA ROSSINI GOMES SANTOS;
GM (RM2-S)	19.0822.15	LIVIA GOUDINHO DA CUNHA;

GM (RM2-S)	19.0827.97	AMANDA GURJÃO DE QUEIROZ MENDES;
GM (RM2-S)	19.0829.32	ANA CARLA GONZAGA DE OLIVEIRA;
GM (RM2-S)	19.0822.66	NAYANE ABREU DO AMARAL E SILVA;
GM (RM2-S)	19.0828.27	ALINE PROCÓPIO DE ALBUQUERQUE;
GM (RM2-T)	19.0837.93	BRUNO DA SILVA PINTO;
GM (RM2-T)	19.0839.71	ARIELA CRISTINA DAMASCENO DE SOUZA;
GM (RM2-T)	19.0841.29	ANDRÉ SIQUEIRA RUELA;
GM (RM2-T)	19.0833.60	FERNANDA VIEIRA GUIMARÃES;
GM (RM2-S)	19.0828.86	JULIA MARIA CABRAL RELVAS JACOME BERTOLDI;
GM (RM2-S)	86.7680.51	MARIA ALBERMÁRIA VERAS SIQUEIRA;
GM (RM2-T)	19.0831.14	CELIO ROBERTO CANUTO DE MELO;
GM (RM2-T)	19.0837.18	CECÍLIA PAES RIBEIRO;
GM (RM2-Md)	19.0830.17	HANNA CAROLINA CAMPOS FERREIRA;
GM (RM2-S)	87.0904.31	NATHALIA DE FÁTIMA RODRIGUES CRUZ;
GM (RM2-S)	19.0826.65	MARINA LIMA E SILVA;
GM (RM2-CD)	19.0821.42	MARIANA CAMPELLO NUNES;
GM (RM2-S)	19.0830.09	JULIANA DIAS CIRILO;
GM (RM2-S)	19.0820.96	RENATA DE AZEVEDO MACEDO;
GM (RM2-S)	19.0822.82	STEPHANIE CARVALHAL MOREIRA DOS SANTOS;
GM (RM2-S)	19.0829.08	LAÍS SANTOS SANTANA;
GM (RM2-S)	19.0823.71	YURI SABINO FREITAS;
GM (RM2-EN)	19.0835.56	HENRIQUE ALVES GASPAR RIBEIRO;
GM (RM2-S)	19.0830.33	ARTUR MATUQUE DA SILVA;
GM (RM2-S)	19.0821.77	MAXSUELEN GONÇALVES MARTINS;
GM (RM2-T)	19.0836.29	JÉSSICA MARTINS DA SILVA;
GM (RM2-S)	19.0820.88	ROBERTA FERREIRA FORTINS DE MOURA;
GM (RM2-S)	19.0821.69	THAMIRES EUGÊNIO DE MORAES;
GM (RM2-T)	19.0876.24	TATIANA ALVAREZ ARRUDA;
GM (RM2-T)	19.0838.31	DÉBORA LOUÍSE SIMÕES GOUVÊA;
GM (RM2-EN)	19.0838.23	CLARICE GUIMARÃES BARROS MARTINS;
GM (RM2-CD)	19.0822.07	LUIZA GONÇALVES ROMA;
GM (RM2-S)	19.0829.67	CELINA SOARES DE CARVALHO;
GM (RM2-S)	19.0824.10	RITA DE CASSIA CARVALHO DE ALMEIDA NOGUEIRA;
GM (RM2-T)	19.0836.11	ELIANE TEIXEIRA RABELLO;
GM (RM2-T)	87.1035.67	THAINÃ DEROCI FONTE;
GM (RM2-T)	15.0592.01	CAMILA RUPERTI CANABARRO;

GM (RM2-S)	19.0839.47	ISABELLE DA NOBREGA FERREIRA;
GM (RM2-EN)	19.0827.46	THAÍS GONÇALVES SERMENHO;
GM (RM2-S)	19.0821.34	RAVENA CAROLINA DE CARVALHO;
GM (RM2-CD)	19.0827.71	ANDRÉA LAUDARES MARQUES;
GM (RM2-S)	19.0827.62	KELLY CRISTINA DE SOUZA ANDRADE;
GM (RM2-T)	19.0837.51	ADRIENE DAFNE VIEIRA DA SILVA;
GM (RM2-EN)	19.0826.57	LUMA COSTA LIMA DOS SANTOS;
GM (RM2-T)	15.1359.34	THAINÁ CASTRO DA SILVA;
GM (RM2-S)	19.0824.52	LUANE SANTIAGO GOMES DA SILVA;
GM (RM2-T)	19.0837.26	DEBORA DE SOUZA CRUZ HAUA DA SILVA;
GM (RM2-EN)	19.0823.21	ANDRÉ BARBOSA GONÇALVES;
GM (RM2-S)	19.0829.91	JULIANA GAFFURI;
GM (RM2-CD)	86.6627.91	PRISCILLA LENNY DA SILVA DE OLIVEIRA;
GM (RM2-CD)	19.0828.43	ANDRESSA INCERTE FILIZZOLA;
GM (RM2-S)	19.0824.01	NÚBIA GAMA DA SILVA BACK;
GM (RM2-T)	19.0835.48	JULIANA DA SILVA NETO;
GM (RM2-S)	19.0876.67	NATHÁLIA CAROLINA TOMAZELLI CRESPO;
GM (RM2-T)	19.0837.69	DANIEL OLIVEIRA SILVA DE SOUZA;
GM (RM2-S)	19.0829.41	JULIANA GEORGIA CARVALHO DOS SANTOS;
GM (RM2-T)	19.0833.01	JULIANA BIASOLI CYPRIANO;
GM (RM2-S)	19.0823.63	RAFAELA FERREIRA TEIXEIRA;
GM (RM2-S)	19.0821.51	TATIANA MONTEIRO DA PAIXÃO;
GM (RM2-EN)	19.0834.16	FÁBIO BENVENUTI DE ABREU PEREZ;
GM (RM2-T)	19.0835.72	JENNIFER DA SILVA ARÊAS;
GM (RM2-T)	19.0821.18	WILAYNE ATANAZIO DOS SANTOS GARCIA;
GM (RM2-T)	19.0834.59	ISADORA SILVANO FONTES;
GM (RM2-S)	19.0822.58	MARIANA SILVA PELOSI;
GM (RM2-S)	17.0043.14	ELAINE ARAUJO DA SILVA;
GM (RM2-Md)	19.0821.93	FLÁVIA DE MELLO VIOT;
GM (RM2-T)	19.0838.40	DIOGO JOSÉ FARIA DE FARIAS;
GM (RM2-T)	19.0834.67	JULIANA DE ALMEIDA SILVA;
GM (RM2-T)	19.0833.35	JULIANA ROSANO DA SILVA;
GM (RM2-T)	19.0834.41	GABRIELLA DE OLIVEIRA SANTIAGO WOLFRAM;
GM (RM2-T)	19.0826.49	WILKA CATARINA DA SILVA SOARES;
GM (RM2-T)	19.0839.80	BIANCA DA COSTA TEIXEIRA GALISA;
GM (RM2-EN)	19.0876.75	PEDRO FERNANDES RODRIGUES;
GM (RM2-T)	19.0834.32	JOYCE KARLA DE ARAUJO MELO;
GM (RM2-T)	19.0831.90	LIVIA AYRÃO LOPES DA SILVA;
GM (RM2-T)	86.2428.81	FABIOLA LEITE DE LIMA;
GM (RM2-EN)	19.0832.89	JOÃO MARCIO SUTANA ALVIM;

GM (RM2-T)	19.0832.38	NATÁLIA MERCADANTE GÓES;
GM (RM2-S)	19.0839.12	BRUNO ARAÚJO RIBEIRO;
GM (RM2-T)	85.1448.01	ADRIANA GRACIELA VIANA DE SOUZA;
GM (RM2-S)	14.1830.81	LEILANE COSTA LEAL PEREIRA;
GM (RM2-T)	19.0826.31	VANESSA SANTOS RIBEIRO DE ALMEIDA;
GM (RM2-T)	19.0834.83	KARINE SOUZA DA SILVA;
GM (RM2-T)	19.0825.33	YAGO DOS SANTOS DAMASCENO;
GM (RM2-T)	19.0840.64	JEFFERSON XAVIER DE MELLO;
GM (RM2-T)	19.0833.27	NATHALIA RAMADE DA SILVA;
GM (RM2-T)	19.0841.53	MARIANA DE ALMEIDA RONDON;
GM (RM2-EN)	87.0907.83	BRUNO PEREIRA GÓES;
GM (RM2-EN)	19.0840.21	ARMANDO FIGUEIREDO GOMES FILHO;
GM (RM2-T)	19.0833.78	JORGE VICTOR NASCIMENTO DA SILVA;
GM (RM2-EN)	19.0833.43	GUILHERME BAUMANN CORRÊA;
GM (RM2-T)	19.0826.14	YZIS LEONOR ALMEIDA PEIXOTO NUNES;
GM (RM2-T)	19.0838.58	BARBARA DE LIMA DO CARMO DE ALMEIDA;
GM (RM2-T)	12.0346.31	ILANE PEREIRA DA SILVA;
GM (RM2-T)	19.0825.84	SUZAN BARBOZA DO NASCIMENTO;
GM (RM2-T)	19.0836.45	MARIANNE SOBRAL DE OLIVEIRA;
GM (RM2-T)	19.0837.85	DANIELLE VERAS DOS SANTOS SALLES;
GM (RM2-S)	19.0823.98	RACHEL MARINI FIGUEIRA CHIOTE ALVES DE OLIVEIRA;
GM (RM2-S)	86.5295.95	JULIANA ALVES HELENO;
GM (RM2-T)	19.0831.57	MANUELLA FERREIRA GARCIA BORGES;
GM (RM2-EN)	19.0832.46	LAURA BRAZ MONTEIRO DE BARROS;
GM (RM2-S)	19.0829.75	FABIANA SANTOS AIRES;
GM (RM2-T)	19.0825.25	THAIS DOS SANTOS PORTELLA;
GM (RM2-T)	19.0838.15	BRUNO ALVES DE SOUZA E SILVA;
GM (RM2-T)	19.0831.81	MAYARA DE ARAÚJO MATTOS;
GM (RM2-S)	19.0822.91	MANUELA LIMA CARVALHO DA ROCHA;
GM (RM2-S)	19.0821.85	NATHALIA DAMAZIO DE ALMEIDA;
GM (RM2-S)	19.0823.04	MARCELLA NOVARINO RODRIGUES DA SILVEIRA;
GM (RM2-EN)	19.0825.76	RENATA COSTA ZIMPECK MENDONÇA;
GM (RM2-T)	19.0832.97	FELIPE NOGUEIRA AZEVEDO LEMOS;
GM (RM2-T)	19.0824.79	THEREZA MARIA DA CONCEIÇÃO LIMA BINDI RODRIGUES;

GM (RM2-EN)	19.0841.02	JOSÉ GUILHERME LEOPOLDO DE MELO;
GM (RM2-CD)	19.0828.01	BÁRBARA MONTEIRO GRISOLIA;
GM (RM2-S)	11.1764.23	LAYLA ALVES DA CRUZ;
GM (RM2-S)	19.0876.59	TAIS CRISTINA BENITES VAZ;
GM (RM2-CD)	19.0823.39	FELIPE LEAL MANHÃES DE SÁ;
GM (RM2-CD)	86.8269.56	BRUNA MARIA DE CARVALHO MARTINS;
GM (RM2-T)	19.0835.64	GISELE FIGUEIREDO SILVA LOPES;
GM (RM2-T)	19.0831.31	DANIELA HADDAD MARTINS;
GM (RM2-T)	87.1652.52	TATIANE BORGES GONÇALVES;
GM (RM2-EN)	19.0831.22	CARLOS AUGUSTO CARDOSO LIMA;
GM (RM2-T)	19.0821.26	ANANDDA HUANG ALBACETE;
GM (RM2-T)	19.0829.59	KARINA FEITAL DA COSTA DE SOUZA;
GM (RM2-S)	19.0829.83	KARINA LOIS PEREIRA;
GM (RM2-T)	19.0825.41	TAMARA DA COSTA RIBEIRO GONÇALVES NOGUEIRA;
GM (RM2-EN)	19.0824.61	NINA CARDOSO GRUBER;
GM (RM2-T)	19.0841.88	JOÃO PAULO DA COSTA PEDROSA;
GM (RM2-T)	86.1710.97	MARIANA VIÉGAS SOARES;
GM (RM2-T)	86.8138.89	JULIANA LAGI CASTRO PEREZ GARCIA;
GM (RM2-T)	19.0825.09	ROZELANE DE MATOS MARTINS VIANA;
GM (RM2-T)	86.7834.24	RAQUEL SAMPAIO MELLO;
GM (RM2-T)	19.0835.05	PABLO GESTO ARAUJO RODRIGUES VIEGAS;
GM (RM2-EN)	19.0833.86	JÉSSICA DOS REIS ARAÚJO;
GM (RM2-T)	19.0840.56	GABRIELLE DIAS MATTOS;
GM (RM2-S)	19.0824.36	PRINCE DAIANE FELIZARDO SILVA NASCIMENTO;
GM (RM2-T)	19.0827.20	TAYANE REIS CARVALHO SESSA;
GM (RM2-Md)	19.0823.80	PALOMA GASSEN FACCENDA;
GM (RM2-T)	19.0823.12	ANA RITA PESSUTO MIRANDA PIXIOLINI;
GM (RM2-T)	19.0836.37	MARIA KATYANE TORRES RIBEIRO;
GM (RM2-EN)	19.0834.91	HUGO CASSÉ DA SILVA;
GM (RM2-S)	19.0828.35	GABRIEL ROQUE FERREIRA;
GM (RM2-T)	13.1092.01	NATACHA MESQUITA ALMEIDA MOREIRA;
GM (RM2-T)	19.0826.06	SABRINA REIS DE AMORIM;
GM (RM2-T)	19.0831.65	MICHELLE DA SILVA VALERIO;
GM (RM2-S)	19.0829.16	JÉSSICA GONÇALVES DE LIMA;
GM (RM2-T)	19.0834.75	GABRIELA FERNANDES LOPES;
GM (RM2-T)	19.0827.38	ROBERTO MAEHLER;
GM (RM2-T)	17.0068.56	MÁRIO TINOCO DO AMARAL;

GM (RM2-T)	17.0892.12	THIAGO OCTÁVIO NOGUEIRA DE CARVALHO;
GM (RM2-T)	19.0831.49	CHARLES BARTEL FARIAS;
GM (RM2-Md)	19.0822.23	MAITÊ TOSTES CALDAS FROTA;
GM (RM2-S)	87.0418.39	AYEXA SOUZA DA CRUZ;
GM (RM2-EN)	19.0835.99	FERNANDA COUTO SILVA;
GM (RM2-EN)	19.0838.07	BRAYNER CARDOSO DOS SANTOS;
GM (RM2-T)	19.0830.92	CAROLINA SUAREZ PARADA;
GM (RM2-T)	19.0841.45	RAPHAELE METRI PERROTTA LOURENÇO;
GM (RM2-T)	87.3953.80	DANIELA RAMOS DE OLIVEIRA;
GM (RM2-EN)	19.0841.61	LUIZ GUILHERME BATISTA GENÚ;
GM (RM2-T)	19.0836.53	LARISSA CÂNDIDO PIAZZI;
GM (RM2-T)	19.0840.48	FABIANA ABREU MORAES;
GM (RM2-T)	19.0831.73	MANUELA WERMELINGER ARAUJO DE BARROS;
GM (RM2-T)	19.0837.42	CLARA CALDEIRA DIAS;
GM (RM2-T)	19.0841.11	MAURICIO PEIXOTO SCAPOLATEMPORE;
GM (RM2-S)	19.0829.24	DÉBORA DOS SANTOS VIEIRA;
GM (RM2-T)	19.0833.19	IURI VINUTO JOSINO;
GM (RM2-EN)	19.0832.03	LAÍS MORAES TEIXEIRA;
GM (RM2-T)	19.0827.54	THAUAN DE OLIVEIRA NICOMEDES;
GM (RM2-EN)	19.0841.70	LUIZ FERNANDO CAVALCANTI GALVÃO;
GM (RM2-EN)	19.0835.30	LUCIANO CESAR DA SILVA COSTA;
GM (RM2-T)	19.0840.13	DÉBORA CRISTINA BAHIA FORTES;
GM (RM2-T)	19.0835.13	ANA PAULA RODRIGUES PERLAMAGNA;
GM (RM2-T)	04.1916.50	ELIANE SOUZA DOS SANTOS DALTRO;
GM (RM2-T)	19.0830.84	MARCO THADEU GASPAR DIAS;
GM (RM2-T)	19.0841.37	LEANDRO PINTO PEREIRA;
GM (RM2-T)	19.0832.20	MARCELO MOREIRA MELO;
GM (RM2-S)	13.0666.41	FRANCISCA VERONICA MADEIRA MELO RODRIGUES;
GM (RM2-CD)	19.0828.51	ANDREIA MIRANDA SPYRIDES;
GM (RM2-T)	19.0836.88	LUANA BARROS FREIRE;
GM (RM2-EN)	19.0827.03	OCIMAR JOSÉ CASTRO JUNIOR;
GM (RM2-T)	19.0830.76	NÍNIVE ALVES VIERIA DE MATOS;
GM (RM2-T)	19.0835.21	ELAINE CRISTINA DE SOUSA SANTANA;
GM (RM2-T)	86.3045.18	SUELLEM DE MOURA ANTUNES AZEVEDO;
GM (RM2-T)	19.0840.99	LEONARDO ROSA CAMPOS;
GM (RM2-T)	19.0825.92	TIAGO BINATO NEVES;
GM (RM2-S)	19.0827.89	FERNANDA CONCEIÇÃO SILVA DO AMORIM;

GM (RM2-T)	19.0840.05	ANA BEATRIZ AZEVEDO RAMOS;
GM (RM2-T)	19.0839.04	MARCELO HENRIQUE VINCI BORGES;
GM (RM2-Md)	18.1800.19	MARIANA CERQUEIRA MACIEL VIANNA;
GM (RM2-S)	19.0828.78	GISELLE SANT´ ANNA LYRA;
GM (RM2-EN)	19.0837.00	CESAR NOBREGA RODRIGUES;
GM (RM2-T)	19.0839.98	DANIELA MENDES ZETTERMANN;
GM (RM2-T)	86.2983.13	BRUNA ALVAREZ LEMOS DO CARMO;
GM (RM2-T)	19.0828.60	FERNANDA SILVA LINHARES;
GM (RM2-T)	09.1294.13	ÉRICA BARREIROS PACHECO SANTOS DO NASCIMENTO;
GM (RM2-S)	19.0830.25	CECILIA DO NASCIMENTO LOPES;
GM (RM2-T)	86.1241.45	VILSON FERNANDES DE SOUZA;
GM (RM2-S)	06.0650.23	LÉIA PACHECO DA COSTA DA SILVA;
GM (RM2-T)	19.0876.83	RODRIGO SAINT-CLAIR FREITAS DA CUNHA;
GM (RM2-T)	19.0835.81	GUSTAVO PALMARES GOMES DA COSTA;
GM (RM2-T)	19.0824.87	THALYTA PERES DOS REIS;
GM (RM2-T)	19.0832.62	PRISCILA SOUSA DOS SANTOS MIRANDA SOARES;
GM (RM2-T)	19.0826.81	TIAGO OLIVEIRA COUTO;
GM (RM2-T)	19.0832.11	MONALISA PIMENTEL SOUZA DE FARIAS;
GM (RM2-T)	19.0836.02	HENRIQUE SAUERBRONN ANDRADE PEREIRA;
GM (RM2-S)	19.0828.94	KALINCA VITÓRIA CARDOSO CUSIELO;
GM (RM2-T)	05.1350.28	KEILLA CIBELLE SANTOS DO NASCIMENTO PEREIRA;
GM (RM2-T)	19.0877.81	RONÁLIA PAULINO LESSA;
GM (RM2-EN)	19.0825.17	VANESSA SOUZA REBOUÇAS;
GM (RM2-T)	19.0876.91	FABRICIO CARLOS DE OLIVEIRA FAGUNDES;
GM (RM2-T)	19.0825.68	YASMIN TAYNA ALVES DE GONZALEZ;
GM (RM2-T)	19.0832.54	OTAVIO RODRIGUES DA SILVA NUNES;
GM (RM2-T)	19.0837.77	ALEX ALBERT SOUZA DE CARVALHO;
GM (RM2-S)	19.0822.31	RAPHILLA MARQUES RANGEL;
GM (RM2-T)	19.0832.71	LILIANE DOS SANTOS TRINDADE DETTOGNI; e
GM (RM2-T)	19.0826.22	RENATA DE ARAUJO PEREIRA ANDRADE.

II – A partir de 12DEZ2019:

GM (RM2-EN)	19.0839.39	CAMILA MELO DE OLIVEIRA;

GM (RM2-EN)	19.0839.55	SUELI PADRONI DE SOUZA CHAGAS; e
GM (RM2-EN)	18.1801.75	ANDRÉ LUIZ MARCELINO TORRES.

III – A partir de 14DEZ2019:

GM (RM2-S)	19.0878.02	ANTONIO LEONAN DE SOUZA BEZERRA.

IV – A partir de 16DEZ2019:

GM (RM2-T)	19.0876.41	RAFAELA DA SILVA MATILDES;
GM (RM2-T)	19.0876.16	SUÊRDA MARIA PAIVA DE SOUSA;
GM (RM2-S)	19.0876.32	MARCELA SOUZA CUNHA; e
GM (RM2-T)	19.0877.05	BRUNNA HERDY MAGALHÃES DA SILVEIRA.

Art. 2º Esta portaria entra em vigor na presente data.

FLÁVIO AUGUSTO VIANA ROCHA
Vice-Almirante
Comandante
THIAGO DOS SANTOS GUIMARÃES
Capitão-Tenente
Assistente
AUTENTICADO DIGITALMENTE

Distribuição:
AMRJ, BACS, BAeNSPA, BAMRJ, BFNIF, BFNIG, BFNRM, BHMN, BNRJ, BtlNav, BtlOpEspFuzNav, CAAML, CADIM, CASNAV, CASOP, CCCPM, CCIM, CCIMAR, CCSM-RIO, CDDCFN, CDM, CEFAN, CeIMSPA, CGCFN, CHM, CIAA, CIAAN, CIAGA, CIAMA, CIAMPA, CIANB, CiaPol, CIASC, CIAW, CMAM, CMASM, CMATFN, CMM, CMN, CMOpM, CMS, CN, COGESN, ComDivAnf, ComemCh, ComForAerNav, ComForS, ComGptPatNavSE, ComOpNav, COMRJ, CPES, CPesFN, CPN, CPM, CPRJ, CTecCFN, CTIM, CTMRJ, DAbM, DAdM, DAerM, DASM, DCTIM, DEN, DEnsM, DepCMRJ, DepFMRJ, DepSIMRJ, DFM, DGDNTM, DGePM, DGMM, DGN, DGOM, DGPM, DHN, DIM, DOCM, DPC, DPHDM, DPMM, DSAM, DSM, EAMES, EGN, EMA-RIO, EN, ESGAM, EsqdHU-2, EsqdVF-1, GptFNRJ, HCM, HNMD, IEAPM, IPqM, LFM, OCM, PAPEM, PEM, PM, PNCG, PNN, PNNSG, PNSPA, SASM, SVPM, SNNF, SSPM, TM, UISM, UMEM, UMEsq, DN-10, DN-12, DN-50, DN-51, DN-60, DN-61, DN-61.3, DN-65 e Aquivo.

BRAZILIAN NAVY

COMMAND OF THE 1ST NAVAL DISTRICT

61.3/083.3.01

ORDINANCE No. 198/Com1stND, DATED MARCH 9, 2020

Discharge from the Active Service of the Navy (SAM) RM2 Officers, "ex officio," for service convenience.

The COMMANDER OF THE 1ST NAVAL DISTRICT, in the exercise of the authority conferred upon him by item d of subitem II of § 1 of Art. 48 of Decree No. 4,780, dated July 15, 2003, and in accordance with the provisions of item b of § 3 of subitem II, and § 4 of Art. 121 of Law No. 6,880, dated December 9, 1980, combined with items b and e of subitem 10.6.2 of DGPM-308 (4th Revision), resolves:

Art. 1. To discharge from the SAM, "ex officio," for service convenience, and include in the Unremunerated Reserve, 2nd Lieutenant (RM2-Md) 19.0830.17 HANNA CAROLINA CAMPOS FERREIRA, effective December 18, 2019, for assuming a permanent public office or employment, due to passing the public examination for the position of Federal Agricultural Tax Auditor. She is not entitled to severance pay for having incurred in item 21.1.3 of SGM-302 (5th Revision).

Art. 2. This Ordinance shall enter into force on the date hereof, with administrative effects retroactive to December 18, 2019.

ARTHUR FERNANDO BETTEGA CORRÊA
Vice Admiral
Commander

THIAGO DOS SANTOS GUIMARÃES
Lieutenant Commander
Assistant

DIGITALLY AUTHENTICATED

Distribution:
CPesFN, CTecCFN, DGPM, DPMM, DN-60, DN-61, DN-61.3 and File.

62002.001946/2020-82

Translator's note:
RM2-Md - Second-Class Navy Reserve Medical Officer
DGPM - General Directorate of Navy Personnel Regulations
SGM - Secretariat-General of the Navy

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 18, 2026

MARINHA DO BRASIL

COMANDO DO 1º DISTRITO NAVAL

61.3/083.3.01

PORTARIA Nº 198/Com1ºDN, DE 9 DE MARÇO DE 2020.

Licencia do Serviço Ativo da Marinha (SAM) Oficiais RM2, "*ex officio*", por conveniência do serviço.

O COMANDANTE DO 1º DISTRITO NAVAL, no uso da atribuição que lhe confere a alínea d do inciso II do § 1º do art. 48 do Decreto nº 4.780, de 15 de julho de 2003, e de acordo com o disposto na alínea b do § 3º do inciso II, e § 4º do art. 121 da Lei nº 6.880, de 9 de dezembro de 1980, combinado com as alíneas b e e do inciso 10.6.2 da DGPM-308 (4ª Revisão), resolve:

Art. 1º Licenciar do SAM, "*ex officio*", por conveniência do serviço, e incluir na Reserva Não Remunerada a 2ºTen (RM2-Md) 19.0830.17 HANNA CAROLINA CAMPOS FERREIRA, a partir de 18DEZ2019, por tomar posse em cargo ou emprego público permanente, em razão da aprovação em concurso público para o Cargo de Auditor Fiscal Federal Agropecuário. Não faz jus à compensação pecuniária por ter incidido no inciso 21.1.3 da SGM-302 (5ª Revisão).

Art. 2º Esta Portaria entra em vigor na presente data, com efeitos administrativos retroativos a 18DEZ2019.

ARTHUR FERNANDO BETTEGA CORRÊA
Vice-Almirante
Comandante
THIAGO DOS SANTOS GUIMARÃES
Capitão de Corveta
Assistente
AUTENTICADO DIGITALMENTE

Distribuição:
CPesFN, CTecCFN, DGPM, DPMM, DN-60, DN-61, DN-61.3 e Arquivo.

62002.001946/2020-82

BRAZILIAN NAVY
TECHNOLOGICAL CENTER OF THE BRAZILIAN MARINE CORPS
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Rank: SECOND LIEUTENANT
Name: HANNA CAROLINA CAMPOS FERREIRA

Closing: Extraordinary
Period: 01/01/20 to 04/03/20

1/2 - EXCLUSION FROM THE ACTIVE SERVICE (Insertion)

Document Type: ORDINANCE Number: 198 Document Date: 03/09/20

Document OM: COM1DN Bulletin: 07-2020 Event Date: 12/18/19

Type of Act: Ex officio discharge for service convenience

Reason: Discharge for service convenience

2/2 - DISCHARGE (Insertion)

Document Type: SERVICE ORDER Number: 075

Document Date: 04/03/20 Document OM: CTECCFN Bulletin:

Event Date: 12/18/19 Discharging OM: 1096

The service member was not notified.

HUDSON COELHO VITAL
FIRST LIEUTENANT

BRAZILIAN NAVY
TECHNOLOGICAL CENTER OF THE BRAZILIAN MARINE CORPS
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Rank: SECOND LIEUTENANT
Name: HANNA CAROLINA CAMPOS FERREIRA

Closing: Semiannual
Period: 12/13/19 to 12/31/19

1/2 - PROMOTION (Insertion)

Document Type: ORDINANCE Number: 1215 Document Date: 12/09/19

Document OM: COM1DN Bulletin: 01-2020 Event Date: 12/10/19

Rank/Grade: SECOND LIEUTENANT Branch: MD Corps: CORM

Type of Act: PROMOTION Promotion Criterion: SENIORITY

2/2 - PRESENTATION (Insertion)

Document Type: MOVEMENT ORDER Number: 459400 Document Date:

Document OM: DPMM Bulletin: Event Date: 12/17/19

Incoming OM: CTECCFN Outgoing OM: DEPSIMRJ

The service member was not notified.

FERNANDA DE LIMA DA SILVA NUNES
FIRST LIEUTENANT

BRAZILIAN NAVY
NAVY QUARTERMASTER SUPPLY DEPOT IN RIO DE JANEIRO
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Rank: SECOND LIEUTENANT
Name: HANNA CAROLINA CAMPOS FERREIRA

Closing: Extraordinary
Period: 09/13/19 to 12/12/19

1/7 - PRESENTATION (Insertion)
Document Type: MOVEMENT ORDER Number: 446448 Document Date:
Document OM: DPMM Bulletin: Event Date: 09/16/19

2/7 - POSITION/OFFICE (Insertion)
Document Type: SERVICE ORDER Number: 156/2019
Document Date: 12/04/19 Document OM: DEPSIMRJ Bulletin:
Event Date: 10/01/19 Type of Act: ASSUMPTION
Sector: PHYSICAL AND CHEMICAL ANALYSIS
Position: DEPARTMENT ASSISTANT

3/7 - ASSIGNMENT (Insertion)
Document Type: MOVEMENT ORDER Number: 459400
Document Date: 11/29/19 Document OM: DPMM Bulletin:
Event Date: 11/29/19 OM: CPESFN

4/7 - OFFICER EVALUATION FORM (Insertion)
Document Type: Number: Document Date:
Document OM: DEPSIMRJ Bulletin: Event Date: 12/10/19
Semester: 2nd semester of 2018

5/7 - OFFICER EVALUATION FORM (Insertion)
Document Type: Number: Document Date:
Document OM: DEPSIMRJ Bulletin: Event Date: 12/11/19
Semester: 2nd semester of 2019

6/7 - POSITION/OFFICE (Insertion)
Document Type: SERVICE ORDER Number: 164
Document Date: 12/12/19 Document OM: DEPSIMRJ Bulletin:
Event Date: 12/12/19 Type of Act: TRANSFER
Sector: PHYSICAL AND CHEMICAL ANALYSIS
Position: DEPARTMENT ASSISTANT

7/7 - DISCHARGE (Insertion)
Document Type: MOVEMENT ORDER Number: 459400 Document Date:
Document OM: DPMM Bulletin: Event Date: 12/12/19
Outgoing OM: DEPSIMRJ

The service member was not notified.

VICENTE CAMPOS CUSTODIO
COMMANDER

BRAZILIAN NAVY
ADMIRAL WANDENKOLK INSTRUCTION CENTER
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Rank: MIDSHIPMAN
Name: HANNA CAROLINA CAMPOS FERREIRA

Closing: Extraordinary
Period: 07/01/19 to 09/12/19

1/3 - OATH TO THE FLAG (Insertion)

Document Type: REGULATION Number: N/A Document Date: 09/05/19

Document OM: CIAW Bulletin: Event Date: 09/05/19

Additional Information: On SEP/05/2019, she took the solemn oath to the National Flag, in accordance with the Regulation on Military Salutes, Honors, Signs of Respect and Ceremonial Procedures of the Armed Forces.

2/3 - ASSIGNMENT (Insertion)

Document Type: MOVEMENT ORDER Number: 446448

Document Date: 09/11/19 Document OM: DPMM Bulletin:

Event Date: 09/11/19 OM: DABM

3/3 - DISCHARGE (Insertion)

Document Type: MOVEMENT ORDER Number: 446448 Document Date:

Document OM: DPMM Bulletin: Event Date: 09/12/19

Outgoing OM: CIAW

The service member was not notified.

VICENTE CAMPOS CUSTODIO
COMMANDER

BRAZILIAN NAVY
ADMIRAL WANDENKOLK INSTRUCTION CENTER
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Rank: MIDSHIPMAN
Name: HANNA CAROLINA CAMPOS FERREIRA

Closing: Semiannual
Period: 12/13/19 to 12/31/19

1/4 - HEALTH (Insertion)

Document Type: MESSAGE Number: R191916Z Document Date: 07/19/19

Document OM: COM1DN Bulletin: Event Date: 05/02/19

Medical Report: FIT FOR PERIODIC MONITORING Purpose: ENTRY INTO THE SMV

2/4 - INCORPORATION (Insertion)

Document Type: ORDINANCE Number: 677 Document Date: 07/04/19

Document OM: CIAW Bulletin: 15-2019 Event Date: 06/10/19

Rank/Grade: MIDSHIPMAN Branch: MD Corps: CORM

Promotion Criterion: NOT REQUIRED

3/4 - COURSE (Insertion)

Document Type: ORDINANCE Number: 677 Document Date: 07/04/19

Document OM: COM1DN Bulletin: 15-2019 Event Date: 06/10/19

Course: DEGREE IN VETERINARY MEDICINE – SMALL ANIMALS

Course Event: COMPLETION Year/Class: 2019 Class Number: 1

Ranking: 0 Average: -,000

4/4 - SECURITY CLEARANCE (Insertion)

Document Type: SERVICE ORDER Number: 299

Document Date: 08/16/19 Document OM: CIAW Bulletin:

Event Date: 06/17/19

Additional Information: Pursuant to item 5.6.2 of EMA-353-Vol. II (1st Revision), effective 06.17.2019, she was granted a security clearance in the RESTRICTED category, with access restricted to the activities of a Volunteer Military Service (SMV) Student, Class 1/2019, as a member of the 2nd Class Reserve of the Navy.

The service member was not notified.

VICENTE CAMPOS CUSTODIO
COMMANDER

Translator's note:
CFN - Marine Corps
NIP - Personnel Identification Number
CQAES - Qualification Board for Teaching and Health Assistants
CORM MD - Navy Medical Reserve Officer Board
SAM - Active Naval Service
OM - Military Organization
CTECCFN - Marine Corps Technological Center
COM1DN - 1st Naval District Command
DPMM - Directorate of Naval Military Personnel
DEPSIMRJ - Navy Quartermaster Supply Depot in Rio de Janeiro
CPESFN - Marine Corps Personnel Command.
CIAW - Almirante Wandenkolk Instruction Center
DABM - Directorate of Naval Social Assistance

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 18, 2026

MARINHA DO BRASIL
CENTRO TECNOLÓGICO DO CFN
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Grau Hierárquico: SEGUNDO-TENENTE
Nome: HANNA CAROLINA CAMPOS FERREIRA

Fechamento: Extraordinário
Período: 01/01/20 a 03/04/20

1/2 - EXCLUSÃO DO SAM (Inserção)
Tipo do Documento:PORTARIA Número:198 Data do Documento:09/03/20
OM do Documento:COM1DN Boletim:07-2020 Data do Evento:18/12/19
Tipo do Ato:Lic. ex officio por conveniência do serviço
Motivo:Licenciamento por conveniência do serviço

2/2 - DESLIGAMENTO (Inserção)
Tipo do Documento:ORDEM DE SERVIÇO Número:075
Data do Documento:03/04/20 OM do Documento:CTECCFN Boletim:
Data do Evento:18/12/19 OM de Desligamento:1096

O Militar não tomou conhecimento

HUDSON COELHO VITAL
PRIMEIRO-TENENTE

MARINHA DO BRASIL
CENTRO TECNOLÓGICO DO CFN
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Grau Hierárquico: SEGUNDO-TENENTE
Nome: HANNA CAROLINA CAMPOS FERREIRA

Fechamento: Semestral
Período: 13/12/19 a 31/12/19

1/2 - PROMOÇÃO (Inserção)
Tipo do Documento:PORTARIA Número:1215 Data do Documento:09/12/19
OM do Documento:COM1DN Boletim:01-2020 Data do Evento:10/12/19
Posto/Graduação:SEGUNDO-TENENTE Quadro:MD Corpo:CORM
Tipo do Ato:PROMOÇÃO Critério da Promoção:ANTIGUIDADE

2/2 - APRESENTAÇÃO (Inserção)
Tipo do Documento:ORDEM DE MOVIMENTO Número:459400 Data do Documento:
OM do Documento:DPMM Boletim: Data do Evento:17/12/19
OM de Entrada: CTECCFN OM de Saida: DEPSIMRJ

O Militar não tomou conhecimento

FERNANDA DE LIMA DA SILVA NUNES
PRIMEIRO-TENENTE

MARINHA DO BRASIL
DEPÓSITO DE SUPRIMENTOS DE INTENDÊNCIA DA MARINHA NO RIO DE JANEIRO
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Grau Hierárquico: SEGUNDO-TENENTE
Nome: HANNA CAROLINA CAMPOS FERREIRA

Fechamento: Extraordinário
Período: 13/09/19 a 12/12/19

1/7 - APRESENTAÇÃO (Inserção)
Tipo do Documento:ORDEM DE MOVIMENTO Número:446448 Data do Documento:
OM do Documento:DPMM Boletim: Data do Evento:16/09/19

2/7 - FUNÇÃO/CARGO (Inserção)
Tipo do Documento:ORDEM DE SERVIÇO Número:156/2019
Data do Documento:04/12/19 OM do Documento:DEPSIMRJ Boletim:
Data do Evento:01/10/19 Tipo do Ato:ASSUNCAO
Setor:ANÁLISE FÍSICO E QUÍMICA
Função:AJUDANTE DE DEPARTAMENTO

3/7 - DESIGNAÇÃO (Inserção)
Tipo do Documento:ORDEM DE MOVIMENTO Número:459400
Data do Documento:29/11/19 OM do Documento:DPMM Boletim:
Data do Evento:29/11/19 OM:CPESFN

4/7 - FOLHA DE AVALIAÇÃO DE OFICIAIS (Inserção)
Tipo do Documento: Número: Data do Documento:
OM do Documento:DEPSIMRJ Boletim: Data do Evento:10/12/19
Semestre:2º semestre de 2018

5/7 - FOLHA DE AVALIAÇÃO DE OFICIAIS (Inserção)
Tipo do Documento: Número: Data do Documento:
OM do Documento:DEPSIMRJ Boletim: Data do Evento:11/12/19
Semestre:2º semestre de 2019

6/7 - FUNÇÃO/CARGO (Inserção)
Tipo do Documento:ORDEM DE SERVIÇO Número:164
Data do Documento:12/12/19 OM do Documento:DEPSIMRJ Boletim:
Data do Evento:12/12/19 Tipo do Ato:PASSAGEM
Setor:ANÁLISE FÍSICO E QUÍMICA
Função:AJUDANTE DE DEPARTAMENTO

7/7 - DESLIGAMENTO (Inserção)
Tipo do Documento:ORDEM DE MOVIMENTO Número:459400 Data do Documento:
OM do Documento:DPMM Boletim: Data do Evento:12/12/19
OM de Saida:DEPSIMRJ

O Militar não tomou conhecimento

VICENTE CAMPOS CUSTODIO
CAPITÃO DE FRAGATA

MARINHA DO BRASIL
CENTRO DE INSTRUÇÃO ALMIRANTE WANDENKOLK
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Grau Hierárquico: GUARDA-MARINHA
Nome: HANNA CAROLINA CAMPOS FERREIRA

Fechamento: Extraordinário
Período: 01/07/19 a 12/09/19

1/3 - JURAMENTO A BANDEIRA (Inserção)
Tipo do Documento:REGULAMENTO Número:S/N Data do Documento:05/09/19
OM do Documento:CIAW Boletim: Data do Evento:05/09/19
Informação Complementar: A 05SET2019 prestou solene juramento à Bandeira Nacional, de acordo com o Regulamento de Continências, Honras, Sinais de Respeito e Cerimonial Militar das Forças Armadas.

2/3 - DESIGNAÇÃO (Inserção)
Tipo do Documento:ORDEM DE MOVIMENTO Número:446448
Data do Documento:11/09/19 OM do Documento:DPMM Boletim:
Data do Evento:11/09/19 OM:DABM

3/3 - DESLIGAMENTO (Inserção)
Tipo do Documento:ORDEM DE MOVIMENTO Número:446448 Data do Documento:
OM do Documento:DPMM Boletim: Data do Evento:12/09/19
OM de Saida:CIAW

O Militar não tomou conhecimento

VICENTE CAMPOS CUSTODIO
CAPITÃO DE FRAGATA

MARINHA DO BRASIL
CENTRO DE INSTRUÇÃO ALMIRANTE WANDENKOLK
NIP: 19.0830.17 **CQAES:** CORM MD
CPF:
Grau Hierárquico: GUARDA-MARINHA
Nome: HANNA CAROLINA CAMPOS FERREIRA

Fechamento: Semestral
Período: 10/06/19 a 30/06/19

1/4 - SAÚDE (Inserção)
Tipo do Documento:MENSAGEM Número:R191916Z Data do Documento:19/07/19
OM do Documento:COM1DN Boletim: Data do Evento:02/05/19
Laudo:APTO PARA CONTROLE PERIÓDICO Finalidade:INGRESSO NO SMV

2/4 - INCORPORAÇÃO (Inserção)
Tipo do Documento:PORTARIA Número:677 Data do Documento:04/07/19
OM do Documento:CIAW Boletim:15-2019 Data do Evento:10/06/19
Posto/Graduação:GUARDA-MARINHA Quadro:MD Corpo:CORM
Critério da Promoção:NÃO EXIGIDO

3/4 - CURSO (Inserção)
Tipo do Documento:PORTARIA Número:677 Data do Documento:04/07/19
OM do Documento:COM1DN Boletim:15-2019 Data do Evento:10/06/19
Curso:GRADUAÇÃO EM MEDICINA VETERINÁRIA - ANIMAIS DE PEQUENO PORTE
Evento de Curso:CONCLUSÃO Ano Turma:2019 Número da Turma:1
Classificação:0 Média:-,000

4/4 - CREDENCIAL DE SEGURANÇA (Inserção)
Tipo do Documento:ORDEM DE SERVIÇO Número:299
Data do Documento:16/08/19 OM do Documento:CIAW Boletim:
Data do Evento:17/06/19
Informação Complementar: De acordo com o inciso 5.6.2 do EMA-353-Vol. II (1ª Revisão), foi-lhe concedida a partir de17JUN2019, credencial de segurança na categoria de RESERVADO, com acesso restrito às atividades de Aluno do Serviço Militar Voluntário (SMV), Turma 1/2019, na situação de Militar da Reserva de 2ª Classe da Marinha.

O Militar não tomou conhecimento

VICENTE CAMPOS CUSTODIO
CAPITÃO DE FRAGATA

Brazilian Navy

Officer's Commission

The Director of Naval Military Personnel

Hereby certifies that HANNA CAROLINA CAMPOS FERREIRA

is an officer of the Brazilian Navy, holding the rank of Second Lieutenant, 2nd Class Reserve of the Navy, Medical Corps, effective December 10, 2019, having been called up and incorporated for Military Service, pursuant to Ordinance No. 1,215, dated December 9, 2019, issued by the Commander of the 1st Naval District and published in the Federal Official Gazette on January 15, 2020. Therefore, by delegation of His Excellency the President of the Republic, pursuant to Decree No. 2,144, dated February 7, 1997, and by subdelegation of authority from the Commander of the Navy, pursuant to Ordinance No. 99, dated April 5, 2021, or by subdelegation of authority from the Director-General of Naval Military Personnel, pursuant to Ordinance No. 31, dated March 7, 2021, this confirmatory Officer's Commission is hereby issued, confirming her entitlement to the benefits, prerogatives, and duties inherent to the rank, pursuant to law.

201st Year of Independence, 134th Year of the Republic

Rio de Janeiro, RJ, January 18, 2022

HENRIQUE RENATO BAPTISTA DE SOUZA
Vice Admiral
Director

APOSTILLE No. 1 - Pursuant to Ordinance No. 198, dated March 9, 2020 (Federal Official Gazette, May 22, 2020), the COMMANDER OF THE 1ST NAVAL DISTRICT resolved to discharge, effective December 18, 2019, the Officer to whom this Officer's Commission refers from Active Duty in the Brazilian Navy and place her in the Non-Paid Reserve.
DPMM, February 23, 2022.

DÉBORA DUARTE DE CAMPOS
Lieutenant Commander (T)
Head of the Officer Promotions Division

HENRIQUE RENATO BAPTISTA DE SOUZA
Vice Admiral
Director

Drawn up by

LUCIANO TEIXEIRA LEITE
Captain (1)
Acting Deputy Director

DÉBORA DUARTE DE CAMPOS CRUZ
DÉBORA DUARTE DE CAMPOS
Lieutenant Commander (T)
Head of the Officer Promotions Division

drawn up by
Head of the Division

Registered in the Register Book of Officers' Commissions No. 75, page 928, for Junior Officers, on January 18, 2022.

Section Chief
PEDRO HENRIQUE PEIXOTO GONÇALVES
Corporal (ES)
Assistant, Officer's Commission Section

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 18, 2026

Marinha do Brasil

Carta Patente de Oficial

O Diretor do Pessoal Militar da Marinha

Faz saber que HANNA CAROLINA CAMPOS FERREIRA

é Oficial da Marinha, do posto de Segundo-Tenente da Reserva de 2ª Classe da Marinha do Quadro de Médicos a partir de 10 de dezembro de 2019 na situação de convocado(a) e incorporado(a) para prestar o Serviço Militar, em virtude da Portaria nº 1.215, de 09 de dezembro de 2019 do Comandante do 1º Distrito Naval publicada no "Diário Oficial da União" de 15 de janeiro de 2020, e por isso lhe confere, por delegação do Excelentíssimo Senhor Presidente da República, de acordo com o Decreto nº 2.144, de 07 de fevereiro de 1997, por subdelegação de competência do Comandante da Marinha, de acordo com a Portaria nº 99, de 05 de abril de 2021 e por subdelegação de competência do Diretor Geral do Pessoal da Marinha, de acordo com a Portaria nº 31, de 07 de maio de 2021, a presente Carta Patente confirmatória do gozo das vantagens, prerrogativas e deveres inerentes ao posto, nos termos da lei.

201º da Independência 134º da República.

Rio de Janeiro, RJ, 18 de janeiro de 2022

HENRIQUE RENATO BAPTISTA DE SOUZA
Vice-Almirante
Diretor

CFB

APOSTILA Nº 1 - Pela Portaria nº 198, de 09MAR2020 (D.O.U de 22MAI2020), o COMANDANTE DO 1º DISTRITO NAVAL resolveu licenciar, a partir de 18DEZ2019, a Oficial de que trata a presente Carta Patente do Serviço Ativo da Marinha e incluí-la na Reserva Não Remunerada.

DPMM, em 23 de fevereiro de 2022.

DÉBORA DUARTE DE CAMPOS CRUZ
Capitão de Corveta (T)
Enc. da Divisão de Promoções de Oficiais

HENRIQUE RENATO BAPTISTA DE SOUZA
Vice-Almirante
Diretor

Lavrou

LUCIANO TEIXEIRA LEITE
Capitão de Mar e Guerra (T)
Vice-Diretor Interino

DÉBORA DUARTE DE CAMPOS CRUZ
Capitão de Corveta (T)
Encarregada da Divisão de Promoções de Oficiais

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Encarregada da Divisão

Registrada no Livro de Registro de Cartas Patentes nº 75, fls. 928 de Oficiais Subalternos, em 18 de janeiro de 2022.

Chefe da Seção
PEDRO HENRIQUE PEIXOTO GONÇALVES
Cabo (ES)
Auxiliar da Seção de Cartas Patentes

Ministry of Education - MEC
Coordination for the Improvement of Higher Education Personnel - CAPES
Setor Norte Bancário, Block 2, Building L, Lot 06
ZIP Code 70040-020 - Brasília, DF

Dear Sir/Madam,
HANNA CAROLINA CAMPOS FERREIRA
Rua Mata Machado - 113
Centro
Januária - Minas Gerais
Brazil
39.480-000

December 15, 2017

Process: PDSE 99999.002639/2014-09

FORMER FELLOW DECLARATION

Dear Former Fellow,

We hereby certify, for all due purposes, that the individual concerned was a CAPES fellow and carried out a DOCTORAL EXCHANGE PROGRAM abroad, as detailed below:

FELLOWSHIP PERIOD: 09/2014 to 07/2015

HOST INSTITUTION: UNIVERSITY OF MINNESOTA, SAINT PAUL

COUNTRY: United States

Sincerely,

-----// signature//-----
Adi Balbinot Junior
General Coordinator for Monitoring and Evaluation of Results
This signature does not require notarization, as this is a public document
- Article 19, Item II - Constitution of the Federative Republic of Brazil

To verify the authenticity of this document, please visit ***http://validadocumentos.capes.gov.br/*** *and enter the following code:****280lM8Etc21U=***

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: April 6, 2026.**

Ministério da Educação - MEC
Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES
Setor Bancário Norte, Quadra 2, Bloco L, Lote 06
CEP 70040-020 - Brasília, DF

Prezado (a) Senhor (a),
HANNA CAROLINA CAMPOS FERREIRA
Rua Mata Machado - 113
Centro
Januária - Minas Gerais
Brasil
39.480-000

15 de Dezembro de 2017

Processo: PDSE 99999.002639/2014-09

DECLARAÇÃO DE EX-BOLSISTA

Prezado(a) Ex-bolsista,

Declaramos, para os devidos fins, que o(a) interessado(a) foi bolsista da Capes e realizou DOUTORADO SANDUÍCHE no exterior, conforme os dados abaixo:

PERÍODO DA BOLSA: 09/2014 a 07/2015

INSTITUIÇÃO DE ENSINO: UNIVERSITY OF MINNESOTA, SAINT PAUL

PAÍS: Estados Unidos

Atenciosamente,

Adi Balbinot Junior
Coordenador (a) Geral de Acompanhamento e Monitoramento de Resultados
Esta assinatura independe de reconhecimento de firma, por se tratar de documento público - Art. 19, Inciso II - Constituição Federal do Brasil

A fim de validar a autenticação deste documento, por favor acesse ***http://validadocumentos.capes.gov.br/*** *e informe o seguinte código:****280lM8Etc21U=***

FEDERAL UNIVERSITY OF VIÇOSA
VICE-PRESIDENT'S OFFICE FOR RESEARCH AND GRADUATE STUDIES

CERTIFICATE

We hereby certify, for all due purposes, that **HANNA CAROLINA CAMPOS FERREIRA**, enrollment No. 54990, was a Scientific Initiation Research Fellow from March/2007 to February/2008, in the Institutional Scientific Initiation Fellowship Program, Cooperation FAPEMIG/UFV, with a weekly workload of 20 (twenty) hours, under the supervision of Professor Paulo Sérgio de Arruda Pinto.

Viçosa, March 13, 2008.

-----// signature //-----
Prof. Aristéa Alves Azevedo
PIBIC/UFV Coordinator

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: September 25, 2026.**

UNIVERSIDADE FEDERAL DE VIÇOSA
PRÓ-REITORIA DE PESQUISA E PÓS-GRADUAÇÃO

CERTIFICADO

Certificamos, para os devidos fins, que **HANNA CAROLINA CAMPOS FERREIRA,** matrícula nº 54990, foi bolsista de iniciação científica, no período de março/2007 a fevereiro/2008, no Programa Institucional de Bolsas de Iniciação Científica, Convênio FAPEMIG/UFV, com carga horária semanal de 20 (vinte) horas, tendo como orientador o Professor Paulo Sérgio de Arruda Pinto.

Viçosa, 13 de março de 2008.

Profª. Aristéa Alves Azevedo
Coordenadora do PIBIC/UFV

ITALICA

ITALICA - Serviços de Língua e Cultura Italiana LTDA - ME (Microenterprise) / Rua Daniel Silveiras, 170 - Jd. Olga, Atibaia - São Paulo - Brazil
CNPJ: 27.525.875/0001-63

CERTIFICATE OF COMPLETION

WE HEREBY CERTIFY THAT

Hanna Carolina Campos Ferreira

COMPLETED IN JUNE 2020, THE ITALIAN LANGUAGE AND CULTURE COURSE L'ITALIANO ESSENZIALE, WITH A TOTAL WORKLOAD OF 84 HOURS.

DARIUS LEVA EMRANI

ACADEMIC DIRECTOR OF ITALICA
comunidadeitalica@gmail.com

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 9, 2026.

ITALICA

ITALICA – Serviços de língua e cultura italiana LTDA – ME / R. Daniel Silveiras, 170 – Jd Olga, Atibaia – SP – Brasil
CNPJ: 27.525.875/0001-63

CERTIFICADO DE CONCLUSÃO

CERTIFICAMOS QUE

Hanna Carolina Campos Ferreira

CONCLUIU, EM JUNHO DE 2020 O CURSO DE LÍNGUA E CULTURA ITALIANAS L'ITALIANO ESSENZIALE, CUJA CARGA HORÁRIA É DE 84 HORAS.

DARIUS LEVA EMRANI

DIRETOR DIDÁTICO DE ITALICA
comunidadeitalica@gmail.com



Certificate

I hereby certify that:

Hanna Carolina Campos Ferreira

Has exemplarily completed the **Junior Silveira English Course**
on **03/11/2019**, with a total workload of 100 hours.

Junior Silveira
English Teacher

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 21, 2026.



Certificado

Certifico que:

Hanna Carolina Campos Ferreira

Concluiu de maneira exemplar o **Curso de Inglês Junior Silveira**
em **11/03/2019,** totalizando uma carga horária de 100 horas.

Junior Silveira
English Teacher

May 11, 2015

Minnesota English Language Program

Final Report

Student: Hanna Ferreira

UMN ID: 5118063

Term: Spring 2015 Intensive English Program (IEP)

Dates of Enrollment: January 20 to May 12, 2015

Level: **PT Elective Only**

Course	Classroom Hours hours/week	Attendance %	Course Grade %	Final Grade %
ESL 941: Research Writing for the American University	4	100	97	97
End of Term Assessment (ETA)	**Listening Subscore**	**Grammar Subscore**	**Reading Subscore**	**ETA Total** out of 677
	51	50	54	517
Final Level Recommendations for Summer/Fall 2015				

This is not an official transcript. An official transcript is a certified document signed by the University registrar which indicates the final grade (S/N) earned for each enrolled course. The student may request an official transcript by visiting http://onestop.umn.edu/grades_and_transcripts/official_transcripts/index.html.

Minnesota English Language Program
University of Minnesota
cceesl@umn.edu
612-624-1503

Minnesota English Language Program
UNIVERSITY OF MINNESOTA

Certificate of Attendance

Signature

Michael E. Anderson, Program Director

Date

May 12th, 2015

This certifies that

Hanna Ferreira

had 90% attendance or higher in all of the following classes:

ESL 941

in the Intensive English Program at the University of Minnesota during the Spring 2015 semester.

CERTIFICATE

Hanna Carolina Campos Ferreira,

having successfully completed the PLI - Reading in English

(Instrumental English), is hereby awarded this Certificate

Viçosa, July, 6, 2012

Director Number One Member

#1 NUMBER ONE
COMPLETE ENGLISH

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 21, 2026.

CERTIFICATE

Hanna Carolina Campos Ferreira,

having successfully completed the PLI – Para Ler em Inglês

(Inglês Instrumental), is hereby awarded this Certificate

Viçosa, July, 6, 2012

Director Number One Member

#1 NUMBER ONE
INGLÊS COMPLETO

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The Institution of Mnemonics for English

The Trustees of the Institution by virtue of the authority vested in them and on the recommendation of the staff of the Uptime Consultants - VIS Office have conferred the

Certificate of Conclusion

on

Hanna Carolina Campos Ferreira

Reaching an advanced level in English language

Given in Viçosa, Minas Gerais, on the Tenth of February, in the year two thousand and fourteen.

Chairman of the Institution

Pedagogic Director

UPTIME
COMUNICAÇÃO EM INGLÊS

Fernanda L.A. Barbosa
Learning Specialist

FEDERAL RURAL UNIVERSITY OF RIO DE JANEIRO
ADMINISTRATIVE AFFAIRS OFFICE
PERSONNEL DEPARTMENT
SELECTION AND DEVELOPMENT DIVISION

CERTIFICATE

We hereby certify that ***Hanna Carolina Campos Ferreira*** *has completed the Intermediate Module of the English Course, held from 09/03/2003 to 10/05/2004, with a workload of 130 hours.*

Federal Rural University of Rio de Janeiro (UFRRJ), November 29, 2004

Délcio dos Santos Canevelo
Director of the Personnel Department

Ângela Ferreira Pace
Director of the Selection
and Development Division (DSA)

220295

CERTIFICATE

Yázigi Internexus hereby awards this certificate

to **HANNA CAROLINA CAMPOS FERREIRA**

for the results achieved in the **English Program - Basic**

Workload: **105 Instruction Hours**

Completion Date: **12/21/2001**

São Paulo, **10/26/2002**

SCHOOL DIRECTOR | PRESIDENT

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I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 21, 2026.

UNIVERSIDADE FEDERAL RURAL DO RIO DE JANEIRO
DECANATO DE ASSUNTOS ADMINISTRATIVOS
DEPARTAMENTO DE PESSOAL
DIVISÃO DE SELEÇÃO E APERFEIÇOAMENTO

CERTIFICADO

Certificamos que ***Hanna Carolina Campos Ferreira,*** *concluiu o Módulo Intermediário do Curso Inglês, realizado no período de 03/09/2003 05/10/2004, conferindo carga horária de 130 horas.*

UFRRJ, 29 de novembro de 2004

Délcio dos Santos Canevelo
Diretor do Deptº de Pessoal

Ângela Ferreira Pace
Diretora da DSA

220295

CERTIFICADO

O Yázigi Internexus confere o presente certificado

a **HANNA CAROLINA CAMPOS FERREIRA**

pelos resultados obtidos no **Programa de Inglês - Básico**

Carga Horária: **105 Horas de Instrução**

Data de Conclusão: **21/12/2001**

São Paulo, **26/10/2002**

João Bosco Medeiros. | Itamar Heráclio Góis Silva

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In vitro inhibition of canine distemper virus by flavonoids and phenolic acids: Implications of structural differences for antiviral design

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ABSTRACT

Infection caused by canine distemper virus (CDV) is a highly contagious disease with high incidence and lethality in the canine population. Antiviral activity of flavonoids quercetin, morin, rutin and hesperidin, and phenolic cinnamic, trans-cinnamic and ferulic acids were evaluated in vitro against the CDV using the time of addition assay to determine which step of the viral replicative cycle was affected. All flavonoids displayed great viral inhibition when they were added at the times 0 (adsorption) and 1 h (penetration) of the viral replicative cycle. Both quercetin and hesperidin presented antiviral activity at the time 2 h (intracellular). In the other hand, cinnamic acid showed antiviral activity at the times 0 and 2 h while trans-cinnamic acid showed antiviral effect at the times −1 h (pre-treatment) and 0 h. Ferulic acid inhibited CDV replicative cycle at the times 0 and 1 h. Our study revealed promising candidates to be considered in the treatment of CDV. Structural differences among compounds and correlation to their antiviral activity were also explored. Our analysis suggest that these compounds could be useful in order to design new antiviral drugs against CDV as well as other viruses of great meaning in veterinary medicine.
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1. Introduction

Canine distemper is caused by a single stranded RNA virus of the genus Morbillivirus, family Paramyxoviridae. In dogs, canine distemper virus (CDV) can result in gastrointestinal and/or respiratory clinical signs, often accompanied by neurological signs (Martella et al., 2008). Although there are commercial vaccines against canine distemper, the disease remains one with the highest incidence and lethality in dogs (Rodeheffer et al., 2007). The virus has been reported in wild animals (ferrets, wild dogs, foxes, coyotes, hyenas, lions, tigers, leopards, seals, sea lions and dolphins) (Appel et al., 1994; Kennedy, 1998; Murphy et al., 1999; Moro et al., 2004). The domestic dog is most commonly infected, and although the disease has been also found in big cats, the domestic cat is not susceptible (Martella et al., 2008).

Currently, therapeutic studies for CDV have employed either synthetic inhibitors that interfere with morbillivirus replication (Scagliarini et al., 2006; White et al., 2007; Elia et al., 2008; Yoon et al., 2008; Dal Pozzo et al., 2010) or natural compounds that display anti-CDV activity in vitro at early and/or late stages of viral replication (Gallina et al., 2011; Bagla et al., 2012).

Phenolic compounds are plant secondary metabolites widely distributed among plant species and are targets of great scientific interest due to their pharmacological properties and therapeutic value (Schnitzler et al., 2008). The compounds have antioxidant, anti-allergic, anti-inflammatory, anti-mutagenic, anticarcinogenic and antibacterial effects (Shon et al., 2004; Nafisi et al., 2008; Orhan et al., 2010; Shimosaki et al., 2011). Flavonoids and phenolic acids, two major phenolic groups, have been reported to inhibit the replication of many viruses (Rees et al., 2008; Saha et al., 2009; Kim et al., 2010; Gravina et al., 2011).

The antiviral activity of the flavonoid quercetin (3′,4,3,5,7-pentahydroxil flavonol) has been reported for some viruses, including adenovirus 3 (AdV-3), herpes simplex virus (HSV) and influenza virus (Choi et al., 2009; Thapa et al., 2011). Morin (2′,4′,3,5,7-pentahydroxil flavonol), another flavonoid, had antiviral action against equine herpesvirus 1 (EHV-1) (Gravina et al., 2011). Antiviral activity of glycosidic flavonoids was shown by rutin (quercetin-3-O-rutinoside) against HSV, dengue virus 2 (DENV-2) and human immunodeficiency virus (HIV) (Tao et al., 2007; Zandi et al., 2011), and hesperidin against influenza virus (Saha et al., 2009).

Both cinnamic acid and its trans isomers are phenolic acids or intermediate compounds in the synthesis routes of flavonoids

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(Yadav et al., 2008). Phenolic acids have been reported to have antiviral effects against DENV, EHV-1 and HIV (Ichimura et al., 1999; Rees et al., 2008; Gravina et al., 2011).

Some studies correlate changes in the structure of flavonoids with changes in their biological mechanisms. According to Kim et al. (2010), isoquercetin, a glycosylated form of quercetin, showed higher inhibitory activity against influenza virus in vitro and in vivo than that reported for quercetin. Another study by Thapa et al. (2011) investigated the synthesis and antiviral activity of various derivatives of quercetin with hydroxyl substitutions at C-3, C-3′ and C-5; synthetic analogs of quercetin demonstrated therapeutic index for influenza virus greater than that of quercetin.

Given the high impact of canine distemper disease upon the canine population as well as the lack of a specific antiviral treatment, the goal of the present work was to investigate natural compounds and their antiviral activity against CDV. We evaluated the in vitro inhibition of the CDV replicative cycle by the flavonoids quercetin, morin, rutin and hesperidin, and the phenolic acids cinnamic, trans-cinnamic and ferulic acids. Implications regarding structural differences of compounds and correlation with their antiviral activity were also considered.

2. Materials and methods

2.1. Cells and viruses

Vero cells were maintained in minimal essential medium (MEM) supplemented with 10% fetal bovine serum (SBF), penicillin (1.6 mg/L) and streptomycin (0.4 mg/L) at 37 °C and 5% CO_2. Canine distemper virus (strain Rockborn, 11th passage) was titrated by determining the infective dose for 50% tissue culture ($TCID_{50}$), according to the method described by Reed and Muench (1938).

2.2. Compounds

All seven phenolic compounds (quercetin, morin, rutin, hesperidin, cinnamic acid, trans-cinnamic acid and ferulic acid) were purchased from Sigma–Aldrich (Deisenhofen, Germany) (Figs. 8 and 9). Compounds were initially dissolved in dimethylsulfoxide (DMSO) to a stock concentration of 10 mg/mL and stored at 4 °C. When needed, compounds were diluted in MEM at the time of use to provide working concentrations.

2.3. Cytotoxicity assays

The cytoxicity of the phenolic compounds was determined by microscopic evaluation searching for changes in cell viability and morphology. Non-toxic concentrations were also confirmed by a variation of the colorimetric method based on reduction of the salt 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) (Sigma–Aldrich, Deisenhofen, Germany) by mitochondrial enzymes described by Mosmann (1983). Briefly, Vero cells were seeded into 96-well microplates, and after four hours at 37 °C different concentrations of each compound were added into media and analyzed after 72 h. Effect on cell morphology was observed microscopically, then cells were washed twice with phosphate buffered saline (PBS) pH 7.2 and incubated with MTT solution (1 mg/mL) for four hours. Subsequently, the formed salt was dissolved by adding DMSO (100 mL/well) followed by shaking for 15 min at 37 °C. Microplates were again incubated at 37 °C for 1 h. Optical densities (OD_{550}) were determined by an ELISA reader (Bio-Tek, EL X 800). Six wells were evaluated for each compound concentration and untreated control. The percentage of viable treated cells was calculated based on untreated controls (% of control cells = $OD_{exp}/OD_{control\ cells} \times 100$). The 50% cytotoxic concentration (CC_{50}) was defined as the compound concentration required to reduce the absorbance by 50% of the cell control.

2.4. Time of addition assays

The study was performed according to the method described by Serkedjieva and Ivancheva (1999) with some modifications. Briefly, 96-well microplates seeded with monolayers of Vero cells (1×10^5 cells/well) were individually supplemented with quercetin, morin, rutin, hesperidin, cinnamic acid, trans-cinnamic acid and ferulic acid at different times based on time of infection. The first set of plates was treated for 1 h prior to viral infection (time −1 h: pre-treatment effect). Cells were then washed twice with PBS followed by infection with serial dilutions of CDV ($10–10^5$ $TCID_{50}$/mL). The second set of microplates were both infected and treated with the compounds followed by incubation at 4 °C for 1 h to prevent virus internalisation (time 0 h: adsorption effect), after which the microplates were incubated at 37 °C. The third set of plates was infected and the compounds were then added after 1 h adsorption at 37 °C (time 1 h: penetration effect). The last set of plates was treated two hours post-infection (hpi) (time 2 h: intracellular effect). Assays were performed in triplicate. The antiviral activity of compounds at all stages of the viral replicativo cycle was measured by reduction in viral yield after 72 h post treatment compared to untreated infected cells and calculated using the method of Reed and Muench (1938). All antiviral assays were assessed under the same conditions with DMSO to evaluate the possible interference of this solvent. Ribavirin (RBV), a known positive control drug was assessed in parallel to validate the test. The 50% inhibitory concentration (IC_{50}) was defined as the compound concentration required to reduce viral CPE by 50% of the virus control. The selectivity index (SI) for the compounds was obtained by calculating the ratio of the CC_{50} and IC_{50} values for the virus replication at each time point.

2.5. Evaluation of compounds structures

Compounds were divided in two groups, flavonoids and phenolic acids, based on their characteristics and chemical properties. For each group we established the common concentration used in the time of addition assays in order to analyze their structural differences and correlated it to their antiviral activity. The following flavonoids were compared to each other at a common concentration of 30 μg/mL: (i) quercetin and morin, (ii) quercetin and rutin, (iii) quercetin and hesperidin, and (iv) rutin and hesperidin. For phenolic acids, a comparative analysis between (i) cinamic and trans-cinamic acids, and (ii) trans-cinamic and ferulic acids was perfomed at a concentration of 10 μg/mL.

2.6. Data analyses

Statistical analyses were performed using the program Statistical Analysis and Design of Experiments – SISVAR (Sisvar 5.1 Build 72, Federal University of Lavras, MG, Brazil). Cytotoxicity and time of addition assays were analyzed by ANOVA one-way and two-way ANOVA, respectively. CC_{50} and IC_{50} were calculated from a linear regression equation. The Tukey test was used to compare means. Values of p less than 0.05 were considered significant.

3. Results

3.1. Cytotoxic effect

The cytotoxicity of the evaluated compounds was determined by microscopic observation of cell morphology associated with

the measurement of cell viability by the colorimetric method MTT. We observed that intensity and variety of cellular morphological changes (loss of monolayer, granulation, cytoplasmic vacuolisation, stretching and narrowing of the extensions as well as darkening of the cell edges) became more apparent with increasing concentrations of the compounds. Table 1 shows CC_{50} values obtained from the cytotoxicity assays.

DMSO CC_{50} was higher than the DMSO% used to dissolve the compounds, proving the absence of DMSO cellular toxicity against Vero cells at volumes used to dissolve the compounds. The phenolic compounds showed CC_{50} values ranging from 115.88 ± 11.19 (quercetin) to 195.90 ± 7.84 μg/mL (morin).

3.2. Time of addition assays

Antiviral activity of compounds was determined by time of addition assays. These tests had the purpose of investigating which step of the viral replicative cycle the compounds might be affecting. IC_{50} and SI (CC_{50}/IC_{50}) values obtained from the cytotoxicity and antiviral assays are shown in Table 1.

No significant differences were observed in viral titres with DMSO at the highest concentration (0.8%) as a solvent for the compounds in time of addition assays (not shown data). DMSO concentrations did not interfere with antiviral activity exhibited by flavonoids and phenolic acids. A positive control with ribavirin (RBV), which affects the intracellular phase of the CDV replicative cycle, was also performed (Supplementary Fig. 1).

The IC50 and SI values of phenolic compounds exhibiting activity ranged from 3.56 ± 0.13 (ferulic acid, time 0 h) to 40.52 ± 1.69 μg/mL (morin, time 1 h) and from 4.44 (trans-cinnamic acid, time −1 h) to 41.6 (ferulic acid, time 0 h), respectively (Table 1).

Our results showed that all flavonoids displayed antiviral activity against CDV. As demonstrated in Fig. 1, quercetin reduced viral yield at times 0 h (EC_{50} 11.72 μg/mL and SI 9.88), 1 h (EC_{50} 12.66 μg/mL and SI 9.15) and 2 h (EC_{50} 13.94 μg/mL and SI 9.31). Fig. 2 demonstrated that morin had antiviral effect at times 0 h (EC_{50} 34.02 μg/mL and SI 5.76) and 1 h (EC_{50} 40.82 μg/mL and SI 4.83). Reduction in viral titres was most significant at the concentration of 80 μg/mL. Rutin and hesperidin (Figs. 3 and 4) showed a significant reduction in viral infectivity at times 0 h (rutin: EC_{50} 10.41 μg/mL and SI 15.01; hesperidin: EC_{50} 11.09 μg/mL and SI 14.78) and 1 h (rutin: EC_{50} 13.45 μg/mL and SI 11.62; hesperidin: EC_{50} 13.92 μg/mL and SI 11.78). On the other hand, hesperidin had also shown antiviral effect at time 2 h (EC_{50} 21.63 μg/mL and SI 7.58) at the concentration of 30 μg/mL. Antiviral activity exhibited by rutin and hesperidin at time 0 h was greater than others affecting the times 1 and 2 h.

The three phenolic acids tested also showed inhibitory effects against CDV replication. As shown in Fig. 5, antiviral effect of cinnamic acid was demonstrated at times 0 h (EC_{50} 4.46 μg/mL and SI 30.12) and 2 h (EC_{50} 6.18 μg/mL and SI 21.74), but cinnamic acid only showed a reduction in viral yield at 2 h only at a concentration of 10 μg/mL. Addition of trans-cinnamic acid (Fig. 6) led to reduction of viral titres at times −1 h (EC_{50} 37.27 μg/mL and SI 4.44) and 0 h (EC_{50} 23.11 μg/mL and SI 7.16) at the concentration of 60 μg/mL. Fig. 7 shows the antiviral action of ferulic acid at times 0 h (EC_{50} 3.56 μg/mL and SI 41.6) and 1 h (EC_{50} 3.63 μg/mL and SI 40.8), with no statistical differences between them.

3.3. Analyses of antiviral activity versus chemical structure

To facilitate structural evaluation of compounds related to their antiviral effects, we chose equal working concentrations for the flavonoids (30 μg/mL) and phenolic acids (10 μg/mL) in the time of addition assays. Establishment of efficient relationships between phenolic compounds was important to understand the variation of the inhibitory effects based on changes in their chemical structures. According to data presented in Table 2, flavonoids that exhibited greater antiviral activity were rutin and hesperidin, affecting the stage of adsorption; there was no significant difference between them. Quercetin and hesperidin showed inhibitory effect at almost all viral replicative cycle stages, except in the stage prior to infection. Quercetin and hesperidin were also the only flavonoids that displayed similar antiviral activity in the intracellular stage.

Among phenolic acids evaluated ferulic acid had the highest inhibitory activity against CDV in the stages of adsorption and penetration with no significant differences between them (Table 3). Cinnamic acid, on the other hand, was the only phenolic that showed inhibition in the intracellular viral stage. Trans-cinnamic acid did not show antiviral activity against CDV at the same working concentration as the other compounds.

4. Discussion

In the present study several flavonoids (quercetin, morin, rutin, and hesperidin) and phenolic acids (cinnamic, trans-cinnamic, and ferulic acids) were evaluated regarding their in vitro ability to inhibit stages of the CDV replicativo cycle. All flavonoids and phenolic acids demonstrated antiviral action against CDV. The observed inhibitory effects of flavonoids in the stages of adsorption and penetration suggest a direct inactivation of the virus, perhaps by binding to viral particles in an irreversible manner or by destabilizing viral ligands that are essential to the infectious process, such as envelope glycoproteins. Consequently, the role of flavonoids in

Table 1
Cytotoxicity, anti-CDV activity and selectivity indices of the tested compounds.

Compounds	CC_{50} (μg/mL)[a]	IC_{50} (μg/mL)[a] Time (h)[c]				SI[b] Time (h)[c]			
		−1	0	1	2	−1	0	1	2
Quercetin	115.88 ± 11.19	–	11.72 ± 0.85	12.66 ± 1.15	13.94 ± 1.24	–	9.88	9.15	8.31
Morin	195.90 ± 7.84	–	34.02	40.52 ± 1.69	–	–	5.76	4.83	–
Rutin	156.33 ± 7.12	–	10.41 ± 0.12	13.45 ± 1.65	–	–	15.01	11.62	–
Hesperidin	163.99 ± 21.09	–	11.09 ± 0.45	13.92 ± 2.2	21.63 ± 6.24	–	14.78	11.78	7.58
Cinnamic acid	134.37 ± 19.08	–	4.46 ± 0.78	–	6.18 ± 1.28	–	30.12	–	21.74
Trans-cinnamic acid	165.45 ± 13.73	37.27 ± 8.02	23.11 ± 4.48	–	–	4.44	7.16	–	–
Ferulic acid	148.11 ± 13.47	–	3.56 ± 0.13	3.63 ± 0.08	–	–	41.6	40.8	–
Ribavirin (mM)	1.44 ± 0.19	0.05 ± 0.01	–	0.06 ± 0.01	0.03 ± 0.01	28.8	–	24	48
DMSO (%)	2.11 ± 0.11	–	–	–	–	–	–	–	–

[a] CC_{50} and IC_{50} values represent mean ± standard error of the mean values.
[b] Selectivity index (CC_{50}/IC_{50}).
[c] Time of addition assay. Stages of CDV replicative cycle: Pre-treatment (−1 h), adsorption (0 h), penetration (1 h), and intracellular (2 h).

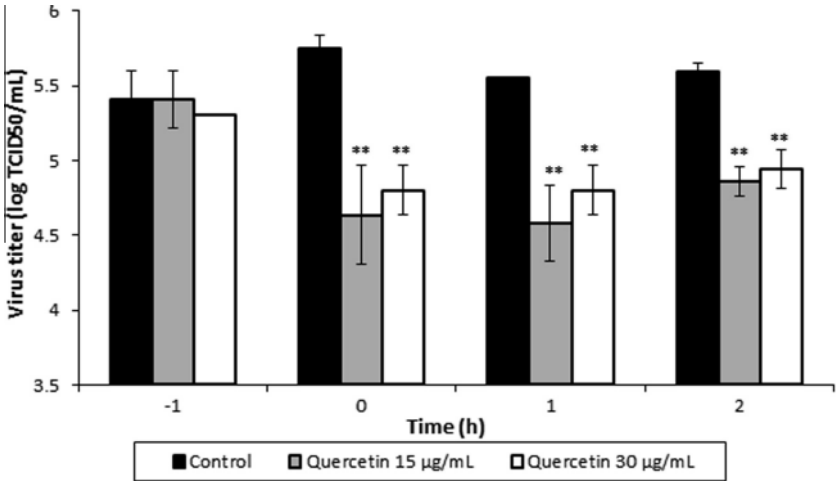


Fig. 1. Inhibitory effects of quercetin at different stages of CDV replicative cycle. Concentrations of 15 or 30 µg/mL were added at varying times during virus infection: Pre-treatment (−1 h), adsorption (0 h), penetration (1 h), and intracellular (2 h). **Concentration is statistically different compared to untreated control ($p < 0.01$).

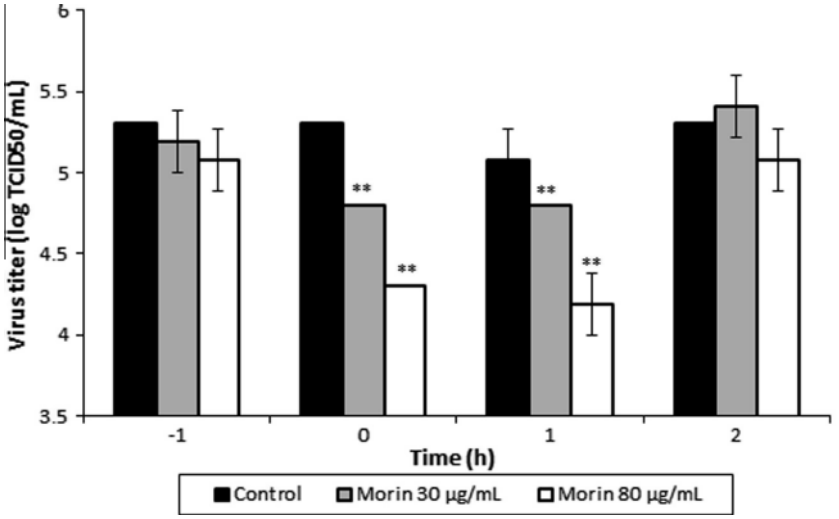


Fig. 2. Inhibitory effects of morin at at different stages of CDV replicative cycle. Concentrations of 30 or 80 µg/mL were added at varying times during virus infection: Pre-treatment (−1 h), adsorption (0 h), penetration (1 h), and intracellular (2 h). **Concentration is statistically different compared to untreated control ($p < 0.01$).

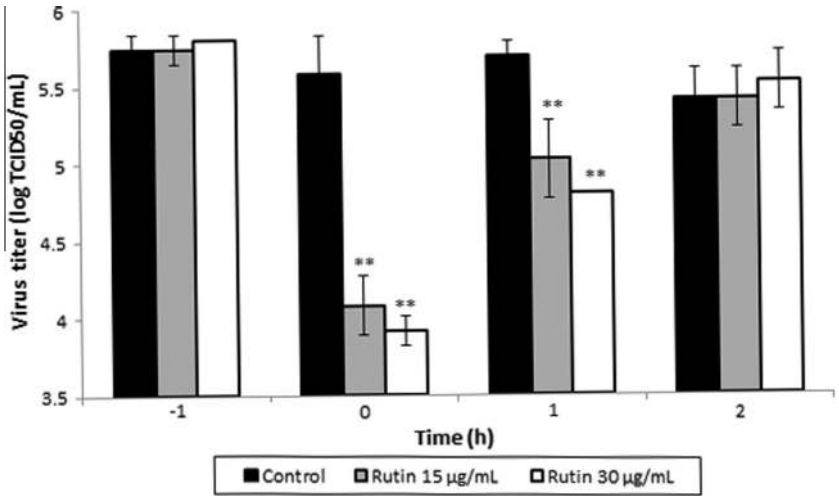


Fig. 3. Inhibitory effects of rutin at different stages of CDV replicative cycle. Concentrations of 15 or 30 µg/mL were added at varying times during virus infection: Pre-treatment (−1 h), adsorption (0 h), penetration (1 h), and intracellular (2 h). **Concentration is statistically different compared to untreated control ($p < 0.01$).

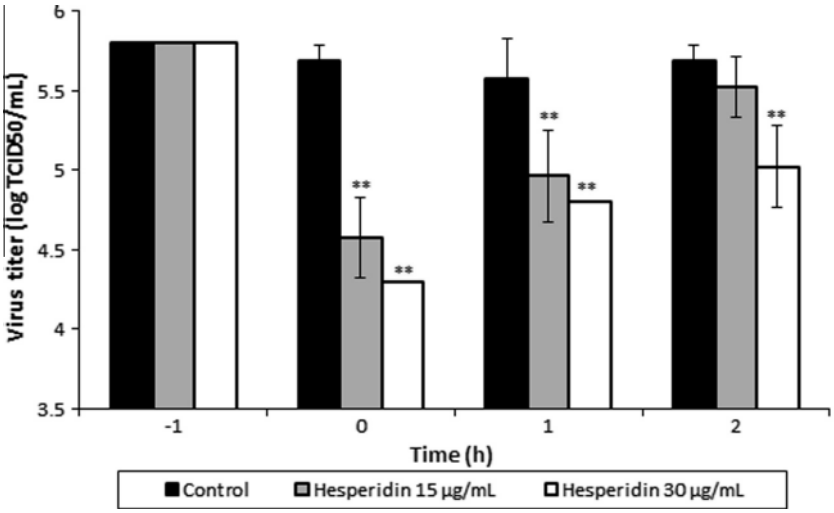


Fig. 4. Inhibitory effects of hesperidin at different stages of CDV replicative cycle. Concentrations of 15 or 30 μg/mL were added at varying times during virus infection: Pre-treatment (−1 h), adsorption (0 h), penetration (1 h), and intracellular (2 h). **Concentration is statistically different compared to untreated control ($p < 0.01$).

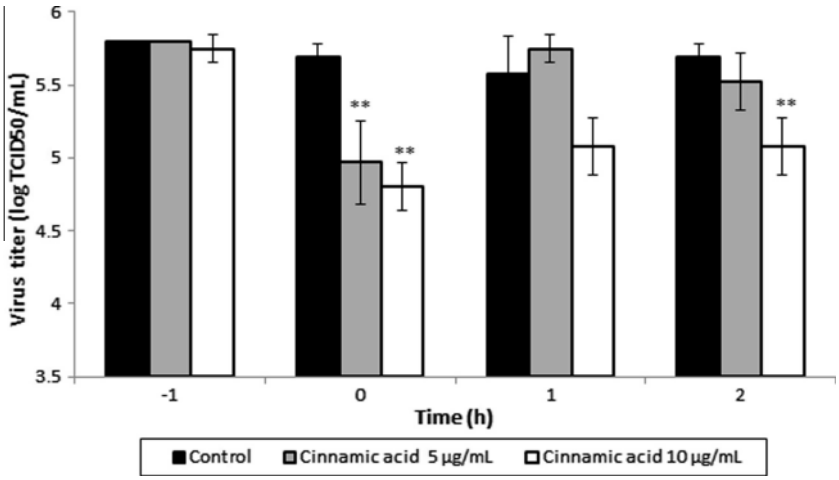


Fig. 5. Inhibitory effects of cinnamic acid at different stages of CDV replicative cycle. Concentrations of 5 or 10 μg/mL were added at varying times during virus infection: Pre-treatment (−1 h), adsorption (0 h), penetration (1 h), and intracellular (2 h). **Concentration is statistically different compared to untreated control ($p < 0.01$).

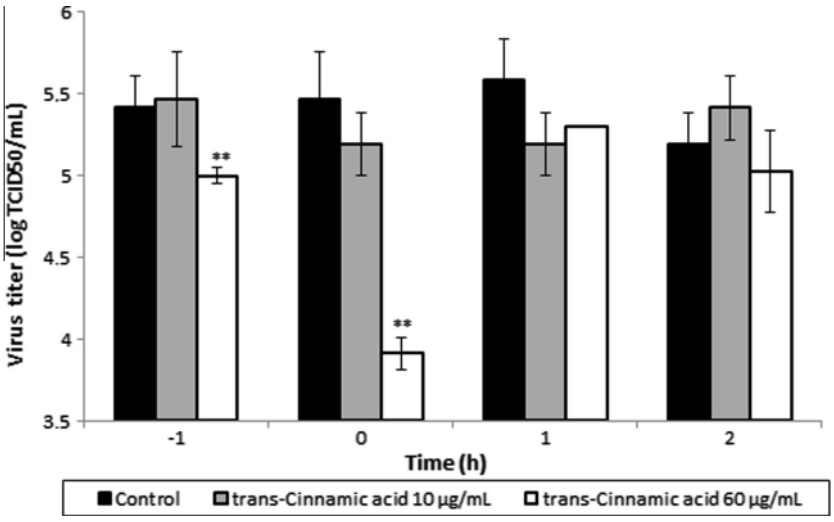


Fig. 6. Inhibitory effects of trans-cinnamic acid at different stages of CDV replicative cycle. Concentrations of 10 or 60 μg/mL were added at varying times during virus infection: Pre-treatment (−1 h), adsorption (0 h), penetration (1 h), and intracellular (2 h). **Concentration is statistically different compared to untreated control ($p < 0.01$).

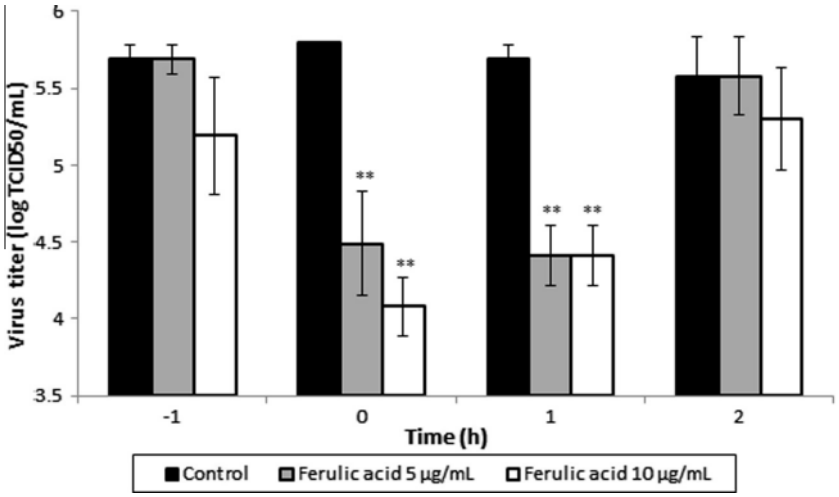


Fig. 7. Inhibitory effects of ferulic acid at different stages of CDV replicative cycle. Concentrations of 5 or 10 µg/mL were added at varying times during virus infection: Pre-treatment (−1 h), adsorption (0 h), penetration (1 h), and intracellular (2 h). **Concentration is statistically different compared to untreated control ($p < 0.01$).

the early stages of viral replication would reduce the number of infected cells and the formation of viral progeny. Furthermore, selectivity index (SI) greater than 3 indicates potential antiviral activity for compounds derived from plants (Chattopadhyay et al., 2009). All phenolic compounds evaluated in the present work exhibited SI values equal or greater than 3 (Table 1).

Quercetin and hesperidin inhibited the intracellular phase of CDV replication cycle. It has been demonstrated that quercetin and some other flavonoids can inhibit viral polymerase and interfere with the synthesis of viral nucleic acid (Formica and Regelson, 1995; Cushnie and Lamb, 2005). Interference by such phenolic compounds in the CDV post-infection stage has also been demonstrated by Gallina et al. (2011); the phenolic dimer proanthocyanidin A2 resulted in both reduction of viral RNA synthesis and viral progeny, suggesting that the replicative complex may be affected.

On the other hand, Formica and Regelson (1995) correlated the antiviral property of quercetin with its ability to bind to envelope glycoproteins and the viral capsid. Moreover, Schnitzler et al. (2008) showed that quercetin bound to glycoproteins of the viral envelope which blocked the host cell–virus interaction. According to Kim et al. (2010) quercetin showed a reduction of influenza virus A replication in the early stages of infection. Other studies with flavonoids and tannins showed similar results at the stages of adsorption and penetration of different viruses (Kuo et al., 2009; Gravina et al., 2011). The structural similarities among flavonoids might imply similar inhibitory mechanisms.

All phenolic acids evaluated in this study also demonstrated antiviral properties against CDV. Cinnamic acid derivatives have been reported to have antiviral effects against DENV (Rees et al., 2008) as well as EHV-1 in stages of pre-treatment and adsorption

Table 2
Correlation of virus titers in the positive controls (untreated) versus flavonoid treated at different stages of CDV replicative cycle.

Flavonoids	Log virus titer C+/Log virus titer [C] Time (h)				*F* value	CV (%)
	−1	0	1	2		
Quercetin	1.02^{aB}	**1.20^{bA}**	**1.16^{abA}**	**1.13^{aA}**	18.24^{**}	2.78
Morin	1.02^{aAB}	**1.10^{bA}**	**1.05^{bAB}**	0.98^{bB}	6.85^{*}	3.22
Rutin	0.99^{aC}	**1.42^{aA}**	**1.18^{aB}**	0.98^{bC}	46.47^{**}	4.66
Hesperidin	1.00^{aC}	**1.32^{aA}**	**1.16^{abB}**	**1.13^{aB}**	27.57^{**}	3.79
F value	0.97 NS	35.0^{**}	5.93^{*}	9.18^{**}	–	–
CV (%)	2.78	3.31	3.94	4.84	–	–

Values in bold indicate significant reduction in virus titer compared to the virus control ($p < 0.01$).
Averages represented by the same lower case letter (column) and upper case letter (row) did not differ by Turkey test. C+ = untreated infected cells (positive control); [C] = common working concentration (30 µg/mL); −1 h: pre-treatment; 0 h: adsorption; 1 h: penetration; 2 h: intracellular; NS: no significant.
* Antiviral action is statistically significant by Tukey test, $p < 0.05$.
** Antiviral action is statistically significant by Tukey test, $p < 0.01$.

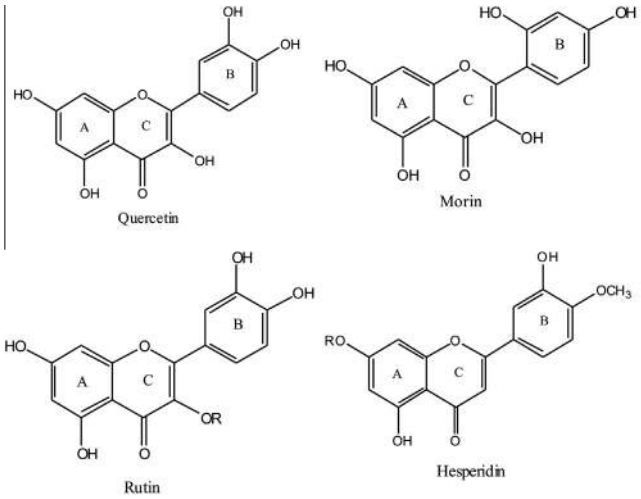


Fig. 8. Quercetin, morin, rutin and hesperidin chemical structures. R: sugar residue.

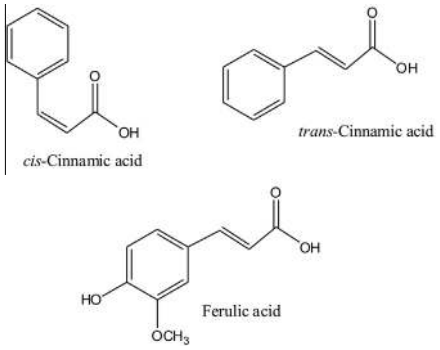


Fig. 9. Cis-cinnamic, trans-cinnamic and ferulic acids chemical structures.

Table 3
Correlation of virus titers in the positive controls (untreated) versus phenolic acids treated at different stages of CDV replicative cycle.

Phenolic acids	Log virus titer C+/Log virus titer [C] Time (h)				*F* value	CV (%)
	−1	0	1	2		
Cinnamic acid	1.01^{aB}	$\mathbf{1.18}^{bA}$	1.10^{bAB}	$\mathbf{1.11}^{aAB}$	26.05**	4.79
Trans-cinnamic	0.99^{aA}	1.05^{bA}	1.07^{bA}	0.96^{bA}	2.49 NS	5.71
Ferulic acid	1.10^{aB}	$\mathbf{1.45}^{aA}$	$\mathbf{1.29}^{aA}$	1.05^{aB}	26.05**	4.79
F value	2.22 NS	36.32**	9.28*	25.80**	–	–
CV (%)	6.59	4.41	5.52	2.58	–	–

Values in bold indicate significant reduction in virus titer compared to the virus control ($p < 0.01$). Averages represented by the same lower case letter (column) and upper case letter (row) did not differ by Turkey test. C+ = untreated infected cells (positive control); [C] = common working concentration (10 μg/mL); −1 h: pre-treatment; 0 h: adsorption; 1 h: penetration; 2 h: intracellular; NS: no significant.
* Antiviral action is statistically significant by Tukey test, $p < 0.05$.
** Antiviral action is statistically significant by Tukey test, $p < 0.01$.

(Gravina et al., 2011). This antiviral action may be due to a direct action to inactivate viral particles and/or cellular receptors, perhaps leading to their destabilization or blocking virus-cell interaction.

Cinnamic acid is a precursor in the synthesis of flavonoids and other phenolic acids, demonstrating a positive correlation between phenolic structures and antiviral properties. Phenolic compounds are reported to have high affinity for proteins, forming unstable complexes (Haslam, 1996). Therefore, the antiviral effects of flavonoids in the early and post-infectious stages of CDV cycle can be applied to phenolic acids which have inhibitory mechanisms through interaction with viral envelope glycoproteins (Schnitzler et al., 2008), or inhibition of viral polymerase with consequent interference in viral genome synthesis(Formica and Regelson, 1995; Cushnie and Lamb, 2005).

In this study, we also analyzed the structural differences among compounds in order to investigate whether it was correlated with antiviral activity which might be useful for the design of new antiviral drugs. The structural similarity between quercetin and morin may be related to the results observed in our study since they were able to inhibit the stages of adsorption and penetration (Table 2, Fig. 8). Both flavonoids belong to the flavonol class and the only structural difference between them is the hydroxyl position in ring B; morin has hydroxyls at C-2′ and C-4′ (meta), quercetin at C-3′ and C-4′ (ortho). Thus, absence of antiviral action in the post-infection phases for morin might be related to the position of the hydroxyl at C-2′, which might prevent its biological effects on CDV.

Rutin, another flavanol, also has a chemical structure similar to quercetin; however, it is glycosylated in the C-3 position of the ring C (Fig. 8). It is still unclear how these flavonoids specifically act, but this structural difference between the two might have contributed to the antiviral effect of rutin in the adsorption stage which was greater than that of quercetin.

Hesperidin is classified in the flavonones class due to the absence of a double bond between C-2 and C-3 in ring C. Similar to quercetin, it also presents substitutes in the same positions of ring B (C-3′ and C-4′), but hesperidin is glycosylated at the hydroxyl of C-7 in ring A (Fig. 8). Although the structural similarity explains the inhibitory effects, which were statistically identical for penetration and intracellular replication, the sugar existent in the hesperidin might be responsible for the greater antiviral activity compared to quercetin in the adsorption step.

When comparing rutin and hesperidin, both have ortho substitutions in positions C-3′ and C-4′ in ring B and antiviral effects at the stages of adsorption and penetration (Fig. 8). The difference in the structural sugar insertion for these two flavonoids might be related to the intracellular viral inhibition stage. Since this inhibition was observed only for hesperidin it is possible that the antiviral mechanism is related to the position of the sugar in the C-7 hydroxyl of ring A. The greatest antiviral activity was demonstrated for the glycosylated flavonoids in the stage of adsorption, suggesting that the sugar present in the polyphenolic compounds had more affinity to bind to viral structures important to the onset of infection.

Phenolic acids evaluated in our study also possess considerable structural similarity. Cinnamic and trans-cinnamic acids are geometrical isomers; however, the trans isomer form lacked antiviral effect since trans-cinnamic acid did not present antiviral action at the lowest working concentration (Table 3, Fig. 9). On the other hand, the cis isomer form of cinnamic acid provided interference in the stages of adsorption and intracellular viral replicative cycle. Ferulic acid differs from trans-cinnamic acid only by the presence of substitutes in C-4 and C-5 of the aromatic ring, and these structural differences might be related to the antiviral effects in the stages of adsorption and penetration compared to trans-cinnamic acid. Structural differences of ferulic acid in relation to trans-cinnamic acid might be responsible for an increase in its affinity for cellular receptors and/or viral fusion proteins, which would also amplify its inhibitory mechanism during the viral adsorption phase. Our results showed that ferulic acid exhibited the greatest antiviral activity when compared to cinnamic acid.

Phenolic compounds evaluated here revealed significant antiviral activity against CDV. Further analysis will determine whether those promising candidates can be considered in the treatment of CDV as well as for the development of antiviral drugs against other viruses of significance in veterinary medicine such as measles virus, since both are genetically related (Summers and Appel, 1994; Rudd et al., 2006; Rodeheffer et al., 2007). Our analysis of the relationship between chemical structures of compounds and their antiviral activities may indicate putative sites that might be used as models for designing new antiviral agents. Future experiments are still required to determine the inhibitory mechanism displayed by flavonoids and phenolic acids in order to assess their applicability in the treatment of CDV-infected animals.

Conflict of interest

None of the authors has any financial or personal relationships that could inappropriately influence or bias the content of the paper.

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ional de Desenvolvimento Científico e Tecnológico) for the financial support of this research.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.rvsc.2013.04.013.

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Original Article

SURVEILLANCE OF NEUTRALIZING ANTIBODIES AGAINST *BOVINE HERPESVIRUS 1* IN CATTLE HERDS FROM DIFFERENT FARMING PROPERTY SYSTEMS

DISTRIBUIÇÃO DE ANTICORPOS NEUTRALIZANTES CONTRA O HERPESVIRUS BOVINO 1 EM PROPRIEDADES BOVINAS DE DIFERENTES SISTEMAS DE CRIAÇÃO

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ABSTRACT: The aim of this study was to investigate the presence of neutralizing antibodies against *bovine herpesvirus 1* (BoHV-1) in 722 non-vaccinated animals from eight properties that use different farming systems (extensive, semi-confinement and confinement). Serum samples were subjected to neutralization tests in order to search for anti-BoHV-1 antibodies. Serological results were categorized as negative, low titer, intermediate titer or high titer. One property showed no positive samples; while other properties presented frequency of positive samples ranging from 17.95% to 86.96%. For animals raised under confinement, the number of positive samples and neutralizing antibody titers were lower compared to others, possibly due to good sanitary practices adopted by this type of system. Altogether, our results can contribute towards the understanding of the endemic infection in Brazil.

KEYWORDS: Infectious bovine rhinotracheitis. Extensive. Semi-confinement. Confinement.

INTRODUCTION

Bovine herpesvirus 1 (BoHV-1) is classified as a member of the family *Herpesviridae*, subfamily *Alphaherpesvirinae* (ICTV, 2009), and it is known as one of the most important pathogens in cattle worldwide (MUYLKENS et al., 2007). BoHV-1 is capable to cause syndromes such as infectious bovine rhinotracheitis (IBR), infectious pustular vulvovaginitis (IPV) and infectious pustular balanoposthitis (IPB). It can also cause abortion, infertility, conjunctivitis and encephalitis in cattle (NANDI et al., 2009). This herpesvirus causes latent infection in susceptible animals which will lead to the chronic stage (ACKERMANN; PETERHANS; WYLER, 1982). Major economic losses are associated with infection, mostly because of reproductive failure and intermittent viral excretion (TURIN; RUSSO, 2003).

Cattle farming systems can be divided into extensive, semi-confinement and confinement (ASSIS et al., 2005). The confinement systems are characterized by segregation of animals in specific areas with controlled food (PEIXOTO, 1988). The main characteristic of the semi-confinement system is the fact that the pasture is used for maintenance and energy source during part of the day, and after that, herd remains in places with controlled feed. Finally, in the extensive system the pasture area is the only energy source (ASSIS et al., 2005).

Cattle farming systems have a series of variables that can represent risk factors for BoHV-1 infection. Some of them are already known to increase the risk of infection; for instance, introduction of infected animals in the herd (PASTORET et al., 1982). Animals are exposed to each other in properties with extensive farming commonly because they share the same pasture; and that facilitates viral transmission by respiratory, ocular and genital secretions. Moreover, a potential infection can be considered via contact with another animal species which can act as carriers or vectors of the virus from one property to another (THORSEN et al., 1977). High density of animals sharing the same place can also increase the risk of infection (VAN WUIJCKHUISE et al., 1998). Furthermore, the frequent exposure to traders, farmers and veterinarians should be considered a risk factor for BoHV-1 infection (BOELAERT et al., 2005).

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BoHV-1 is present worldwide and varies in prevalence due to prevention and control methods. Particularly, in Brazil, antibodies against BoHV-1 have been extensively detected in herds (LOVATO et al., 1995; MELO; OLIVEIRA; FIGUEIREDO, 1997; MELO; AZEVEDO; ALFARO, 1999; MOLNÁR et al., 2001; ROCHA et al., 2001; DIAS et al., 2008; BEZERRA et al., 2012). Analysis of BoHV-1 infection in cattle herds raised in different systems has not been intensely investigated. Therefore, in the present work, our goal was to assess the presence of antibodies against BoHV-1 in non-vaccinated animals raised in extensive, semi-confinement and confinement systems.

MATERIAL AND METHODS

Sampling and property

This study was performed using blood samples from 772 animals (age approximately 24 months) from eight herds not vaccinated against BoHV-1, coming from Bom Despacho, Cajuri and Viçosa cities (Minas Gerais State), and Dores do Rio Preto (Espirito Santo State). From a total of 772 samples, 579 originated from dairy herds and 194 came from one herd of beef cattle exploration. Animals used in dairy farming were derived from two properties that uses the extensive system (E-P1: 98 animals, E-P2: 69 animals), two farms that uses the semi-confined system (SC-P4: 114 animals, SC-P5: 100 animals), and two properties that uses the confined farming system (C-P6: 115 animals, C-P7: 39 animals, C-P8: 43 animals). Beef cattle were originated from an extensive system production farm (E-P3:194 animals). All properties presented restrictions on animal's entry, except property EP-3. Samples were centrifuged and sera were stored at -20°C.

Cells and viral stock

MDBK (Madin-Darby bovine kidney) cells were cultured in Minimum Essential Media (MEM) (Cultilab), and supplemented with 5% fetal bovine serum (FBS) (Cultilab) at 37°C and 5% CO_2. For production of BoHV-1 stock, we used BoHV-1 LA strain (BoHV-1 Los Angles). Viral titer was obtained by $TCID_{50}$ and calculated according to Reed and Muench (1938).

Survey of neutralizing antibodies

Tests for neutralizing antibodies against BoHV-1 were performed using serum neutralization (SN) technique as described by House and Baker (1971), with minor modifications. Briefly, serum samples were thawed and placed in the water bath at 56°C for 30 minutes, and 200 DICC50/50µL of BoHV-1 LA was added to serum dilutions from each animal. Serum-virus mixture was incubated for 60 minutes at 37°C, and then, 50µL of MDBK cells suspension (300,000 cells/mL) were added. Tests were read after 72 hours of incubation by monitoring the cytopathic effect (EPC). Positive and negative control sera were also used.

Statistical analysis

Serological results were classified according to the titer obtained. Titers less than 2 were classified as negative, titers 2 and 4 as low, and titers 8, 16 and 32 as intermediate, and 64 and 128 as high. The chi-square test was used to verify differences between frequencies of positive and negative evidences against the system of creation. The non-parametric Kruskal-Wallis test was used to verify differences between titers of neutralizing antibodies and variables. Geometric mean values were expressed as mean $\log_4$ of the titer obtained. To discriminate differences within a group we used the Dunn test. Tests were performed by_GraphPad Prism version 5.00 for Windows (San Diego, USA), and significance was based on $p<0.05$.

RESULTS

Seven out of eight properties selected for this study were positive. The positivity of farms varied from 17.95 to 86.96% (table 1). Our results demonstrate that properties C-P7 and C-P8 presented the greatest numbers of negative samples. In fact, the property C-P8 was the only one that did not have positive animals. On the other hand, property E-P2 showed high frequency of intermediate and high titers of antibodies against BoHV-1.

Table 1. Evaluation of the presence of neutralizing antibodies to BoHV-1 in different properties.

Farm	Negative samples (%)	Positive samples (%)			Total positive samples (%)
		Low	Medium	High	
E-P1	42.8	15.3	33.6	8.2	57.2
E-P2	13.0	18.8	40.6	27.5	87.0

E-P3	39.2	19.1	32.0	9.8	60.8
SC-P4	43.9	10.5	36.8	8.8	56.1
SC-P5	42.0	19.0	29.0	10.0	58.0
C-P6	47.0	36.5	15.7	0.9	53.0
C-P7	82.1	2.6	15.4	0	17.9
C-P8	100.0	0	0	0	0

As showed in Figure 1, significant differences were observed between the systems adopted. Animals raised in the extensive and semi-confinement systems showed a higher titer frequency (12.7% and 9.3%, respectively) compared to the confinement system (0.6%). Therefore, for the confinement system a higher frequency of negative samples (65.5%) was statistically significant compared to the extensive (35.2%) and semi-confinement (43%) systems. Between extensive and semi-confinement systems, no substantial difference was observed.

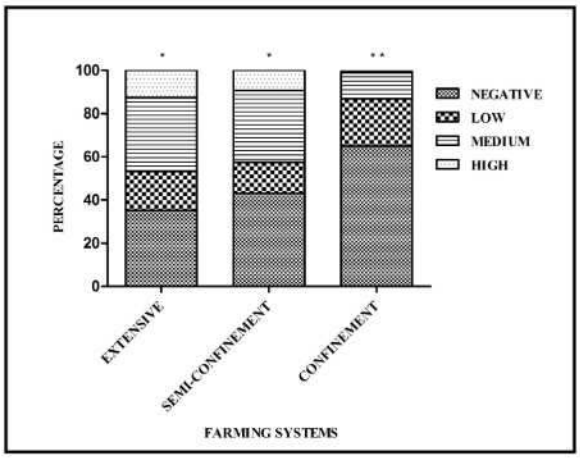


Figure 1. Frequency of samples containing low, intermediate, and high antibody titers. Negative samples in the different farming systems studied. **: frequencies of negative, intermediate and high antibody titers in the confinement system showed significant differences compared to other systems. ($p < 0.05$).

The confinement system also had a lower geometric mean for neutralizing antibodies (0.38 ± 0.655) when compared to the extensive (1.24 ± 1.16) and semi-confined (1.06 ± 1.127) systems evaluated (Figure 2).

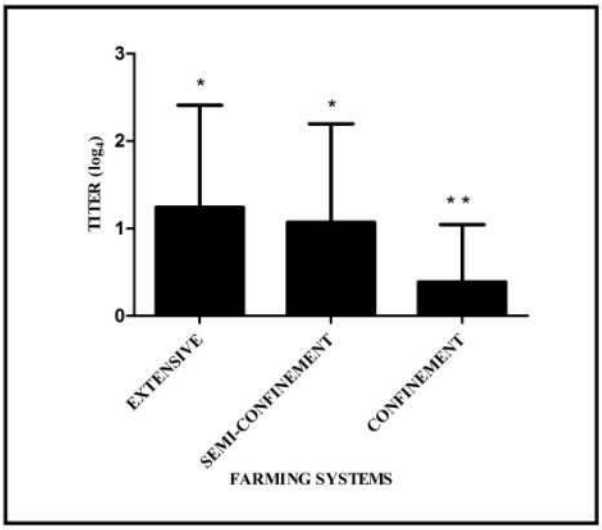


Figure 2. Mean of antibody titers converted by log4 at the different farming systems, **: significant difference between the confinement system compared to other systems

DISCUSSION

The main cattle systems used in Brazil are both extensive and semi-confined. However, the confinement system is increasing significantly throughout the country (BRAGA, 2010). Consequently, understanding the dynamics of BoHV-1 in these systems is important to improve animal management. Studies about viral circulation in animals naturally infected with BoHV-1 and its association with creation system remain scarce. Here, the present study aimed to present information on the distribution of infection in different farming systems.

The frequency of positive animals showed high variation among the sampled properties, which corroborates with results shown in serological studies for BoHV-1 performed in various regions of Brazil (ROCHA; GOUVEIA; LEITE, 1995; MELO; OLIVEIRA; FIGUEIREDO, 1997; BEZERRA et al., 2012). Furthermore, our results demonstrated a lower frequency of seropositive animals in the breeding confinement system. That can be explained by the sanitary management which is best controlled at the feedlot. Moreover, typically in this system there are no restrictions on the contact between herd animals and animals from neighboring properties (FRASER, 1980).

Another advantage of the containment system is the control of external factors such as contact with other species that could be infected by BoHV-1. Infection of cattle transmitted by other species may occur under natural conditions. Indeed, this type of infection has been described (AGUIRRE et al., 1995) and experimented (THORSEN et al., 1977) in wild cervids. For our study this possibility was ruled out since the properties sampled are located in regions between the Cerrado and Atlantic Forest which are inhabited by cervids.

Furthermore, considering the raising system as a risk factor, a study of dairy herds in northeastern China showed that animals reared in extensive system had higher rates of infection by *Neospora canimum* when compared to animals raised in the confinement system (WANG et al., 2010). In fact, another study in Italy by Rinaldi et al. (2007) also demonstrated that *N. caninum* infection increases the risk of BoHV1 infection in cattle. However, in our study we did not investigate whether animals raised in the extensive system were also co-infected with *N. caninum*.

Taking into consideration that the sanitary practices in the extensive, and semi-confined systems are less controlled than the confinement system (FRASER, 1980), it is possible to assume that animals raised under poor health management practices have potentially higher rate of infection by different pathogens. Additionally, some studies have shown that animals infected by other pathogens are also the most susceptible to BoHV-1 infection (MENSIK et al., 1976; MSOLLA et al., 1983). But in a another study, Dias et al. (2008) evaluated different risk factors for BoHV-1 between extensive and semi-confined/confined systems and found no difference in the percentage of positive animals. In this case, this result could be explained because analyses of confined and semi-confined systems were placed in the same group. Moreover, antibody titers against BoHV-1 were not assessed during this study, which is important when evaluating results.

It is also relevant to mention the ability of BoHV-1 in establishing latent infection. This characteristic makes them indefinitely attached to their hosts, and viruses can circulate between them during the primary infection or by reactivation from latency (MUYLKENS et al., 2007). This type of infection is characterized by the absence of viral expression and, therefore, inexistent production of antigenic molecules that stimulate the immune response (NANDI et al., 2009; JONES; SILVA; SINANI, 2011). At this point, antibody titers against BoHV-1 are lower but they tend to increase when viral infection is reactivated (MUYLKENS et al., 2007). Although it is difficult to determine the latent infection *in vivo*, our results demonstrated that neutralizing antibody titers were higher in animals from the extensive and semi-confined systems than those from the confined system, which suggests either a recent viral reactivation or primary infection.

Altogether, our study showed that extensive and semi-confined management systems seem to favor BoHV-1 infection in cattle because of the higher frequency of seropositivity. Therefore, our data indicates that cattle raised extensively are more susceptible to infection by BoHV-1. Since in Brazil extensive and semi-confined systems prevail over confined, our results suggest that the extensive system can be a risk factor for the occurrence of BoHV-1infection.

CONCLUSION

Although the present work did not aim to study the prevalence of BoHV-1 in Brazil, our results can help to understand the risk factors associated with the handling of animals. Our data indicate that the confinement system contributes to a

lower risk of BoHV-1 infection when compared to extensive and semi-confinement systems.

ACKNOWLEDGEMENTS

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RESUMO: Este trabalho teve por objetivo avaliar a distribuição de anticorpos neutralizantes contra o *herpesvirus bovino 1* (BoHV-1) em 722 animais não vacinados pertencentes a oito propriedades que utilizam diferentes sistemas de criação (extensivo, semi-confinamento e confinamento). As amostras sorológicas foram submetidas ao teste de soroneutralização para pesquisa de anticorpos anti-BoHV-1. Os resultados foram classificados em títulos negativo, baixo, médio e alto. Uma propriedade não apresentou amostras positivas, enquanto que nas demais propriedades a frequência de amostras positivas variou de 17,95% a 86,96%. Os animais do sistema de criação por confinamento apresentaram menor número de amostras positivas quando comparado aos animais do outros sistemas de criação, possivelmente devido às boas práticas sanitárias adotadas por esse sistema. Dessa forma, nossos resultados podem contribuir para o entendimento dessa infecção endêmica no Brasil.

PALAVRAS-CHAVE: Rinotraqueíte infecciosa bovina. Extensivo. Semi-confinamento. Confinamento

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Detecção de peptídeos importantes para o diagnóstico da cisticercose bovina no immunoblot

Detection of important peptides for bovine cysticercosis diagnosis in immunoblot

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RESUMO

*A dificuldade de se localizar cisticercos em bovinos com infecção discreta torna o diagnóstico tradicional da cisticercose bovina em matadouros um recurso de baixa sensibilidade, o que gera uma demanda de diagnóstico por métodos alternativos como o immunoblot. Para tanto, neste trabalho, foram realizados ensaios de immunoblot a fim de analisar os peptídeos responsáveis pela reação do antígeno vesicular de **Taenia crassiceps**. Foram utilizadas 28 amostras de soro de bovinos comprovadamente negativos e 28 amostras coletadas de bovinos infectados experimentalmente com ovos de **Taenia saginata**. Os resultados dos ensaios de immunoblot com as amostras de soros-controle mencionadas indicaram que os peptídeos de 4-6, 14 e 18kDa destacaram-se entre os demais, mostrando altas taxas de desempenho no diagnóstico da cisticercose bovina e uma aparência diferenciada, com área e largura maiores, ao contrário dos peptídeos de média e alta massa molecular, que se apresentaram sob a forma de linha e com reações inespecíficas. O immunoblot mostrou ter um potencial como uma alternativa de diagnóstico da cisticercose bovina, incluindo sua aplicação em animais vivos, como método auxiliar de diagnóstico em estudos epidemiológicos da doença.*

Palavras-chave: *cisticercose bovina**, Taenia saginata, Taenia crassiceps,** immunoblot, peptídeos.*

ABSTRACT

*The diagnosis of cysticercosis in bovines that presents a discreet infection is committed by the conventional methodology of detection employed in slaughterhouses. This deficiency leads to the development of alternative methods, such as immunoblot, in order to improve the detection of this disease. An immunoblot assay was developed to detect peptides from **Taenia crassiceps** antigen, and it was used to test 56 samples of bovine serum (28 confirmed as negative and 28 from experimentally infected animals with **Taenia saginata** eggs). The peptides 4-6, 14 and 18 kDa showed better performance in bovine cysticercosis diagnosis due to an enhanced appearance, once they showed higher area and wide, contrasting with medium and high molecular weight peptides, that showed unspecific reactions and discreet appearance. The obtained results indicated that immunoblot can represent a potential alternative in bovine cysticercosis diagnosis, including its use in live animals, improving the detection of this disease even in epidemiological studies.*

Key words: *bovine cysticercosis, **Taenia saginata, Taenia crassiceps**, immunoblotting, peptides.*

INTRODUCTION

Bovine cysticercosis is the parasitic zoonosis caused by the larval stage of ***Taenia saginata***, most frequently diagnosed in slaughterhouses, representing the main cause of condemnation of cattle and resulting in losses to the livestock industry (UNGAR et al., 2008). Therefore, effective measures for the diagnosis and control of this disease should be made available.

Considering that routine diagnosis of bovine cysticercosis is based on anatomopathological examination performed during the post-mortem inspection of carcasses and viscera at slaughterhouses, this diagnostic method has low sensitivity, given the difficulty of locating cysticerci in bovine tissues with mild infection, which accounts for the majority of cases detected.

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In this context, it is necessary to combine immunological methods such as ELISA and immunoblotting, which have high sensitivity and specificity for the diagnosis of the disease (MINOZZO et al., 2004; MONTEIRO et al., 2007). These methods also have the advantage of being applicable to the diagnosis of live animals in epidemiological studies (PERALTA et al., 2001).

Although the use of immunoblotting in the diagnosis of bovine cysticercosis is still not widely known, this method has already been successfully used in the diagnosis of porcine and human cysticercosis (TSANG et al., 1989; GEKELER et al., 2002; SATO et al., 2003), using antigenic extracts from larvae of ***Taenia saginata, Taenia solium,*** and ***Taenia crassiceps***. The existence of common peptides among the larvae of these parasites facilitated laboratory assays, allowing the selection, for this purpose, of ***Taenia crassiceps*** antigens, a cestode parasite of foxes whose larval form is naturally found in small rodents and reproduces by budding in the laboratory (VAZ et al., 1997; BUENO et al., 2000). The homogeneity of antigen batches prepared with ***Taenia crassiceps*** larvae and the possibility of maintaining them in the laboratory are advantages of using these antigens over the other two types of antigenic extracts.

Considering that immunoblotting has shown good performance in the diagnosis of porcine and human cysticercosis and that it has not yet been used for the diagnosis of bovine cysticercosis, this study aimed to evaluate the use of this method for detecting peptides important for the diagnosis of bovine cysticercosis, using ***Taenia crassiceps*** antigen.

MATERIAL AND METHODS

In the immunoblot assays, ***Taenia crassiceps*** vesicular antigen was used, along with 28 samples consisting of control sera from 28 animals negative for cysticercosis and 28 control serum samples collected from four cattle experimentally infected with ***Taenia saginata*** eggs at different stages of disease progression (15-day intervals), beginning 90 days after egg inoculation. To confirm that the serum samples had been obtained from definitively positive and negative animals, a thorough anatomopathological examination of the carcasses of these animals was performed after slaughter, using thin incisions to locate the cysticerci.

Parasite Collection

The cattle were inoculated orally by means of a gastric tube with approximately 120,000 ***Taenia saginata*** eggs. After the cysticercosis development period had elapsed, the inoculated cattle were slaughtered after stunning and bleeding, and a thorough anatomopathological examination of the tissues was performed to collect ***T. saginata*** cysticerci.

Taenia crassiceps metacestodes were maintained in BALB/c mice aged between eight and 12 weeks by intraperitoneal inoculation of 10 small parasites. After 90 days, the animals showing increased abdominal volume were euthanized after being anesthetized with ethyl ether, followed by bleeding; the parasites were then removed from the abdominal cavity.

To prepare the vesicular fluid antigen (LVcra), the intact parasites were centrifuged at 35,000 × g for 30 minutes at 4°C, and the pellet was discarded. The protease inhibitor Sigma P7626 (PMSF – phenylmethylsulfonyl fluoride, Sigma Chemical Co., St. Louis, MO, USA) was added to the supernatant at a concentration of 2.5 mM per antigenic extract, thus constituting the LVcra antigen, which was stored at −20°C.

Immunoblot

Separation of the peptides from the ***Taenia crassiceps*** vesicular antigen was performed by polyacrylamide gel electrophoresis (SDS-PAGE), using a discontinuous system according to Laemmli (1970), with a Mini-Protean II apparatus (Bio-Rad Laboratories, Hercules, CA, USA).

The antigen sample (30 μg) was diluted in sample buffer solution (60 mM Trizma, pH 6.8, 2% SDS, 25% glycerol, 14.4 mM 2-mercaptoethanol, and 0.1% bromophenol blue), heated in a water bath at 100°C for five minutes immediately before being applied to the 5% stacking gel (0.5 M Tris-HCl, pH 6.8, containing 0.025% SDS), and separated in a gradient gel ranging from 5 to 20% (1.5 M Tris-HCl buffered solution, pH 8.8, containing 0.025% SDS). A total of 6 μg of antigen per mm was applied to wells measuring 3 cm each. In parallel with sample electrophoresis, the Sigma M 4038 molecular weight marker (Sigma Chemical Co., St. Louis, MO, USA) was used. Electrophoresis was conducted in running buffer solution (25 mM Trizma, 192 mM glycine, 0.1% SDS, pH 8.3) at a voltage of 50 V during stacking and 100 V during separation.

The peptides separated by SDS-PAGE were transferred from the gel to 0.2 μm nitrocellulose

membranes (Millipore, USA), according to the methodology described by TOWBIN et al. (1979), using transfer buffer solution (25 mM Tris-hydroxymethylaminomethane, 192 mM glycine, 20% methanol, pH 8.3). The transfer was performed for 30 minutes at room temperature at a constant voltage of 100 V, followed by another two-hour period at a voltage of 150 V. After transfer, the nitrocellulose membranes were stained in an aqueous solution containing 0.5% Ponceau S.

From the membranes, strips 3 to 4 mm wide were obtained, which were then destained and washed in saline solution (0.15 M NaCl) containing 0.05% Tween-20 and stored in filter paper until they were used in the subsequent test steps. The strips were treated with blocking solution [skim milk, Molico – Nestlé, dissolved at 5% in Tris-saline 10 mM Tris-hydroxymethylaminomethane, 0.15 M NaCl, pH 7.4)] for one hour under slow agitation at room temperature. Serum samples added to the diluent solution (blocking solution diluted 1:5 in Tris-saline) were added to the strips, which were incubated for 14–18 hours at 4°C under slow agitation. After six washes of five minutes each, the strips were incubated again for one hour with appropriately diluted bovine anti-IgG conjugate labeled with peroxidase (A 5295, Sigma Chemical Co., St. Louis, MO, USA). Reactive proteins were visualized with the chromogenic solution (5 mg diaminobenzidine, 1.5% H_2O_2 in PBS, pH 7.2) for approximately two minutes. The strips were then washed with distilled water and dried on filter paper.

After preliminary standardization assays, two positive samples, two negative samples, and one blank control were analyzed in each immunoblot assay (plate).

Data Analysis

The mean frequency of reaction of the different peptides with the control sera from the two groups of cattle was determined according to their predetermined anatomopathological status.

Peptides that reacted only with the positive serum samples were selected. These peptides were provisionally identified as important based on the criteria of location (molecular weight) and appearance recommended by Larralde et al. (1989), and were analyzed using Quantity One software, version 4.6 (Bio-Rad Laboratories, Hercules, CA, USA). Based on their reactivity frequency, the following parameters were determined for each peptide: sensitivity and specificity rates, positive and negative predictive values, and agreement, with the aim of establishing criteria for differentiating serum samples as positive or negative by immunoblotting, as well as defining the peptides important for the diagnosis of bovine cysticercosis.

RESULTS AND DISCUSSION

During the standardization stages of electrophoresis and immunoblotting, serum and conjugate dilutions of 1:25 and 1:2,000, respectively, were selected based on the best results obtained in the preliminary differentiation between positive and negative control sera.

Several peptides were frequently recognized in reactions with the serum samples tested (4–6, 14, 18, 23, 24–26, 34–36, 43–45, 51–56, 60–63, 92–93, 100–106 kDa); however, only the 4–6, 14, and 18 kDa peptides showed diagnostic value. The 4–6, 14, and 18 kDa bands stood out from the others, showing a distinct appearance, with greater area and width (Figure 1). Less prominently, the medium- and high-molecular-weight peptides appeared as lines, an appearance also observed by PINTO et al. (2001) in the diagnosis of porcine cysticercosis.

The best performance rates were observed for the low-molecular-weight peptides, particularly the peptide identified as 14 kDa (Table 1). Using recombinant ***Taenia solium*** antigens, Greene et al. (2000) showed that the 14 kDa peptide is important in the diagnosis of human cysticercosis by the ELISA test, whereas the 18 kDa peptide did not achieve the same results.

Due to the lack of data regarding the use of immunoblotting for the detection of antibodies in cattle, the results of this study were compared with those reported in tests using human and porcine samples. The performance of immunoblotting observed in other studies is similar to that found in the present study, with high rates being reported. GEKELER et al. (2002) found specificity rates ranging from 80 to 82%. In studies of pigs, GONZÁLEZ et al. (1990), PATHAK et al. (1994), and PINTO et al. (2001) found sensitivity and specificity rates ranging from 97 to 100%.

Taking into consideration the public health risk and the economic losses caused by cysticercosis, both to slaughterhouses and cattle producers, sanitary control measures for this zoonosis should be implemented not only at the time of slaughter but also during the production stage. In this regard,

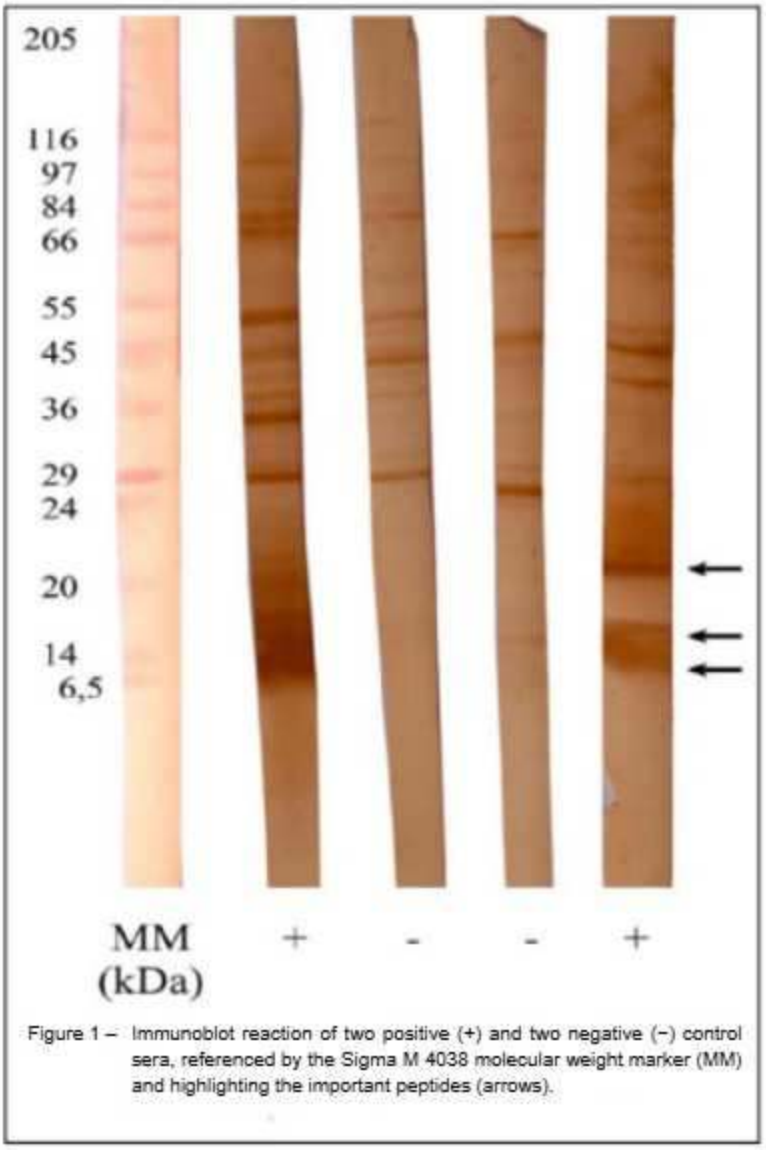


Figure 1 – Immunoblot reaction of two positive (+) and two negative (−) control sera, referenced by the Sigma M 4038 molecular weight marker (MM) and highlighting the important peptides (arrows).

the development of a reliable diagnostic method such as immunoblotting could serve as an alternative for improving inspection procedures at slaughterhouses and epidemiological investigations for tracing cysticercosis outbreaks. However, studies involving variations in the protocol should be conducted to expand the assessment of the diagnostic performance of the reported peptides, as well as the diagnostic potential of different antigens, such as total and membrane antigens of ***Taenia crassiceps***, using immunoblotting.

CONCLUSION

The immunoblot assays performed to evaluate the reactivity of control sera from healthy cattle and cattle affected by cysticercosis with the vesicular fluid antigen of ***Taenia crassiceps*** cysticercus demonstrated the importance of three low-molecular-weight peptides in the diagnosis of cysticercosis in this species. These peptides showed high performance rates in the immunoblot and were identified as having molecular weights of 4–6, 14, and 18 kDa. Immunoblotting proved to be a useful test for the diagnosis of bovine cysticercosis, as had already been demonstrated for the diagnosis of this disease in pigs and humans.

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ETHICS AND BIOSAFETY COMMITTEE

The research project that gave rise to this study was approved by the Ethics Committee of the Department of Veterinary Medicine of the Federal University of Viçosa.

Table 1 – Performance rates (%) of the main reactive peptides in the immunoblot test.

Peptides (kDa)	Performance rates				
	S	E	VP+	VP-	C
100-106	77,8	19,2	51,9	55,6	55,6
92-93	11,1	92,3	50,0	50,0	55,6
60-63	22,2	80,8	57,1	51,7	55,6
51-56	33,3	57,7	50,0	50,0	47,2
43-45	16,7	76,9	42,9	48,3	41,7
37-39	44,4	34,6	42,1	41,1	36,1
34-36	72,2	19,2	50,0	50,0	50,0
24-26	38,9	57,7	46,7	47,6	47,2
23	72,2	38,5	59,1	64,3	63,9
18	75,5	97,5	94,7	79,3	84,4
14	87,5	97,5	95,5	88,5	91,6
4-6	66,7	97,5	94,1	74,2	81,2

S: sensitivity
E: specificity
PPV: positive predictive value
NPV: negative predictive value
C: agreement

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Detecção de peptídeos importantes para o diagnóstico da cisticercose bovina no immunoblot

Detection of important peptides for bovine cysticercosis diagnosis in immunoblot

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RESUMO

*A dificuldade de se localizar cisticercos em bovinos com infecção discreta torna o diagnóstico tradicional da cisticercose bovina em matadouros um recurso de baixa sensibilidade, o que gera uma demanda de diagnóstico por métodos alternativos como o immunoblot. Para tanto, neste trabalho, foram realizados ensaios de immunoblot a fim de analisar os peptídeos responsáveis pela reação do antígeno vesicular de **Taenia crassiceps**. Foram utilizadas 28 amostras de soro de bovinos comprovadamente negativos e 28 amostras coletadas de bovinos infectados experimentalmente com ovos de **Taenia saginata**. Os resultados dos ensaios de immunoblot com as amostras de soros-controle mencionadas indicaram que os peptídeos de 4-6, 14 e 18kDa destacaram-se entre os demais, mostrando altas taxas de desempenho no diagnóstico da cisticercose bovina e uma aparência diferenciada, com área e largura maiores, ao contrário dos peptídeos de média e alta massa molecular, que se apresentaram sob a forma de linha e com reações inespecíficas. O immunoblot mostrou ter um potencial como uma alternativa de diagnóstico da cisticercose bovina, incluindo sua aplicação em animais vivos, como método auxiliar de diagnóstico em estudos epidemiológicos da doença.*

Palavras-chave: *cisticercose bovina, **Taenia saginata, Taenia crassiceps**, immunoblot, peptídeos.*

ABSTRACT

*The diagnosis of cysticercosis in bovines that presents discreet infection is committed by the conventional methodology of detection employed in slaughterhouses. This deficiency leads to the development of alternative methods, such as immunoblot, in order to improve the detection of this disease. An immunoblot assay was developed to detect peptides from **Taenia crassiceps** antigenand it was used to test 56 samples of bovine serum (28 confirmed as negative and 28 from experimentally infected animals with **Taenia saginata** eggs). The peptides 4-6, 14 and 18 kDa showed better performance in bovine cysticercosis diagnosis due to an enhanced appearance, once they showed higher area and wide, contrasting with medium and high molecular weight peptides, that showed unspecific reactions and discreet appearance. The obtained results indicated that immunoblot can represent a potential alternative in bovine cysticercosis diagnosis, including its use in live animals, improving the detection of this disease even in epidemiological studies.*

Key words: *bovine cysticercosis, **Taenia saginata**, **Taenia crassiceps**, immunoblotting, peptides.*

INTRODUÇÃO

A cisticercose bovina é a zoonose parasitária causada pela larva da ***Taenia saginata*** mais freqüentemente diagnosticada em matadouros, representando a principal causa de condenação de bovinos e acarretando prejuízos à pecuária (UNGAR et al., 2008). Assim, medidas eficientes de diagnóstico e controle dessa doença devem ser disponibilizadas.

Considerando que o diagnóstico rotineiro da cisticercose bovina é baseado no exame anátomo-patológico realizado durante a inspeção *post mortem* de carcaças e vísceras em matadouros, observa-se que esse recurso diagnóstico é de baixa sensibilidade, dada a dificuldade de se localizarem cisticercos nos tecidos bovinos com infecção discreta, os quais representam a maioria dos casos encontrados.

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Nesse contexto, faz-se necessária a associação de métodos imunológicos como o ELISA e o immunoblot, que apresentam alta sensibilidade e especificidade para o diagnóstico da doença (MINOZZO et al., 2004; MONTEIRO et al., 2007). Tais métodos apresentam ainda a vantagem de poderem ser utilizados no diagnóstico de animais vivos em estudos epidemiológicos (PERALTA et al., 2001).

Embora o emprego do immunoblot no diagnóstico da cisticercose bovina ainda seja pouco conhecido, esse método já vem sendo utilizado com sucesso no diagnóstico da cisticercose suína e humana (TSANG et. al., 1989; GEKELER et al., 2002; SATO et al., 2003), realizado com extratos antigênicos de larvas de ***Taenia saginata***, ***Taenia solium*** e ***Taenia crassiceps***. A existência de peptídeos comuns entre as larvas dos referidos parasitas facilitou os ensaios laboratoriais, permitindo para essa finalidade a escolha de antígenos de ***Taenia crassiceps***, um cestódeo parasita de raposas, cuja forma larvária é encontrada naturalmente em pequenos roedores e se reproduz por brotamento em laboratório (VAZ et al., 1997; BUENO et al., 2000). A homogeneidade dos lotes antigênicos preparados com larvas de ***Taenia crassiceps*** e a possibilidade de sua manutenção em laboratório são vantagens da utilização destes sobre os outros dois tipos de extratos antigênicos.

Considerando que o immunoblot tem mostrado um bom desempenho no diagnóstico da cisticercose suína e humana e que ainda não vem sendo utilizado para o diagnóstico da cisticercose bovina, pretende-se avaliar o emprego desse método na detecção de peptídeos importantes para o diagnóstico da cisticercose bovina, utilizando o antígeno de ***Taenia crassiceps***.

MATERIAL E MÉTODOS

Nos ensaios de immunoblot, foram utilizados o antígeno vesicular de ***Taenia crassiceps*** e 28 amostras referentes aos soros-controle de 28 animais negativos para cisticercose e 28 amostras de soros-controle coletadas em quatro bovinos experimentalmente infectados com ovos de ***Taenia saginata***, em diferentes fases de evolução da doença (intervalos de 15 dias), a partir dos 90 dias da inoculação dos ovos. Para comprovar se as amostras de soro foram obtidas de animais seguramente positivos e negativos, foi realizado o exame anátomo-patológico minucioso das carcaças desses animais após abate, por meio de incisões delgadas, para localização dos cisticercos.

Obtenção dos parasitas

Os bovinos foram inoculados com auxílio de sonda gástrica, por via oral, com cerca de 120.000 ovos de ***Taenia saginata***. Vencido o período de desenvolvimento da cisticercose, os bovinos inoculados foram abatidos após sua insensibilização e sangria, sendo realizado o exame anátomo-patológico minucioso dos tecidos para a coleta dos cisticercos de ***T. saginata***.

Os metacestódeos de ***Taenia crassiceps*** foram mantidos em camundongos BALB/c com idade entre oito e 12 semanas por inoculação intraperitoneal de 10 parasitas de pequeno tamanho. Após 90 dias, os animais que apresentavam aumento de volume abdominal foram sacrificados sob insensibilização em éter etílico, seguida de sangria; os parasitas foram retirados da cavidade abdominal em seguida.

Na preparação do antígeno de líquido vesicular (LVcra), os parasitas íntegros foram centrifugados a 35.000g por 30 minutos a 4°C, desprezando-se o sedimento. Ao sobrenadante foi adicionado inibidor de protease Sigma P7626 (PMSF - Fluoreto de fenilmetilsulfonil, Sigma Chemical Co., St. Louis, MO, USA) na concentração de 2,5mM de extrato antigênico, constituindo-se assim o antígeno LVcra, que foi conservado a -20°C.

Immunoblot

A separação dos peptídeos do antígeno vesicular de ***Taenia crassiceps*** foi conduzida pela eletroforese em gel de poliacrilamida (SDS-PAGE), realizada em sistema descontínuo segundo Laemmli (1970), no aparelho Mini Protean II (Bio-Rad Laboratories, Hercules, CA, USA). A amostra de antígeno (30µg) foi diluída em solução tampão de amostra (Trizma 60mM, pH6,8, SDS 2%, glicerol 25%, 2-mercaptoetanol, 14,4mM e azul de bromofenol 0,1%), submetida a aquecimento em banho-maria a 100°C por cinco minutos imediatamente antes da sua aplicação no gel de empilhamento a 5% (Tris-HCl 0,5M, pH6,8, contendo 0,025% de SDS) e separada em gel em gradiente entre 5 e 20% (solução tamponada Tris-HCl 1,5 pH 8,8, contendo 0,025% de SDS). Foram aplicados 6 g de antígeno por mm de orifícios medindo 3 cm cada. Paralelamente à eletroforese das amostras, utilizou-se o marcador de massa molecular Sigma M 4038 (Sigma Chemical Co., Louis, MO, USA). A eletroforese foi conduzida em solução tampão de corrida (Trizma 25mM, glicina 192mM, SDS 0,1%, pH 8,3) a uma voltagem de 50V no empilhamento e 100V na separação.

Os peptídeos separados por SDS-PAGE foram transferidos do gel para membranas de

nitrocelulose de 0,2 (Millipore, USA), segundo a metodologia descrita por TOWBIN et al. (1979), utilizando solução tamponada de transferência (Tris-hidroximetilaminoetano 25mM, glicina 192mM, metanol 20%, pH 8,3). A transferência foi realizada durante um período de meia hora, à temperatura ambiente, voltagem constante de 100V e outro período de duas horas com voltagem de 150V. Após a transferência, as membranas de nitrocelulose foram coradas em solução aquosa contendo Ponceau-S a 0,5%.

A partir das membranas, foram obtidas tiras de 3 a 4mm de largura que, em seguida, foram descoradas e lavadas em solução salina (NaCl 0,15M) contendo 0,05% de Tween-20, sendo armazenadas em papel filtro até o momento de sua utilização nas etapas seguintes do teste. As tiras foram tratadas com solução bloqueadora [leite desnatado, Molico – Nestlé, dissolvido a 5% em Tris-salina (Tris-hidroximetilaminoetano 10mM, NaCl 0,15M, pH 7,4)] por uma hora sob agitação lenta à temperatura ambiente. As amostras de soro adicionadas à solução diluidora (Solução bloqueadora diluída a 1:5 em Tris-salina) foram adicionadas às tiras, que foram incubadas por 14-18 horas, a 4ºC, sob agitação lenta. Após seis lavagens, cinco minutos cada, as tiras foram novamente incubadas por uma hora com o conjugado anti-IgG de bovino marcado com peroxidase, devidamente diluído (A 5295, Sigma Chemical Co., St. Louis, MO, USA). As proteínas reativas foram evidenciadas com a solução cromógena (Diaminobenzidina 5mg, H_2O_2 1,5% em PBS pH 7,2) por cerca de dois minutos. Em seguida, as tiras foram lavadas com água destilada e secas em papel filtro.

Após ensaios preliminares de padronização, foram analisadas em cada ensaio (placa) do immunoblot: duas amostras positivas, duas negativas e um controle branco.

Análise de dados

Foi determinada a freqüência média de reação dos diferentes peptídeos com os soros-controle dos dois grupos de bovinos, conforme sua condição anátomo-patológica pré-determinada.

Foram selecionados os peptídeos que reagiram somente com as amostras de soros positivas. Esses peptídeos foram provisoriamente identificados como importantes, observando os critérios de localização (massa molecular) e aparência, recomendados por Larralde et al. (1989) e analisados pelo Programa Quantity One, versão 4,6 (Bio-Rad Laboratories, Hercules, CA, USA). Em função da sua freqüência de reatividade, foram determinados os seguintes parâmetros para cada peptídeo: as taxas de sensibilidade e especificidade, os valores preditivos positivos e negativos e a concordância, visando estabelecer os critérios para diferenciação das amostras de soros como positivas ou negativas ao immunoblot, bem como definir os peptídeos importantes para o diagnóstico da cisticercose bovina.

RESULTADOS E DISCUSSÃO

Nas etapas de padronização da eletroforese e do immunoblot, optou-se por utilizar as concentrações de 1:25 para os soros e 1:2000 de conjugados em função dos melhores resultados obtidos na diferenciação preliminar entre soros-controle positivos e negativos.

Diversos peptídeos foram freqüentemente reconhecidos nas reações com as amostras de soros testadas (4-6, 14, 18, 23, 24-26, 34-36, 43-45, 51-56, 60-63, 92-93, 100-106kDa); entretanto, apenas os peptídeos de 4-6, 14 e 18kDa apresentaram valor diagnóstico. As bandas de 4-6, 14 e 18kDa destacaram-se entre as demais, mostrando uma aparência diferenciada, com área e largura maiores (Figura 1). Com menor destaque, os peptídeos de média e alta massa molecular apresentaram-se sob a forma de linha, aparência também observada por PINTO et al. (2001) no diagnóstico da cisticercose suína.

As melhores taxas de desempenho foram observadas para os peptídeos de baixa massa molecular, principalmente do peptídeo identificado como 14kDa (Tabela 1). Utilizando antígenos recombinantes de ***Taenia solium***, Greene et al. (2000) mostraram que o peptídeo de 14kDa é importante no diagnóstico da cisticercose humana pelo teste ELISA, não obtendo mesmo êxito com o peptídeo de18kDa.

Em virtude da falta de dados referentes à utilização do immunoblot na pesquisa de anticorpos em bovinos, foram comparados os resultados desta pesquisa com os reportados em testes com amostras humanas e suínas. O desempenho do immunoblot verificado em outras pesquisas é semelhante ao mostrado nesta pesquisa, reportando altas taxas. GEKELER et al. (2002) encontraram taxas de especificidade variando entre 80 e 82%. Examinando suínos, GONZÁLEZ et al. (1990), PATHAK et al. (1994) e PINTO et al. (2001) encontraram taxas de sensibilidade e especificidade entre 97 e 100%.

Levando em consideração o risco para saúde pública e os prejuízos econômicos da cisticercose, tanto para os matadouros, quanto para os pecuaristas, medidas de controle sanitário dessa zoonose devem ser tomadas não só no momento do abate, mas também na fase de produção. Nesse sentido,

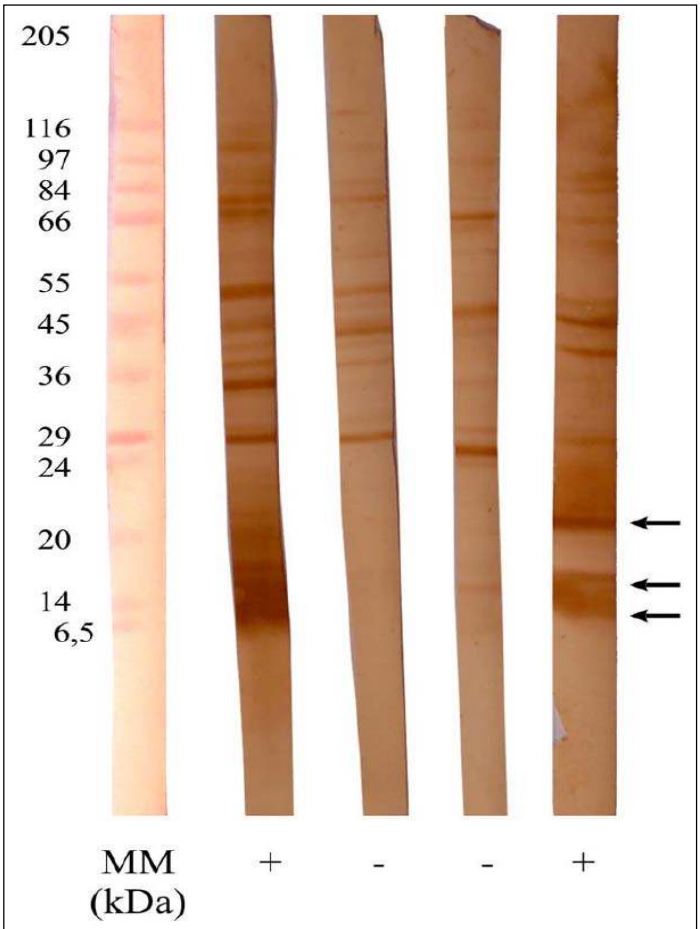


Figura 1 - Reação do immunoblot de dois soros-controle positivos (+) e dois negativos (-), referenciada pelo marcador de massa molecular Sigma M 4038 (MM) e realçando os peptídeos importantes (setas).

o desenvolvimento de um método de diagnóstico confiável como o immunoblot poderia servir como alternativa para o aperfeiçoamento das ações de inspeção nos matadouros e das investigações epidemiológicas na rastreabilidade dos focos de cisticercose. Entretanto, pesquisas com variações no protocolo devem ser realizadas visando ampliar a avaliação do desempenho diagnóstico dos peptídeos relatados, bem como do potencial diagnóstico de diferentes antígenos, como o total e de membrana de ***Taenia crassiceps***, empregando o immunoblot

CONCLUSÃO

Os ensaios de immunoblot realizados na avaliação da reatividade de soros-controle de bovinos sadios e acometidos de cisticercose com o antígeno do líquido vesicular de cisticercos de ***Taenia crassiceps*** evidenciaram a importância de três peptídeos de baixa massa molecular no diagnóstico da cisticercose nessa espécie. Os referidos peptídeos apresentaram altas taxas de desempenho no immunoblot e foram identificados com as massas moleculares de 4-6, 14 e 18kda. O immunoblot mostrou ser um teste útil no diagnóstico da cisticercose bovina, como já havia sido comprovado no diagnóstico dessa doença em suínos e humanos.

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COMITÊ DE ÉTICA E BIOSSEGURANÇA

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Tabela 1 - Taxas de desempenho (%) dos principais peptídeos reativos no teste do immunoblot.

Peptídeos (kda)	----------Taxas de desempenho----------				
	S	E	VP+	VP-	C
100-106	77,8	19,2	51,9	55,6	55,6
92-93	11,1	92,3	50,0	50,0	55,6
60-63	22,2	80,8	57,1	51,7	55,6
51-56	33,3	57,7	50,0	50,0	47,2
43-45	16,7	76,9	42,9	48,3	41,7
37-39	44,4	34,6	42,1	41,1	36,1
34-36	72,2	19,2	50,0	50,0	50,0
24-26	38,9	57,7	46,7	47,6	47,2
23	72,2	38,5	59,1	64,3	63,9
18	75,5	97,5	94,7	79,3	84,4
14	87,5	97,5	95,5	88,5	91,6
4-6	66,7	97,5	94,1	74,2	81,2

S: sensibilidade
E: especificidade
VP+: valor preditivo positivo
VP-: valor preditivo negativo
C: concordância

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Antiviral potential of quercetin in canine parvovirus

[Potencial antiviral da quercetina sobre o parvovírus canino]

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RESUMO

Avaliou-se o efeito do flavonoide quercetina na replicação do parvovírus canino *in vitro* por meio do ensaio de determinação da atividade virucida (ensaio 1), ensaio de determinação da atividade sobre a célula (ensaio 2) e ensaio de tempo de adição das drogas em diferentes etapas do ciclo replicativo viral (ensaio 3). A quercetina apresentou significante atividade antiviral, com valores máximos de redução do título viral de 96,3% no ensaio 1, 90% no ensaio 2 e 90% no ensaio 3. Os efeitos mais expressivos ocorreram nas etapas de adsorção e penetração viral. Os resultados deste trabalho sugerem a importância da quercetina para a medicina veterinária.

Palavras-chave: cão, parvovírus, quercetina, antiviral

ABSTRACT

The in vitro effect of the flavonoid quercetin against canine parvovirus was evaluated. The antiviral activity of quercetin was evaluated by determining the virucidal activity (assay 1), determining the activity on the cell (assay 2), and using the time of addition assay to test the inhibition of the viral replication cycle (assay 3). Quercetin showed significant antiviral activity, with maximum viral titer reduction of 96.3% in assay 1, 90% in assay 2, and 90% in assay 3. The most expressive effects occurred in the stages of viral adsorption and penetration. The results show the importance of quercetin for veterinary medicine.

Keywords: dog, parvovirus, quercetin, antiviral

INTRODUCTION

Canine parvovirus – *canine parvovirus* (CPV) – was first identified in 1978 in the United States (Appel et al., 1979) and was designated CPV-2. In Brazil, infections caused by canine parvovirus have been reported since 1980 (Hagiwara et al., 1980). CPV is a non-enveloped, single-stranded DNA virus with icosahedral symmetry. Parvovirus replication is generally restricted to the nucleus and dependent on cellular functions. The DNA polymerase responsible for the synthesis of the complementary strand of this virus is a cellular polymerase expressed in mammalian cells only during the S phase of the cell cycle (Berns, 1990). Thus, parvoviruses normally exhibit tropism for highly mitotically active tissues, such as the intestinal epithelium, bone marrow, and lymphoid tissues (Url and Schmidt, 2005).

CPV is responsible for the viral disease with the highest incidence of hemorrhagic enteritis in dogs (Carmichael and Binn, 1981). CPV is disseminated by the fecal-oral route from infected dogs to susceptible dogs and reaches high titers in the feces of infected animals (Pollock, 1982; Carmichael, 1994; Decaro et al., 2005). Within three to seven days after infection, infected dogs develop acute gastroenteritis characterized by loss of appetite, vomiting, fever, hemorrhagic diarrhea, and leukopenia (Decaro et al., 2007a).

In young dogs, most protection against CPV is provided by natural passive immunization.

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After the decline in antibody titers, dogs become highly susceptible to infection. Prevention of canine parvovirus infection is achieved through vaccination of pregnant bitches and puppies after six weeks of age. Existing therapies only provide supportive care and consist mainly of the administration of fluids and electrolytes and antibiotic therapy to control secondary bacterial infections (Martin et al., 2002). In addition to the lack of effective therapy against CPV, vaccination may also fail. Decaro et al. (2007b) reported the appearance of clinical signs associated with parvovirus infection in recently vaccinated animals. According to these authors, this may be due to reversion of the virulence of the modified live viruses contained in some vaccines.

Quercetin is one of the flavonoids found in greatest abundance in nature (Harborne and Williams, 2000). In addition to antioxidant properties, quercetin also has antiviral activity related to the ability of this compound to bind to envelope glycoproteins or the viral capsid, thereby preventing virus attachment and penetration into the cell. Quercetin may also reduce viral replication by interfering with viral DNA synthesis (Formica and Regelson, 1995).

Research into effective and safe drugs against this virus aims to meet the growing demand in veterinary practice for therapeutic success in combating canine parvovirus infection. The objective of this study was to evaluate the *in vitro* antiviral activity of the flavonoid quercetin against CPV.

MATERIAL AND METHODS

For the *in vitro* assays, feline kidney cell line (CRFK) cells were used. The cells were maintained in minimum essential medium (MEM) (SIGMA-ALDRICH) containing penicillin, 1.6 mg/L (CULTILAB), and streptomycin, 0.4 mg/L (CULTILAB), supplemented with 10% fetal bovine serum (CULTILAB). A canine parvovirus vaccine strain, Cornell-780916-80/ATCC, obtained from Laboratório Hertape Ltda., was used. Quercetin [3,3',4',5,6-Pentahydroxyflavone] (quercetin dihydrate), purchased from SIGMA-ALDRICH, was prepared at a stock concentration of 10 mg/mL and stored at −20°C.

The viruses were inoculated into semiconfluent monolayers of CRFK cells, and after observation of the cytopathic effect (CPE), the cells were frozen and thawed twice and centrifuged at 500g for 10 minutes. The supernatant was collected and aliquoted (stock). This procedure was repeated until the desired viral titer was reached. Viral stocks were titrated by the TCID50 method, as described by Reed and Muench (1938).

Monolayers of CRFK cells with semiconfluent cell layers in 96-well microplates were treated with quercetin concentrations ranging from 1 to 90 µg/mL and incubated in an incubator at 37°C in an atmosphere of 5% CO_2. The microplates were monitored daily by light microscopy for four days. Cytotoxicity was determined based on effects on cell morphology and viability (loss of the monolayer, granulation, and cytoplasmic vacuolization) compared with the appearance of untreated cells (control). Cytotoxicity was also determined by the colorimetric method based on the reduction of 3-[4,5-dimethylthiazol-2 -yl]-2, -diphenyltetrazolium bromide (MTT) (SIGMA-ALDRICH) by mitochondrial enzymes (Mosmann, 1983). On the fourth day after incubation with quercetin, the cells were washed twice with phosphate-buffered saline (PBS), pH 7.2, and MTT, 0.5 mg/mL, was added. The cells were incubated for four hours in an incubator at 37°C in an atmosphere of 5% CO_2. Subsequently, the formed salt was solubilized by adding isopropanol (SIGMA-ALDRICH)-0.04 N HCl. Optical density (OD550) was determined by spectrophotometry. The percentage of viable treated cells was calculated relative to the untreated control (% of cells = ODexp/ODcontrol cell × 100). The CT50, defined as the concentration required to reduce optical density by 50%, was determined. Based on this experiment, the maximum non-toxic concentration (MNTC) for the cells was determined. For each concentration of each compound and for the control, six wells were evaluated, and the results were presented as the mean of these values.

To evaluate virucidal activity (assay 1), the viruses were incubated with quercetin at a

concentration that did not exceed the maximum non-toxic concentration. At zero, 15, 30, 45, and 60 minutes after incubation, an aliquot of this suspension was titrated. Antiviral activity was determined by the reduction in viral titer relative to the control and assessed by the reduction of CPE in infected cells (Gravina et al., 2010). As the virus control, an aliquot of CPV subjected to the incubation periods was used and titrated at each step; as the substance control, quercetin was incubated at the final concentration used. Inhibition greater than 1 log (90% inhibition) was considered significant.

In assay 2, the antiviral activity in cells pre-incubated with the compound was evaluated. Thus, viral infectivity was assessed based on possible cellular modifications induced by quercetin that could result in cellular resistance to the virus. For this purpose, monolayers of semiconfluent cells in 96-well microplates were incubated for 1 h with quercetin at different concentrations below the maximum non-toxic concentration. After the incubation period, the cells were washed twice with PBS and the viruses were inoculated. Antiviral activity was evaluated by the reduction in CPE of viruses inoculated into treated cell monolayers compared with viruses inoculated into untreated cell monolayers (control). Inhibition greater than 1 log was considered significant.

In assay 3, the inhibitory action of the compound during the viral replication cycle was investigated according to a modified method of Serkedjieva and Ivancheva (1999). The antiviral effect of quercetin was evaluated by adding the substance at different times relative to viral infection. Semiconfluent cell monolayers were incubated with MEM or MEM containing quercetin for 1 h (−1 h: cell pretreatment), washed twice with PBS, and subsequently inoculated with virus dilutions (10–10^7 TCID50/mL). During adsorption for 1 h at 4°C, a temperature that prevents viral internalization, other plates with semiconfluent cells were infected with virus dilutions (10–10^7 TCID50/mL) and treated with the compound (0 h: effect on adsorption). Another fraction of cells infected with CPV (10–10^7 TCID50/mL) and not treated was incubated at 37°C with MEM containing the compound for 1 h (1 h: effect on penetration). Two hours after viral infection, another portion of cells infected with CPV (10–10^7 TCID50/mL) was treated with the compound diluted in MEM (2 h: effect after viral infection). The antiviral activity at all stages was evaluated after 72 hours of incubation at 37°C and 5% CO_2 by determining the viral titer, calculated using the method of Reed and Muench (1938). Inhibition greater than 1 log (90% inhibition) was considered significant.

RESULTS AND DISCUSSION

The MNTC of quercetin was determined by combining microscopic observation of cell morphology with measurement of the viability of these same cells as determined by the MTT assay. For this purpose, quercetin was incubated with semiconfluent CRFK monolayers, and changes in the cells were observed over a four-day period by light microscopy. After four days of incubation, cell viability was also evaluated using the colorimetric method based on the reduction of the tetrazolium salt (MTT) by viable cells. This made it possible to determine a maximum working concentration of 5 µg/mL. Above this concentration, cytoplasmic vacuolization, cell death, and detachment of the cell monolayer were observed.

Cytotoxicity testing of substances with antiviral potential in *in vitro* research is important for distinguishing cytotoxic effects from antiviral effects (Schnitzler et al., 2008). This test is also important for assessing the toxicity of new compounds in the early stages of drug development (Putnam et al., 2002), since the balance between the pharmacological and toxicological effects of a compound is an essential requirement for its applicability as a future therapeutic agent (Melo et al., 2002).

The results of antiviral activity were expressed through the identification of CPE and reduction in viral titer. In the virucidal activity assay (assay 1), it was observed that the viral titer varied from time 0 h onward, with a maximum reduction of 96.3% in the titer (Fig. 1). The concentration of quercetin incubated with the virus was 3 µg/mL.

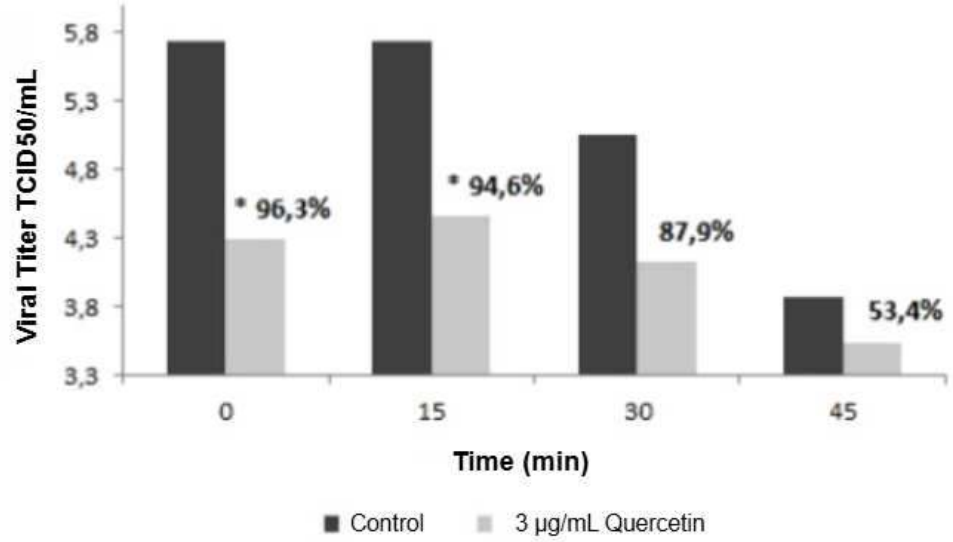


Figure 1. Virucidal activity of quercetin (3 µg/mL) against canine parvovirus evaluated at different times (0, 15, 30, and 45 minutes) – assay 1. Values correspond to the percentage reduction in viral titer relative to the control. * Significant inhibition (≥1 log, 90%).

In the assay for determining activity on cells (assay 2), the concentrations used were 0.5 µg/mL, 1 µg/mL, and 1.5 µg/mL. A significant and dose-dependent reduction in viral titer was observed (Fig. 2). There was a maximum reduction of 90% in viral titer at a quercetin concentration of 1.5 µg/mL.

Quercetin may bind to cellular receptors or other molecular structures, thereby causing long-lasting cellular modifications that decrease infectivity through cellular resistance to the virus, even after the treatment dilutions have been removed.

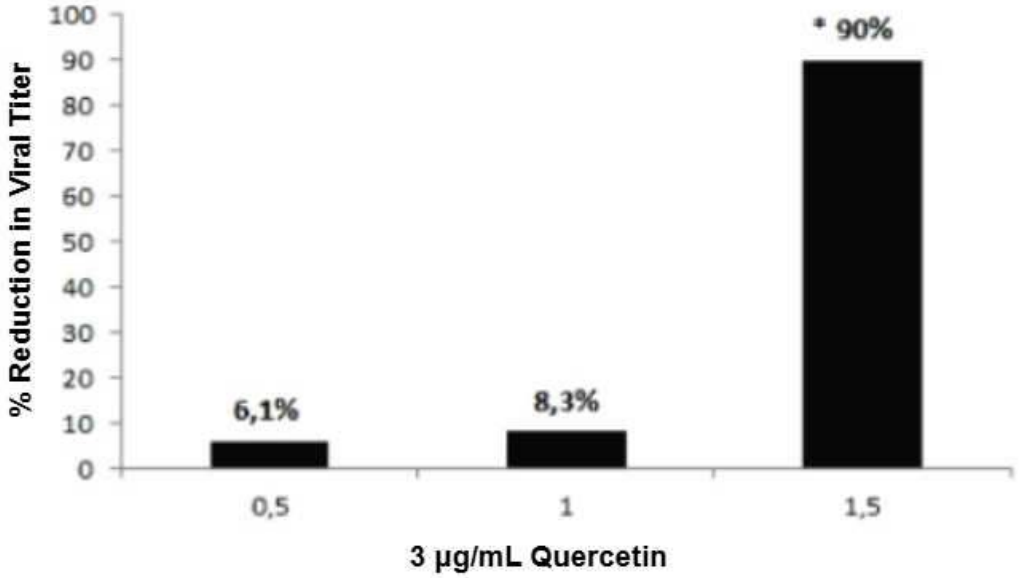


Figure 2. Effect of the addition of quercetin (0.5, 1, and 1.5 µg/mL) to CRFK cells before inoculation with canine parvovirus – assay 2. Values correspond to the percentage reduction in viral titer relative to the control. * Significant inhibition (≥1 log, 90%).

The antiviral activity of quercetin may be related to mechanisms involved in virus entry into the cell. The destabilization of viral particles by quercetin may, in some way, occur at viral receptors, preventing the virus from binding to the target cell.

To better evaluate the interference of quercetin with the replicative mechanisms of CPV, the third assay was performed. In this assay, quercetin was incubated at a concentration of 2.0 µg/mL at each step of viral infection, that is, before inoculation (−1 h), at the time of adsorption (0 h), at the time of penetration (1 h), and after virus entry (2 h). The test showed a maximum reduction of 90% in viral titer at the penetration stage (1 h); however, the reduction percentages were also expressive for the adsorption (0 h) and post-infection (2 h) stages, although not significant, considering the minimum criterion of a 90% reduction in viral titer (Fig. 3). These results indicate that, in addition to having virucidal activity, quercetin may, respectively, interfere with virus binding to its cellular receptor and with the internalization process in cells. By inhibiting the process of viral penetration into cells, the antiviral activity demonstrated by quercetin allows a reduction in the number of newly infected cells, control of viral spread, and formation of new progeny.

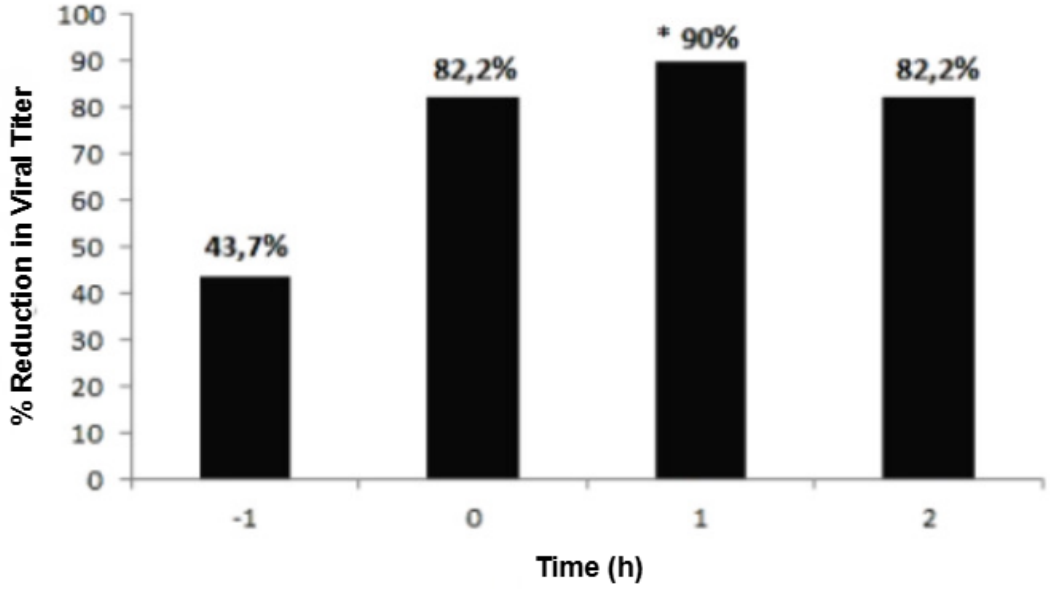


Figure 3. Inhibitory effects of the addition of quercetin on different stages of the canine parvovirus replication cycle. Quercetin (2 µg/mL) was added at different times: −1 h (pretreatment effect), 0 h (effect on adsorption), 1 h (effect on penetration), and 2 h (post-infection effect). Values corresponding to the percentage reduction in viral titer relative to the control. * Significant inhibition (≥1 log, 90%).

The assays demonstrated the potential of quercetin to act on the structure of CPV. This characterizes quercetin as a possible active compound against CPV, with antiviral effects already reported against other viruses, such as HHV-1 and HHV-2 (Chiang et al., 2003) and EHV-1 (Gravina et al., 2010).

CONCLUSIONS

The present study demonstrates that the flavonoid quercetin exhibited *in vitro* antiviral properties against canine parvovirus. The virucidal activity of quercetin and its inhibitory effect on the early stages of canine parvovirus replication may be related to direct virus inactivation through the binding of this compound to viral structures essential for infection. Quercetin also interfered with viral infectivity by inducing the cells into a state of lower susceptibility to the virus. These results suggest the potential use of this flavonoid as a candidate therapeutic agent for the control of canine parvoviral disease.

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Potencial antiviral da quercetina sobre o parvovírus canino

[*Antiviral potencial of quercetin in canine parvovirus*]

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RESUMO

Avaliou-se o efeito do flavonoide quercetina na replicação do parvovírus canino *in vitro* por meio do ensaio de determinação da atividade virucida (ensaio 1), ensaio de determinação da atividade sobre a célula (ensaio 2) e ensaio de tempo de adição das drogas em diferentes etapas do ciclo replicativo viral (ensaio 3). A quercetina apresentou significante atividade antiviral, com valores máximos de redução do título viral de 96,3% no ensaio 1, 90% no ensaio 2 e 90% no ensaio 3. Os efeitos mais expressivos ocorreram nas etapas de adsorção e penetração viral. Os resultados deste trabalho sugerem a importância da quercetina para a medicina veterinária.

Palavras-chave: cão, parvovírus, quercetina, antiviral

ABSTRACT

The in vitro *effect of the flavonoid quercetin against canine parvovirus was evaluated. The antiviral activity of quercetin was evaluated by determining the virucidal activity (assay 1), determining the activity on the cell (assay 2) and using the time of addition assay to test the inhibition of the viral replication cycle (assay 3). Quercetin showed a significant antiviral activity, with maximum viral titer reduction of 96.3% in assay 1, 90% in assay 2 and 90% in assay 3. The most expressive effects occurred in the stages of viral adsorption and penetration. The results show the importance of quercetin for veterinary medicine.*

Keywords: dog, parvovirus, quercetin, antiviral

INTRODUÇÃO

O parvovírus canino – *canine parvovirus* (CPV) – foi primeiramente identificado em 1978 nos Estados Unidos (Appel *et al*., 1979) e denominado CPV 2. No Brasil, há relatos de infecções causadas pelo parvovírus canino desde 1980 (Hagiwara *et al*., 1980). O CPV é um vírus não envelopado, fita simples de DNA e possui simetria icosaédrica. Geralmente, a replicação do parvovírus é restrita ao núcleo e dependente das funções celulares. A DNA polimerase, responsável pela síntese da fita complementar desse vírus, é uma polimerase celular expressa em células de mamíferos somente durante a fase S do ciclo celular (Berns, 1990). Desse modo, os parvovírus normalmente desenvolvem tropismo por tecidos altamente ativos mitoticamente, tais como epitélio intestinal, medula óssea e tecidos linfoides (Url e Schmidt, 2005).

O CPV é responsável pela doença viral de maior incidência de enterite hemorrágica em cães (Carmichael e Binn, 1981). A disseminação do CPV ocorre pela via fecal-oral a partir de cães infectados para cães susceptíveis e alcança altos títulos nas fezes dos animais infectados (Pollock, 1982; Carmichael, 1994; Decaro *et al*., 2005). No intervalo de três a sete dias após a infecção, os cães infectados desenvolvem gastroenterite aguda, caracterizada por perda de apetite, vômitos, febre, diarreia hemorrágica e leucopenia (Decaro *et al*., 2007a).

Em cães jovens, a maior parte da proteção contra o CPV corresponde à imunização passiva

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natural. Após o declínio do título desses anticorpos, os cães se tornam altamente susceptíveis à infecção. A prevenção para a parvovirose canina ocorre mediante vacinação das cadelas prenhes e dos filhotes após seis semanas de idade. As terapias existentes servem apenas para suporte do animal e consistem principalmente na administração de fluidos e eletrólitos e antibioticoterapia para controle de infecções bacterianas secundárias (Martin *et al*., 2002). Além da ausência de terapêutica eficiente contra o CPV, a vacinação também pode apresentar falhas. Decaro *et al*. (2007b) relataram o aparecimento de sinais clínicos relacionados com a parvovirose em animais recém-vacinados. De acordo com estes autores, isto pode ser devido à reversão da virulência dos vírus vivos modificados contidos em algumas vacinas.

A quercetina é um dos flavonoides encontrados em maior abundância na natureza (Harborne e Williams, 2000). Além de propriedades antioxidantes, a quercetina também possui atividade antiviral relacionada à capacidade desse composto de se ligar a glicoproteínas do envelope ou ao capsídeo viral, inviabilizando a ligação e a penetração do vírus na célula. A ação da quercetina pode resultar também na redução da replicação ao interferir na síntese do DNA viral (Formica e Regelson, 1995).

A pesquisa de fármacos eficazes e seguros contra esse vírus visa atender à demanda crescente na clínica veterinária pelo sucesso terapêutico no combate à parvovirose. O objetivo deste trabalho consistiu na avaliação *in vitro* da atividade antiviral do flavonoide quercetina contra o CPV.

MATERIAL E MÉTODOS

Para a realização dos ensaios *in vitro,* foram utilizadas células de linhagem de rins de felino (CRFK). As células foram mantidas em meio essencial mínimo (MEM) (SIGMA-ALDRICH) contendo penicilina, 1,6mg/L (CULTILAB), estreptomicina, 0,4mg/L (CULTILAB), suplementadas com soro fetal bovino 10% (CULTILAB). Foi utilizada uma cepa vacinal de parvovírus canino Cornell-780916-80/ATCC obtida do Laboratório Hertape Ltda. A quercetina [3,3',4',5,6-Pentahydroxyflavone] (*quercetin dihydrate*), adquirida da empresa SIGMA-ALDRICH, foi preparada a uma concentração estoque de 10mg/mL e armazenada a -20ºC.

Os vírus foram inoculados em monocamadas semiconfluentes de células CRFK, e após a observação do efeito citopático (ECP), as células foram congeladas e descongeladas duas vezes e centrifugadas a 500*g* por 10 minutos. O sobrenadante foi coletado e aliquotado (estoque). Esse procedimento foi realizado até que se alcançasse o título viral desejado. Os estoques virais foram titulados pelo método de $TCID_{50}$, como descrito por Reed e Muench (1938).

Monocamadas das células CRFK com tapetes celulares semiconfluentes em microplacas de 96 poços foram tratadas com concentrações de quercetina que variaram de 1 a 90µg/mL e incubadas em estufa a 37ºC e atmosfera de 5% de CO_2. As microplacas foram monitoradas sob microscopia óptica, diariamente, durante quatro dias. A citotoxicidade foi determinada pelos efeitos na morfologia e viabilidade celular (perda da monocamada, granulação e vacuolização no citoplasma) em relação ao aspecto das células não tratadas (controle). A citotoxicidade também foi determinada pelo método colorimétrico baseado na redução do 3-[4,5-dimetiltiazol-2-il]-2,-difeniltetrazolium brometo (MTT) (SIGMA-ALDRICH) por enzimas mitocondriais (Mosmann, 1983). No quarto dia após incubação com a quercetina, às células lavadas com tampão fosfato (PBS), pH 7,2, por duas vezes, foi adicionado o MTT, 0,5 mg/mL. As células foram incubadas por quatro horas em estufa a 37ºC e atmosfera de 5% de CO_2. Posteriormente, o sal formado foi solubilizado pela adição de isopropanol (SIGMA-ALDRICH)-HCl 0,04 N. A densidade óptica (OD_{550}) foi determinada por espectrofotometria. A porcentagem de células tratadas viáveis foi calculada em relação ao controle não tratado (% de células = OD_{exp}/ $OD_{célula\ controle}$ x 100). Foi determinada a CT_{50}, que é a concentração necessária para reduzir a densidade óptica em 50%. Com base neste experimento, foi determinada a concentração máxima não tóxica (CMNT) para as células. Para cada concentração de cada composto e para o controle, seis poços foram avaliados, e os resultados foram apresentados como a média desses valores.

Para avaliação do efeito virucida (ensaio 1), os vírus foram incubados com a quercetina em

concentração que não excedeu a máxima não tóxica. Nos tempos zero, 15, 30, 45 e 60 minutos após incubação, uma alíquota dessa suspensão foi titulada. A atividade antiviral foi determinada pela redução no título viral em relação ao controle e visualizada pela redução do ECP nas células infectadas (Gravina *et al*., 2010). Como controle de vírus, utilizou-se uma alíquota do CPV submetido aos tempos de incubação, titulados a cada passo, e como controle da substância, incubou-se a quercetina na concentração final utilizada. Foi considerada inibição significativa aquela superior a 1 log (90% de inibição).

No ensaio 2, avaliou-se a determinação da atividade antiviral em células pré-incubadas com o composto. Desta forma, a infectividade viral foi avaliada segundo prováveis modificações celulares promovidas pela quercetina que possam resultar em resistência celular ao vírus. Para isso, monocamadas das células semiconfluentes em microplacas de 96 poços foram incubadas por 1h com a quercetina em diferentes concentrações, inferiores à concentração máxima não tóxica. Após o tempo de incubação, as células foram lavadas por duas vezes com PBS e os vírus foram inoculados. A atividade antiviral foi avaliada pela redução no ECP dos vírus inoculados em monocamadas celulares tratadas em relação aos vírus inoculados em monocamadas celulares não tratadas (controle). Foi considerada inibição significativa aquela superior a 1 log.

No ensaio 3, foi investigada a ação inibitória do composto durante o ciclo replicativo viral, segundo método modificado de Serkedjieva e Ivancheva (1999). O efeito antiviral da quercetina foi avaliado mediante a adição dessa substância em diferentes tempos relativos à infecção viral. Monocamadas semiconfluentes de células foram incubadas com MEM ou MEM contendo a quercetina por 1 h (-1 h: pré-tratamento das células), lavadas duas vezes com PBS e posteriormente inoculadas com diluições do vírus (10-10^7 $TCID_{50}$/mL). Durante a adsorção por 1 h a 4°C, temperatura que previne a internalização viral, outras placas com células semiconfluentes foram infectadas com diluições do vírus (10-10^7 $TCID_{50}$/mL) e tratadas com o composto (0 h: efeito na adsorção). Outra fração de células infectadas com CPV (10-10^7 $TCID_{50}$/mL) não tratadas foi incubada a 37ºC com MEM contendo o composto por 1 h (1 h: efeito na penetração). Duas horas após a infecção viral, uma outra parcela de células infectadas com CPV (10-10^7 $TCID_{50}$/mL) foi tratada com o composto diluído em MEM (2h: efeito após a infecção viral). A atividade antiviral de todas as fases foi avaliada após 72 horas de incubação a 37ºC e 5% de CO_2, pela determinação do título viral, calculado pelo método de Reed e Muench (1938). Foi considerada inibição significativa aquela superior a 1 log (90% de inibição).

RESULTADOS E DISCUSSÃO

A CMNT da quercetina foi determinada pela associação da observação microscópica da morfologia celular, com a mensuração da viabilidade dessas mesmas células determinada pelo ensaio de MTT. Com esse objetivo, a quercetina foi incubada em monocamadas semiconfluentes de CRFK e a observação das alterações celulares foi feita por um período de quatro dias por microscopia óptica. Após quatro dias de incubação, a viabilidade celular também foi avaliada pelo método colorimétrico baseado na redução do sal de tetrazolium (MTT) pelas células viáveis. Com isso, foi possível determinar a concentração máxima de trabalho de 5 μg/mL. Acima dessa concentração, foi observada vacuolização do citoplasma, morte e desprendimento do tapete celular.

O teste de citotoxicidade para as substâncias com potencial antiviral na pesquisa *in vitro* é importante para discriminar o efeito citotóxico do efeito antiviral (Schnitzler *et al*., 2008). Esse teste também é importante para verificar a toxicidade de novos compostos nos estágios iniciais de desenvolvimento de fármacos (Putnam *et al*., 2002), pois o equilíbrio entre os efeitos farmacológicos e toxicológicos de um composto é um requisito essencial para sua aplicabilidade como futuro agente terapêutico (Melo *et al.,* 2002).

Os resultados da atividade antiviral foram expressos através da identificação do ECP e redução do título viral. No ensaio de determinação da atividade virucida (ensaio 1), observou-se que o título viral sofreu variação a partir do tempo 0 h, com redução máxima de 96,3% do título (Fig. 1). A concentração de quercetina incubada com o vírus foi de 3μg/mL.

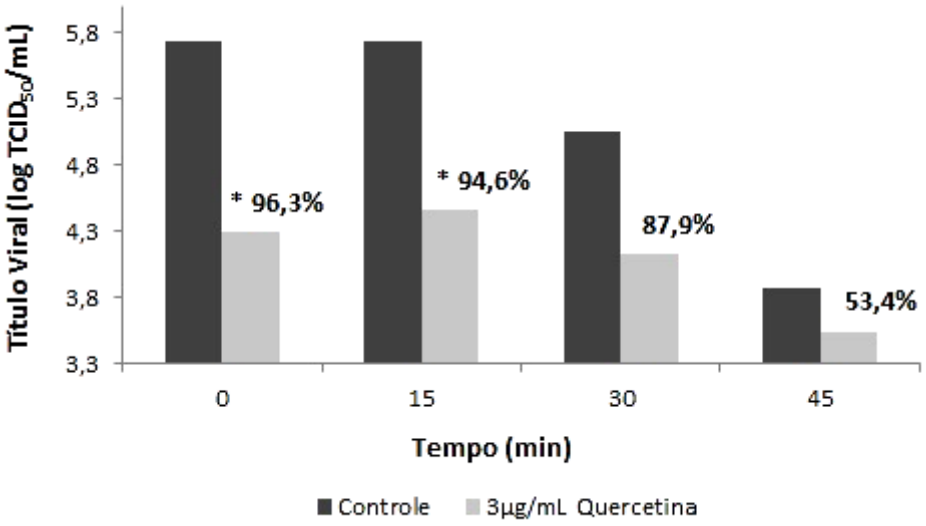


Figura 1. Atividade virucida da quercetina (3µg/mL) sobre o parvovírus canino avaliada em diferentes tempos (0, 15, 30 e 45 minutos) – ensaio 1. Valores correspondentes à porcentagem de redução do título viral em relação ao controle. * Inibição significativa (≥1 log, 90%).

No ensaio de determinação de atividade sobre as células (ensaio 2), as concentrações utilizadas foram de 0,5µg/mL, 1µg/mL e 1,5µg/mL. Observou-se redução do título viral significativa e dose-dependente (Fig. 2). Houve redução máxima de 90% do título viral para a concentração de 1,5µg/mL de quercetina. Possivelmente, a quercetina se liga a receptores celulares ou a outras estruturas moleculares, causando, assim, modificações celulares duradouras, de forma a diminuir a infectividade por resistência celular ao vírus, mesmo após a retirada das diluições dos tratamentos.

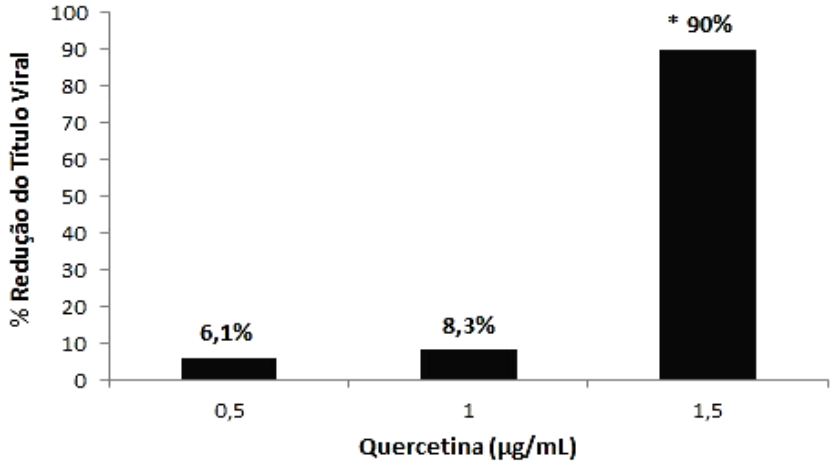


Figura 2. Efeito da adição da quercetina (0,5, 1 e 1,5µg/mL) sobre células CRFK antes da inoculação pelo parvovírus canino – ensaio 2. Valores correspondentes à porcentagem de redução do título viral em relação ao controle. * Inibição significativa (≥1 log, 90%).

A atividade antiviral da quercetina pode estar relacionada a mecanismos de entrada do vírus na célula. A desestabilização das partículas virais pela quercetina pode, de certa forma, dar-se sobre os receptores virais, impedindo a ligação do vírus à célula-alvo.

Para melhor avaliar a interferência da quercetina nos mecanismos replicativos do CPV, foi realizado o terceiro ensaio. Neste ensaio, a quercetina foi incubada em uma concentração de 2,0µg/mL a cada passo da infecção viral, ou seja, antes da inoculação (-1 h), no momento da adsorção (0 h), no momento da penetração (1 h), e após a entrada do vírus (2 h). O teste evidenciou redução máxima de 90% do título viral na etapa de penetração (1 h), no entanto as porcentagens de redução foram também expressivas para as etapas de adsorção (0 h) e pós-infecção (2 h), embora não significativas, considerando-se o critério mínimo de redução de 90% do título viral (Fig. 3). Estes resultados indicam que, além de possuir atividade virucida, a quercetina pode, respectivamente, interferir na ligação do vírus ao seu receptor celular e no processo de internalização nas células. Por meio da inibição do processo de penetração viral nas células, a atividade antiviral demonstrada pela quercetina permite a redução do número de novas células infectadas, o controle da propagação viral e a formação de novas progênies.

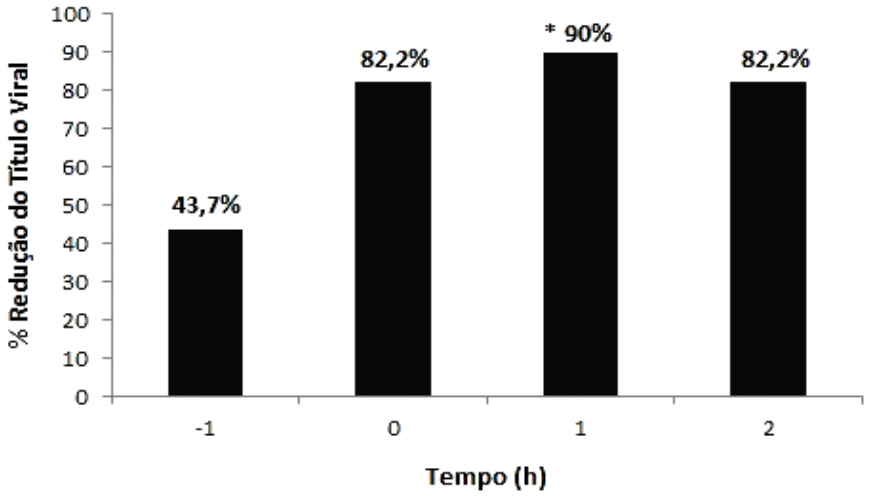


Figura 3. Efeitos inibitórios da adição de quercetina sobre diferentes etapas do ciclo replicativo do parvovírus canino. A quercetina (2µg/mL) foi adicionada em diferentes tempos: – 1 h (efeito de pré-tratamento), 0 h (efeito na adsorção), 1 h (efeito na penetração) e 2 h (efeito pós-infecção). Valores correspondentes à porcentagem de redução do título viral em relação ao controle. * Inibição significativa (≥1 log, 90%).

Os ensaios demonstraram o potencial da quercetina sobre a estrutura do CPV. Isso caracteriza a quercetina como possível composto ativo contra o CPV, com efeito antiviral já relatado contra outros vírus, como HHV-1 e HHV-2 (Chiang *et al*., 2003) e EHV-1 (Gravina *et al*., 2010).

CONCLUSÕES

O presente estudo demonstra que o flavonoide quercetina exibiu propriedades antivirais *in vitro* sobre o parvovírus canino. A atividade virucida da quercetina e seu efeito inibitório em etapas iniciais da replicação do parvovírus canino podem estar relacionados à inativação direta do vírus por meio da ligação desse composto a estruturas virais essenciais para a infecção. A quercetina também interferiu na infectividade viral ao induzir as células a um estado de menor susceptibilidade ao vírus. Estes resultados sugerem o uso potencial desse flavonoide como candidato a agente terapêutico no controle da parvovirose canina.

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PRESENCE OF THE VIRAL DNA IN *OOPHOROUS CUMULUS* COMPLEXES OF COWS CLINICALLY HEALTHY AND NATURALLY INFECTED BY BOVINE HERPESVIRUS 1 (BOHV1)

(Presença do DNA viral em complexos *cumulus oóphorus* de vacas clinicamente saudáveis e naturalmente infectadas pelo Herpesvirus bovino 1 (BoHV1)

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RESUMO

O objetivo deste estudo foi verificar a presença do DNA do herpesvirus bovino 1 (BoHV1) em Complexos *Cumulus Oóforus* (COCs) e sangue de vacas naturalmente infectadas. Os COCs foram obtidos de 15 doadoras por meio de aspiração folicular guiada por ultrassom (OPU). A extração do DNA foi realizada em um *pool* de COCs de todas as aspirações de uma mesma doadora e no sangue total. Após este procedimento, seguiu-se a realização das reações de *Nested*-PCR. O DNA do BoHV1 foi identificado no *pool* de COCs de três doadoras soropositivas, não sendo detectado em nenhuma das amostras soronegativas. Entretanto, não foi encontrado DNA viral em amostras sanguineas, mesmo nas oriundas de animais soropositivos. Todas as amostras de sangue e COCs foram submetidas à *Nested*-PCR para a detecção do BoHV5, não sendo encontrado nenhum resultado positivo. Os resultados obtidos permitem concluir que o DNA viral pode estar presente em estruturas ovarianas de vacas infectadas naturalmente pelo BoHV1.

Palavras-chave: ovócitos; *Nested*-PCR; infecção viral

ABSTRACT

This study was carried out to verify the presence of DNA of the bovine herpesvirus 1 (BoHV1) in *Cumulus Oophorus* Complexes (COCs) and blood from the cows naturally infected by BoHV1. COCs from 15 donors were obtained through Follicular Aspiration Guided by Ultrassom (OPU). The DNA extraction was accomplished in a *pool* of COCs of all aspirations from the same donor and in the total blood. After this procedure, the *Nested*-PCR reactions were accomplished. The DNA of BoHV1 was identified in the *pool* of COCs from three serum-positive donors, but it was not detected in none of the serum-negative samples. However, no viral DNA was found in sanguine samples, even in those from the serum-positive animals. All samples were subjected to *Nested*-PCR for detection of BoHV5, but no positive result was found. The obtained results allow concluding the viral DNA could be present in ovarian structures of the cows naturally infected by BoHV1.

Keywords: oocytes; *Nested*-PCR; viral infection

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INTRODUCTION

The interaction between gametes and embryos with pathogens has been thoroughly studied, as being related to viral agents with interference into reproduction. In this context, the BoHV1 causing Infectious Bovine Rhinotracheitis (IBR) is distinguished (Bielanski & Dubuc, 1994; Guerin at al., 1997; Vanroose et al., 1999; Makarevich et al., 2007).

The BoHV1 is a virus presenting cosmopolitan occurrence. It is associated to significant losses in productivity of the meat and dairy livestock, as generating a considerable economical loss due to breathing and reproductive problems. The disease is usually subclinical and characterized by viral latency, a moment at which no expressions of the viral antigens happens, besides occurrence of the interrupted replication (Jones et al., 2011). However, the following occurrences are frequent abortions from fourth to eighth month under gestation, estrus repetition at regular or irregular intervals, natimortality, perinatal mortality, reduced fertility and temporary infertility due to uterine infection (Takiuchi et al., 2005).

Concerning to contamination of the oocyte, an aspect to be considered is the presence of the cytoplasmic prolongations of the corona radiata cells. Those cytoplasmic prolongations cross the pellucida zone (ZP), as arriving to perivitelline space (Hyttel, 1987). Those projections form communications with the cytoplasmic membrane of the oocyte, as establishing an important link in passage of the chemical components that regulate the maturation of the oocyte. Those conditions suggest that BoHV1 can use those filaments to facilitate its itinerary by ZP (Vanroose et al., 2000).

This study was carried out to verify the presence of DNA of the bovine herpesvirus 1 (BoHV1) in *Cumulus Oophorus* Complexes (COCs) and blood from the cows naturally infected by BoHV1.

MATERIAL AND METHODS

Fifteen adult bovine females, crossbred Holstein x Gir at different stages of the estrus cycle were used. Those animals came from herds which were not vaccinated against BoHV1 in order to avoid the interference of the vaccination into results.

For selection of the oocyte donor cows, the blood samples were collected. The serum neutralization was accomplished in microplates according to the methodology proposed by the "Manual of Diagnostic Tests and Vaccines for Terrestrial Animals" (OIE, 2015). A second sanguine sample was collected from each animal and placed into tubes containing the anticoagulant, in order to accomplish the molecular detection by *Nested*-PCR technique.

The follicular aspirations were accomplished after the restraint of the animals and intercoccigeous epidural anesthesia. For this procedure, the ultrasound device (DPS Mindray DP-2200VET), equipped with microconvex transducer adjusted at eight MHz frequency and coupled to an intravaginal guide, was used. Some needles 40x10 (19G) and vacuum pump with 80mmHg pressure, as corresponding to a flow of 14mL

water/min were used. The follicles larger than two millimeters were punctured and the collected material were transported in plastic 50mL tubes (Falcon), as containing 5mL saline solution buffered (PBS), added with 1000UI heparin at 37°C. The aspirated content was washed in PBS in the embryo collection filter with 80µ mesh (Millipore). COCs were traced in stereoscopic microscope and transferred to another plate containing Talp-hepes for their maintenance. The COCs were conditioned in microtubes and later frozen (-20^{0}C), for subsequent detection of the viral DNA through *Nested*-PCR.

The detection of the viral DNA through *Nested*-PCR was accomplished to evaluate the presence of BoHV1. In this context, the *Nested*-PCR for BoHV5 was also accomplished, as taking into account the possibility to occur the crossed reaction by serum neutralization.

The extraction of the total DNA was accomplished in COCs, as indicated by the manufacturer of the extraction Kit "SV Wizard Genomic" (Promega®), in order to use them in the molecular assay. The used oligonucleotides and the protocol for the accomplishment of the Nested-PCR reactions standardized from the description by Campos et al. (2009). Each reaction was constituted by a final volume of 25µL, as containing 1µL total DNA of each sample, 2µL of each one of the oligonucleotides (20 pMol), 2.5µL of DMSO, 12,5µL of Go Taq® Green Master Mix 2x (Promega®) and ultrapure water (Millipore®), as amplifying a DNA fragment of 162 base pairs. Aliquots of the reactions were subjected to horizontal electrophoresis in 1% agarose gel.

RESULTS

The serum-positive animals did not present the DNA of BoHV1 in the samples under analysis in blood. However, positive reaction by *Nested*-PCR (Figure 1) was observed in *pool* of COCs of three serum-positive animals (3/12). Concerning to BoHV5, the viral DNA was not detected in any sample under analysis.

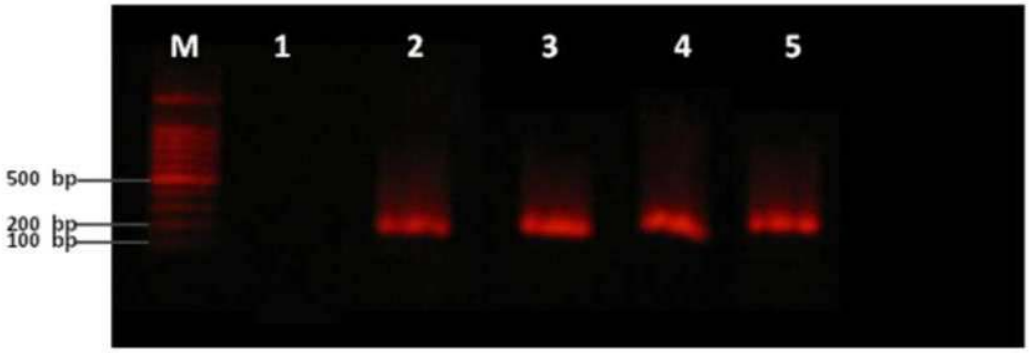


Figure 1. Product from *Nested*-PCR in 1% agarose gel, for COCs of cows serum-positive to BoHV1 (M: marker; 1: negative control; 2: positive control; 3, 4 and 5: positive COCs samples).

DISCUSSION

In the present experiment, the *Nested*-PCR technique was adopted for detection of the viral DNA, since it is more sensitive in comparison with other techniques for detection of BoHV1, such as viral isolation, fluorescence and serology (Takiuchi et al., 2005).

According to expectation, the serum-positive animals did not present the DNA of BoHV1 in the samples, either in blood and COCs. However, positive reaction by Nested-PCR was observed in the *pool* of COCs from three serum-positive animals (3/12).

The serum-positive animals revealing the viral DNA presented no clinical symptomatology of the disease. This condition invalidates the hypothesis presented by Oliveira (2007). According to this author, the serum-positive animals presenting no clinical symptoms are improbable transmitters of BoHV1 through COCs and follicular liquid.

Similarly to the present research, Oliveira (2007) found negative COCs in naturally infected animals, under low stressful conditions. However, this researcher did not find the viral DNA in the serum-positive animals, a fact not observed in the present work. This might have happened because the *Nested*-PCR, used in the present experiment, is a more sensitive method in relation to conventional PCR used by Oliveira (2007). So, the *Nested*-PCR is the most appropriate technique for molecular research in structures with low viral load (Takiuchi et al., 2005). Other aspect to be considered is the infection of the genital organs and the viral excretion are associated to acute phase of the disease, which is extremely short in infected animals under natural conditions (Jones et al., 2011).

According to Singh et al. (1983), the infectiousness level observed in animals which were artificially contaminated is much higher than in the naturally infected animals. In studies with the virus added under culture conditions, the viral DNA was detected in samples of COCs, follicular liquid, spermatozoids and embryos (Bielanski & Dubuc, 1994; Vanroose et al., 1999; Ferreira et al., 2005; Marley et al. 2008).

In the present experiment, the fact to find the viral DNA in the COCs of the naturally contaminated animals rather indicates the virus could be adhered in the *cumulus* cells, ZP or it is inside the oocyte. The ZP of the immature oocytes and embryos are very irregular, with the presence of several pores, flaws and projections (Vanroose et al., 2000). In this context, Vanroose et al. (2000) affirm that particles with size around 180-200 nm (approximate size of the viral particles of BoHV1) can cross a part of ZP, as arriving to more internal layers.

The absence of the viral DNA in blood is also associated to short period of the acute manifestation of the disease in the naturally infected animals. During the reinfection periods, the virus can be found in blood or inside leucocytes. Therefore, the virus reactivation occurring at moments of stress or immunosuppression can lead to its propagation through blood stream. Thus, the latency mechanism, that is characteristic of the subfamily

Alphaherpesvirinae mainly in the trigemio and sacral ganglions (Jones et al. 2011), explains the results obtained in sanguine samples.

Besides BoHV1, there is also a concern with the possible transmission of BoHV5 due its great genomic similarity with BoHV1, that was observed by Abdelmagid et al. (1995). According to Chowdhury (1995), both BoHV5 and BoHV1 present 85% genomic similarity. So, it is possible that BoHV5, after viral reactivation, to have tropism by the genital organs, as leading to endangerment in the genital organ as observed for BoHV1. So, all samples were analyzed by *Nested*-PCR for BoHV5 in order to verify the occurrence of samples contaminated by this virus type. However, no polluted sample was found.

The present results contrast with those observed by Silva-Frade et al. (2010), who found the DNA of BoHV5 in oocytes by the PCR technique. However, those authors experimentally infected the oocytes, a fact that was not accomplished in the present experiment.

CONCLUSIONS

The results allow concluding the viral DNA could be present in ovarian structures of the cows which were naturally infected by BoHV1. So, the serum-positive animals presenting no clinical symptomatology can be potentially transmitters of BoHV1 through COCs.

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NOTE

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Latent *bovine herpesvirus* 1 and 5 in milk from naturally infected dairy cattle

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ABSTRACT. *Bovine herpesvirus* 1 and 5 (BoHV-1 and -5) are antigenically and genetically related and can establish latent infection. We aimed to analyze the applicability of the milk sample to detect latently BoHV-infected cattle. BoHV-1 non-vaccinated clinically healthy cows from five dairy cattle herds (herd 1, n=24; herd 2, n=39; herd 3, n=39; herd 4, n=36; herd 5, n=70) were studied. We confirmed the presence of BoHV-1, and for the first time, BoHV-5 in the milk of naturally infected dairy cattle.

KEY WORDS: *bovine herpesvirus* 1, *bovine herpesvirus* 5, milk, naturally infected dairy cattle, virus latency

Bovine herpesvirus 1 (BoHV-1), the causative agent of infectious bovine rhinotracheitis (IBR), is widely shed in beef and dairy herds of all ages worldwide [1]. In comparison, *bovine herpesvirus* 5 (BoHV-5) has a more limited geographic distribution, mainly in Brazil [15] and Argentina [16], causing bovine meningoencephalitis.

Both BoHV-1 and BoHV-5 are genetically and antigenically related *Alphaherpesviruses* [4]. They can remain dormant until viral reactivation because of host immunosuppression [8]. Their ability to maintain a latent infection occurs in neural and non-neural sites, such as peripheral blood leukocytes [7]. Similar to blood, milk also contains leukocytes [2], and therefore, it could be a useful sample type for analysis of viral shedding, but there are still few studies about its use. There are previous studies that showed BoHV-1 isolation from milk samples [13, 19], but there is no study about BoHV-5 in milk. As milk is easy to collect and could be a BoHV transmission route among animals, it is important to confirm the role of milk sampling as a method to detect BoHV infection in dairy cattle.

The aim of this work was to evaluate the possibility of using milk to detect latent BoHV-1 and BoHV-5 in naturally infected dairy cattle through viral molecular analysis.

This study was performed in the Zona da Mata region, Minas Gerais−Brazil, and it was approved by the Ethical and Animal Welfare Committee of the Universidade Federal de Viçosa. The sample size was calculated by Epi Info® software (version 3.5.1−Centers for Disease Control and Prevention (CDC), Atlanta, GA, U.S.A.), with a 95% confidence level and 5% confidence interval, based on a design prevalence rate of 12% at minimum, according to a previous study that reported BoHV-1 and BoHV-5 coinfection prevalence [17]. Blood and milk samples were collected from non-BoHV-1-vaccinated and clinically healthy cows from five dairy cattle herds (herd 1, n=24; herd 2, n=39; herd 3, n=39; herd 4, n=36; and herd 5, n=70). These 208 cows were chosen at the authors' convenience.

We utilized the virus neutralization test (VNT) and nested polymerase chain reaction (N-PCR) assay to classify the animals as virus (BoHV-1 and BoHV-5)-positive or virus (BoHV-1 and BoHV-5)-negative. Although the VNT does not distinguish the

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Table 1. Polymorphisms of glycoprotein B of bovine herpesvirus

Isolate	GenBank accession	810 [aa residue]	858	876	879	Specie	Herd
Reference	NC_001847	T [270D]	T	A	A	BoHV1	-
S2	KM252874	T [270D]	T	A	A	BoHV1	1
S3	KM252875	T [270D]	T	A	A	BoHV1	1
S4	KM252876	T [270D]	T	A	A	BoHV1	1
S6	KM252877	T [270D]	T	A	A	BoHV1	2
S7	KM252878	T [270D]	T	A	A	BoHV1	2
S8	KM252879	T [270D]	T	A	A	BoHV1	2
S11	KM252882	T [270D]	T	A	A	BoHV1	2
S12	KM252883	T [270D]	T	A	A	BoHV1	3
S13	KM252884	T [270D]	T	A	A	BoHV1	3
S14	KM252885	T [270D]	T	A	A	BoHV1	3
S15	KM252886	T [270D]	T	A	A	BoHV1	3
S17	KM252887	T [270D]	T	A	A	BoHV1	4
S19	KM252888	T [270D]	T	A	A	BoHV1	4
S20	KM252889	T [270D]	T	A	A	BoHV1	4
S21	KM252890	T [270D]	T	A	A	BoHV1	4
S26	KM252894	T [270D]	T	A	A	BoHV1	5
S27	KM252895	T [270D]	T	A	A	BoHV1	5
Reference	NC_005261	G [270E]	G	G	G	BoHV5	-
S9	KM252880	G [270E]	G	G	G	BoHV5	2
S10	KM252881	G [270E]	G	G	G	BoHV5	2
S23	KM252891	G [270E]	G	G	G	BoHV5	5
S24	KM252892	G [270E]	G	G	G	BoHV5	5
S25	KM252893	G [270E]	G	G	G	BoHV5	5

The columns indicate the polymorphic sites of the glycoprotein B gene. The substitutions in the protein are indicated between brackets. The reference isolates correspond to the reference genomes of BoHV1 and BoHV5 available at the GenBank RefSeq database.

immune response between BoHV-1 and BoHV-5, it is the test of choice for antibody detection against BoHV according to the OIE [12]. Serum sample preparation and the VNT assay were performed according to OIE instructions [12] using the BoHV-1 LA viral strain and MDBK cell line.

There are several methods to discriminate BoHV-1 and BoHV-5, such as high-resolution melting (HRM) analysis [9], multiplex real time PCR [5], restriction site mapping of viral DNA, cross-neutralization tests, and monoclonal antibody reactivity [3]. As each technique has advantages and disadvantages, we utilized automatic sequencing and N-PCR assays because they are low cost and well established techniques in the scientific community. Moreover, N-PCR is a very sensitive and specific technique [6], and is recommended in situations where there is a very low quantity of DNA, which is the case during latent infection. We performed milk DNA extraction (Wizard® SV Genomic DNA Purification System, Promega Corp., Madison, WI, U.S.A.) following the manufacturer's instructions to perform the N-PCR assay. BoHV-1 and BoHV-5 DNA were amplified by oligonucleotides as previously described [6].

Milk samples were submitted to sequencing and polymorphism analyses. The contiguous sequences were assembled using CLC Genomics Workbench version 6.5.1 (CLC Bio, Aarhus, D.K.) and submitted to GenBank. For comparison purposes and polymorphism analysis, the sequences of 16 strains of BoHV-1 and 2 strains of BoHV-5 were downloaded from GenBank and aligned using MAFFT version 7.130. In order to determine the type of the virus in the infected animals (BoHV-1 and/or BoHV-5 infection), we performed a polymorphism analysis. Despite the fact that BoHV strains share highly conserved sequences of glycoprotein B, we found three synonymous substitutions and one non-synonymous substitution that allowed for the differentiation between BoHV-1 and BoHV-5 strains (Table 1). Analyzing the sequences of BoHV, we found that BoHV-1 strains have an aspartate (D) residue on position 270 of glycoprotein B, while BoHV-5 strains have a glutamate (E) residue.

To quantify the viral load contained in milk samples, real time PCR assays were performed under universal conditions using previously described primers [18] for the milk samples with positive result in N-PCR assays (herd 1, n=9; herd 2, n=16; herd 3, n=18; herd 4, n=27; herd 5, n=30). The samples presenting a cycle threshold higher than 38 were considered negative.

As a result, all herds showed positive results for VNT (herd 1=54.16%; herd 2=23.07%; herd 3=51.28%; herd 4=44.44%; and herd 5=67.14%), as shown in previous studies [1, 10]. Furthermore, we observed for the first time a wide frequency of positivity of BoHV-1 and/or BoHV-5 DNA in milk among the herds through N-PCR analysis (herd 1=37.5%; herd 2=41.02%; herd 3=46.15%; herd 4=75.0%; and herd 5=42.85%). However, any clinical signs of BoHV-1 or BoHV-5 were reported, and all animals maintained normal production on the farms. Thus, these facts indicate that those animals that tested positive were latently infected (BoHV is in the host, but there is no replication, antigen production, or clinical signs) [8]. Previous studies showed latency of BoHV-1 [11] and BoHV-5 [7] in peripheral blood leukocytes. Considering the leukocytes in milk, this information strengthens our suggestion of

	Herd 1		
	N-PCR-positive	N-PCR-negative	Total
VNT-positive	5	8	13
VNT-negative	4	7	11
Total	9	15	24

	Herd 2		
	N-PCR-positive	N-PCR-negative	Total
VNT-positive	3	6	9
VNT-negative	13	17	30
Total	16	23	39

	Herd 3		
	N-PCR-positive	N-PCR-negative	Total
VNT-positive	7	13	20
VNT-negative	11	8	19
Total	18	21	39

	Herd 4		
	N-PCR-positive	N-PCR-negative	Total
VNT-positive	12	4	16
VNT-negative	15	5	20
Total	27	9	36

	Herd 5		
	N-PCR-positive	N-PCR-negative	Total
VNT-positive	19	28	47
VNT-negative	11	12	23
Total	30	40	70

	All herds (1, 2, 3, 4, 5)		
	N-PCR-positive	N-PCR-negative	Total
VNT-positive	46	59	105
VNT-negative	54	49	103
Total	100	108	208

Fig. 1. Contingency tables showing comparison between results obtained from the virus neutralization test (VNT) on sera samples and from nested polymerase chain reaction (N-PCR) on milk samples in herds 1, 2, 3, 4, and 5. Kappa index to check the agreement between both diagnostic tests: herd 1=0.020; herd 2 = −0.079; herd 3 = −0.228; herd 4=0.0; herd 5 = −0.062; herds 1, 2, 3, 4, 5 = −0.086.

using milk samples to detect latent infection in dairy cows.

The Kappa index was measured to check the agreement between the VNT test and N-PCR assay for each herd, and all the herds as a whole, respectively. The Kappa indices found were: herd 1=0.020, herd 2 = −0.079, herd 3 = −0.228, herd 4=0.0, herd 5 = −0.062, and herds 1, 2, 3, 4, 5 = −0.086 (Fig. 1). These results imply that there are low degrees of agreement between these two tests. The possible reasons for samples presenting a positive VNT/negative N-PCR and negative VNT/positive N-PCR analysis might be the low viral load, which cannot be detected by the N-PCR assay and low antibody level that cannot be detected by the VNT, respectively. Correspondingly, a previous study also showed a low Kappa index (k=0.13) when working with the VNT and nucleic acid detection in the trigeminal ganglia (*post mortem* analysis) [14]. In our study, we provide an *in vivo* analysis. In the future, it is also important to measure the Kappa index between blood and milk samples for each test.

Furthermore, because of the low viral load (shown below), the detection of anti-BoHV-1 and/or BoHV-5 antibodies, and the absence of clinical signs of herpesvirus infection in the animals, it is clear that there was latent infection. In this case, the detection of antibodies against herpesviruses indicates that the animals had latent infection, meaning that there was antibody production during an acute infection at some time in the past [14].

Even though VNT is the test of choice for antibody detection against BoHV according to the OIE [12], it is not designed, by itself, to detect latently infected animals. It is necessary to develop more sensitive serological methods and standardization of the molecular assay, which has higher sensitivity [14] and would also be important to detect the latent infection. In order to diagnose BoHV latent infection *in vivo*, molecular assays should be performed on tissues such as peripheral blood leukocytes, which are non-neural sites of latent infection maintenance and can be collected from blood and milk [2]. The advantage of considering milk samples is the practical and non-invasive *in vivo* collection.

We detected both BoHV-1 and BoHV-5 strains in milk from naturally infected dairy cattle (Table 1): the number of BoHV-1 strains identified in each herd was 3, 4, 4, 4, and 2 for herds 1 to 5, respectively. Meanwhile, the number of BoHV-5 strains was 2 and 3 for herds 2 and 5, respectively. Both types of BoHV were found in herds 2 and 5. A previous study reported BoHV-1 shedding into milk from experimentally infected dairy cows [13]; however, to our knowledge, the present study is the first report of BoHV-5 detection in milk from naturally infected dairy cattle.

There was a measurable amount of BoHV-1 and/or BoHV-5 DNA in all herds (herd 1=18.04 [SD=9.84]; herd 2=12.33 [SD=6.04]; herd 3=22.69 [SD=7.99]; herd 4=41.42 [SD=7.91]; herd 5=11.1 [SD=5.41] DNA copies/ml of milk) (Fig. 2). The low

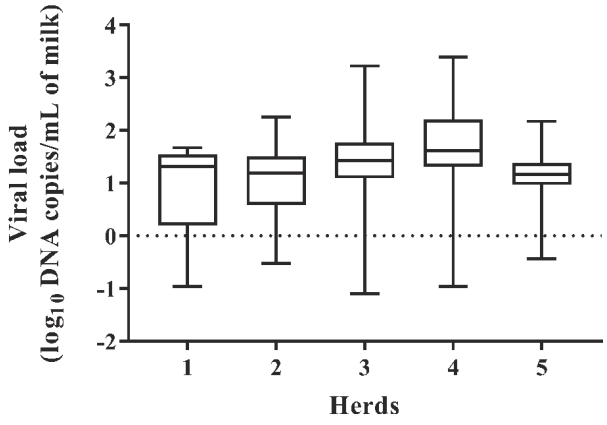


Fig. 2. BoHV-1 and/or BoHV-5 load represented by $\log_{10}$ DNA copies/m*l* of milk in each herd (1, 2, 3, 4, 5). Herd 1=18.04 [SD=9.84]; herd 2=12.33 [SD=6.04]; herd 3=22.69 [SD=7.99]; herd 4=41.42 [SD=7.91]; herd 5=11.1 [SD=5.41] $\log_{10}$ DNA copies/m*l* of milk.

loads observed in the present study imply latent infection (no viral replication).

Our findings are important to further understand BoHV infection in naturally infected animals. Milk seems to be a suitable sample for the viral nucleic acid detection as a more sensitive test compared to the serological method, especially for the diagnosis of latent infection. Moreover, our analysis highlighted the presence of BoHV-5 in cattle milk for the first time and confirmed BoHV-1 in the same type of sample, indicating that it is an important source of virus shedding.

CONFLICT OF INTEREST. The authors declare there is no conflict of interest regarding this study.

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VETERINARY MICROBIOLOGY - SHORT COMMUNICATION

Apoptosis in the late replication phase of *Bovine alphaherpesvirus 1* in experimentally infected calves

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Abstract

Bovine alphaherpesvirus 1 (BoHV-1) is a pathogen causing respiratory and reproductive clinical signs in cattle. Infected animals may develop rhinotracheitis, vulvovaginitis, balanoposthitis, and abortion. Viral latency is generally established in neuronal ganglia simultaneously to a decrease in both genes or genome expression and viral replication. Under stressful conditions, infection is reactivated leading to viral replication and the manifestation of clinical signs. In this study, we evaluated both viral reactivation and apoptosis in trigeminal ganglia cells as BoHV-1 progressed from the latent to the acute phase of infection after dexamethasone administration in experimentally infected calves. To test ganglia cell death as a consequence of BoHV-1 infection, we stained the BoHV-1 samples with TUNEL after the viral shedding by the calves. RT-qPCR of apoptotic genes was also performed, showing the upregulation of the caspase 8 gene in the trigeminal ganglia from cattle experimentally infected with BoHV-1. These results showed the occurrence of apoptosis in ganglion cells of calves infected by BoHV-1.

Keywords *Alphaherpesvirus* · Apoptosis · Neuronal ganglia · Latency

Bovine alphaherpesvirus 1 (BoHV-1) affects beef and dairy cattle of all ages worldwide, except for a part of European countries, which have implemented strict tests and eradication programs [1]. The virus causes reproductive disorders, leading to considerable losses in the livestock industry [2]. Hence, a better understanding of BoHV-1 pathogenesis is in need to reduce the prevalence of this infection in domestic livestock.

Alphaherpesviruses infection occurs in three stages: a primary infection, which persists about two weeks; a long period of latent infection; and viral recrudescence, which favors virus shedding [3]. During viral replication, considered a productive phase, both gene expression and viral assembly can be detected [4].

The latent phase of infection is marked by the presence of the viral genome under reduced viral replication. In general, under stress-associated situations, infection is reactivated, leading to viral replication and spread to other animals [5]. The increase of endogenous cortisol due to stressful conditions is tightly related to BoHV-1 reactivation from latency [4].

Viruses have developed specific mechanisms and different strategies to escape from host defenses throughout their evolutionary history [6]. Apoptosis or programmed cell death is a highly conserved innate response of hosts that can limit viral spread to other cells [7–9]. However, induced apoptosis is able to favor viral escape from host defenses [10, 11]: in vitro experiments have identified a correlation between certain apoptotic genes with BoHV-1 infection [12, 13]. Previous studies suggested that alphaherpesviruses are able to stimulate apoptosis to escape from latency [14–17]. Alternatively, You et al. [18] suggested that alphaherpesviruses encode

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anti-apoptotic virulence factors to suppress apoptosis and guarantee both viral replication and spread.

Since BoHV-1 is able to reestablish a productive infection after reactivation via complex virus-host interactions [5], we studied a mechanism of viral escape from latency in the late phase of replication. The present study demonstrated that apoptosis also occurs in the trigeminal ganglia (TG) when infected animals had viral reactivation.

Sixteen BoHV-1-negative Girolandos (1/2 Gir–1/2 Dutch), male calves, 4 to 6 months old, were challenged with BoHV-1. Animals were tested for the presence of the virus using a virus neutralization assay and subjected to a 60-day period of acclimation. Four groups of four animals each were identified as G1—mock inoculated and treated with dexamethasone; G2—mock inoculated but not treated with dexamethasone; G3—BoHV-1 infected and treated with dexamethasone (productive infection group); and G4—BoHV-1 infected but not treated with dexamethasone (latent infection group) (Fig. S1).

Animals from G1 and G2 were mock inoculated, the first being treated with dexamethasone. Animals from G3 and G4 were inoculated with $10^{7.3}$ $TCID_{50}$/ml BoHV-1, Brazilian strain EVI 123/98, in 2 ml of viral suspense into each nostril (adapted from Franco et al. [19]), and G3 was treated with dexamethasone.

Nasal swabs were collected every 2 days from day 0 to 14 post-infection (pi) (representing the phase of primary infection), on days 21, 28, and 35 pi (representing the phase of latent infection), and from day 45 to 51 pi (representing the phase of viral recrudescence) for viral isolation [19]. Blood samples were collected to monitor the humoral response on days 0, 6, 21, 35, 45, 49, and 51 pi. On days 45 to 49 pi, G1 and G3 received 0.1 mg/kg/day of dexamethasone intramuscularly to reactivate the virus and stimulate the productive infection. All samples were collected following the same procedures. Throughout the experimental period, animals underwent weekly clinical tests to monitor the clinical evolution of BoHV-1 infection. Trigeminal ganglia were harvested on day 51 pi, after animals' euthanasia (Fig. S1). Real-time PCR for apoptotic genes and TUNEL assays were performed. Viral titers were determined according to the Reed & Muench method [20]. Serological assays against BoHV-1 were performed using virus neutralization [21].

DNA damage, an indicator of apoptosis, was detected by TUNEL assays (terminal deoxynucleotidyl transferase dUTP nick end labeling), using in situ Cell Death Detection Kit, Fluorescein (Roche Applied Science, Germany). The samples were analyzed according to the following apoptosis score: [+] low-intensity apoptosis, [++] intermediate intensity apoptosis, and [+++] high-intensity apoptosis.

Total RNA was isolated from TG using TRIzol® Reagent (Invitrogen/Life Technologies, USA) and treated using a TURBO DNA-free™ kit (Ambion/Life Technologies, USA). We used random primers (Invitrogen/Life Technologies, USA), 10 mM dNTP Mix (Invitrogen/Life Technologies, USA), 0.1 M DTT (Invitrogen/Life Technologies, USA), 40 U RNaseOUT (Invitrogen/Life Technologies, USA), and 200 U SuperScriptTM III Reverse Transcriptase (Invitrogen/Life Technologies, USA) for cDNA synthesis. Reactions were performed in the equipment Applied Biosystems 7300 Real-Time PCR System. Applied Biosystems® SYBR® Green PCR Master Mix was used according to the manufacturer's instructions. Forward and reverse oligonucleotides are described in Table S1. Mean values of curve thresholds (CT_S) were used to calculate the relative expression of targeted genes using the $2^{-\Delta\Delta Ct}$ comparative method [22].

Animals challenged with BoHV-1 showed clinical signs compatible with respiratory infection from day 2 pi to 12 pi. Initially, animals showed intensified nasal secretion and heavy breathing, progressing to purulent nasal signs, presenting bloody in some cases. Some of the calves exhibited intranasal vesicles, drooling, rattle on auscultation, and mild fever. On day 12 pi, animals had decreased and non-purulent nasal secretion. Animals that received dexamethasone had a slight increase in nasal secretion, mild episodes of fever, and drooling at day 50 pi. In this experiment, BoHV-1-infected animals developed a primary productive infection and, upon viral reactivation, a productive infection was reestablished

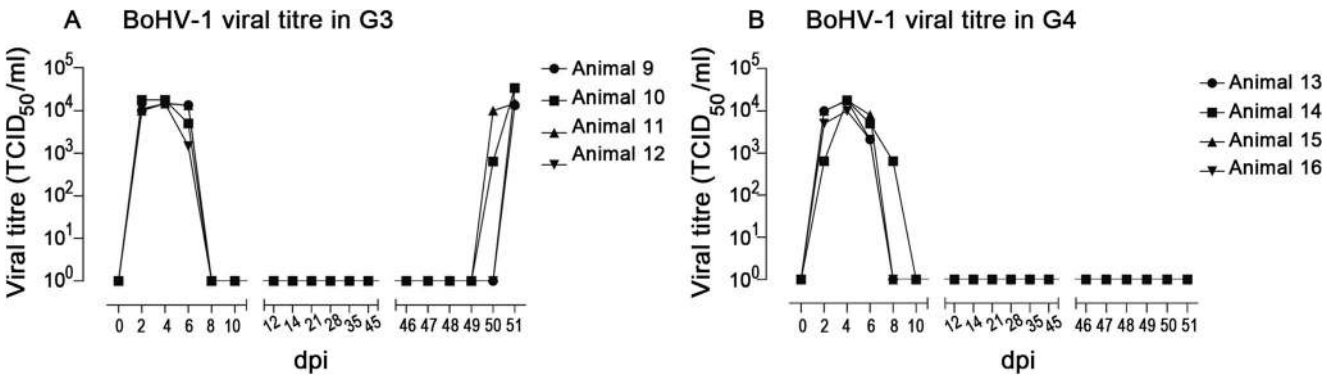


Fig. 1 BoHV-1 titration from experimentally infected cattle in MDBK cells. **A** Evolution of BoHV-1 titers in nasal secretions from animals from G3 (group resentative of productive infection) during the experimental phase. **B** Evolution of BoHV-1 titers in nasal secretions of G4 animals (group representative of latent infection) during the experimental phase. The values are expressed in $\log_2$ $TCID_{50}$/ml; dpi, days post-infection

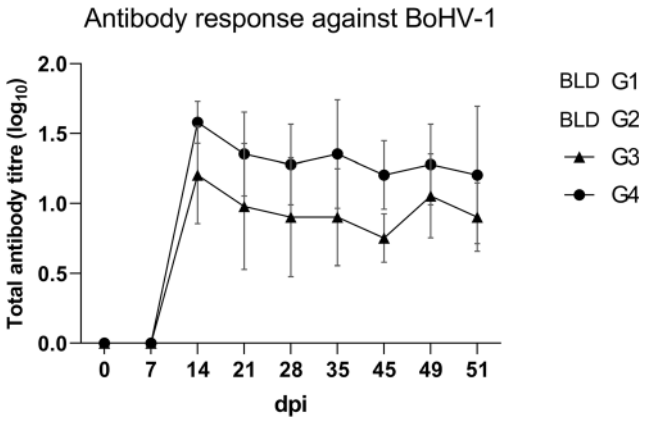


Fig. 2 Antibody response against BoHV-1 from sera of BoHV-1 experimentally infected cattle. Production of neutralizing antibodies response in cattle sera against BoHV-1 infection by virus neutralization assay. G1: mock-inoculated and treated with dexamethasone group; G2: mock-inoculated but not treated with dexamethasone group; G3: BoHV-1-infected and treated with dexamethasone group (productive infection); and G4: BoHV-1-infected but not treated with dexamethasone group (latent infection). dpi: days post-infection. BLD: below limit of detection

after dexamethasone administration, according to the study of Workman et al. [23].

The virus was successfully isolated from nasal secretion samples at variable titers between day 2 and 6 pi. Again, BoHV-1 was isolated at day 50 pi and day 51pi from G3 (productive infection group). Regarding G4 (latent infection group), variable titers were found from day 2 pi to 8 pi. The virus was not isolated from G1 and G2 (negative control group) (Fig. 1A and 1B). Antibodies were detected in G3 and G4 from day 14 pi to the last experimental day (51 pi) (Fig. 2).

TUNEL-positive nuclei were detected at different levels in all animals on day 51 pi. Compared to groups G1, G2, and G4, which were not exposed to viral recrudescence, we identified an overall increase in TUNEL-positive cells in G3 (Fig. 3), in which TG were exposed to BoHV-1 recrudescence. Kook et al. [24] performed TUNEL assays in TG sections of BoHV-1-infected calves and detected apoptosis at 6 h after dexamethasone treatment (early replication phase).

In the early stages of BoHV-1 replication in calves and after dexamethasone treatment, the apoptosis observed in TG is primarily related to T-cell marking, suggesting that apoptosis induced by infiltrating T cells enhances the virus escape from latency [24]. In order to try to characterize cell types, we performed a histopathological analysis with

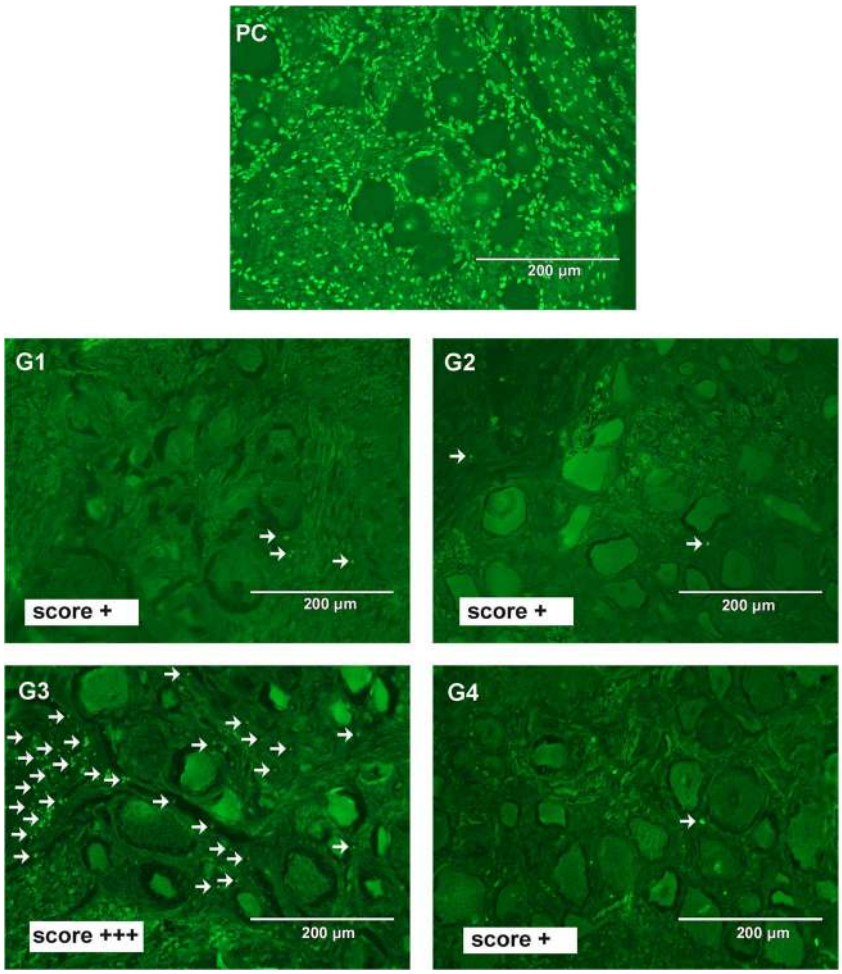
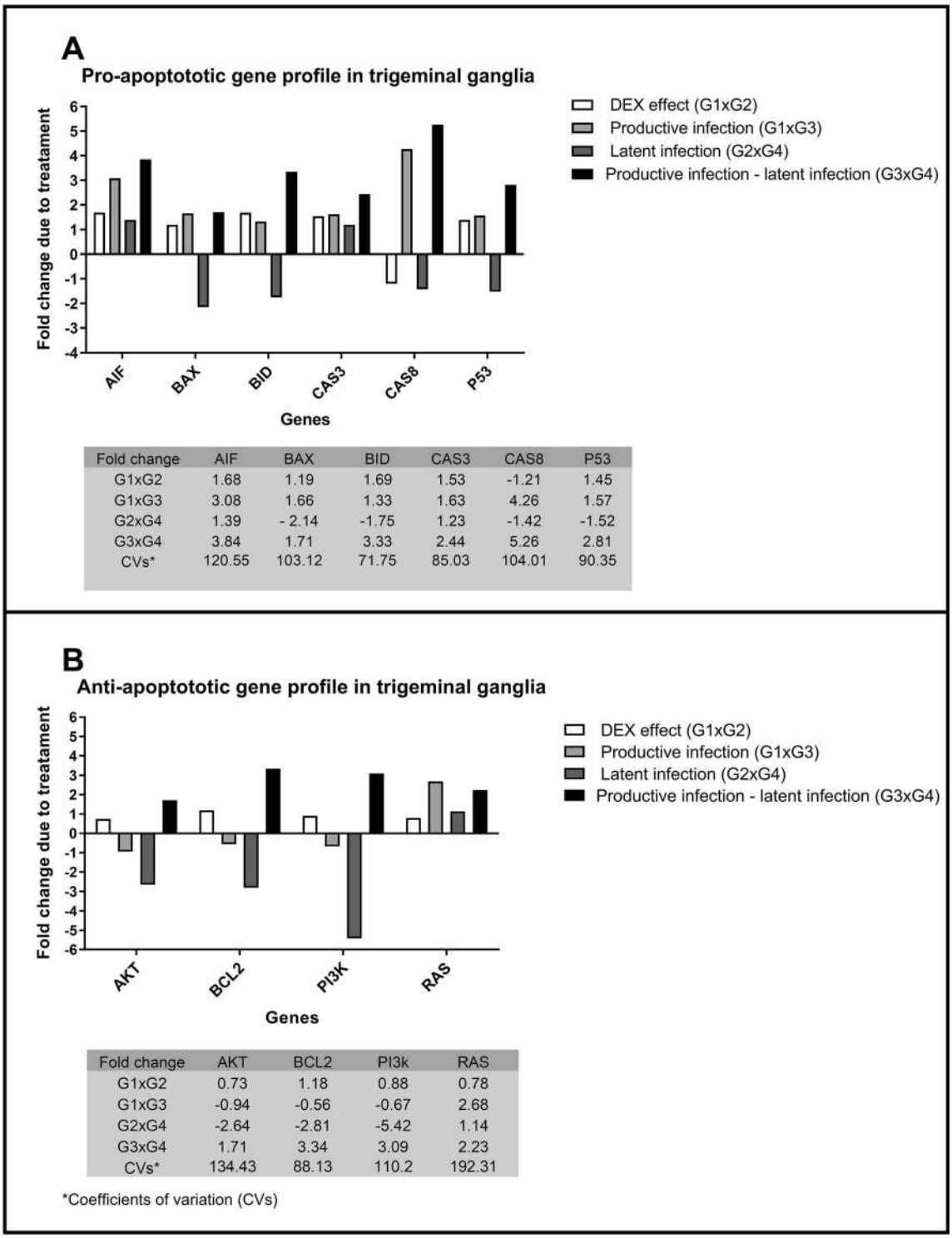


Fig. 3 Identification of +TUNEL cells (nuclei, green) in histological sections of trigeminal ganglia of experimentally infected cattle at day 51 post-infection during a productive infection that was reactivated by dexamethasone (G3) or latent infection (G4). G1: negative control group for G3. G2: negative control group for G4. Arrows denote +TUNEL cells. PC: positive control. Magnification: 200 ×. +TUNEL cells score: [+] low intensity; [+++] high intensity



Fold change	AIF	BAX	BID	CAS3	CAS8	P53
G1xG2	1.68	1.19	1.69	1.53	-1.21	1.45
G1xG3	3.08	1.66	1.33	1.63	4.26	1.57
G2xG4	1.39	- 2.14	-1.75	1.23	-1.42	-1.52
G3xG4	3.84	1.71	3.33	2.44	5.26	2.81
CVs*	120.55	103.12	71.75	85.03	104.01	90.35

Fold change	AKT	BCL2	PI3k	RAS
G1xG2	0.73	1.18	0.88	0.78
G1xG3	-0.94	-0.56	-0.67	2.68
G2xG4	-2.64	-2.81	-5.42	1.14
G3xG4	1.71	3.34	3.09	2.23
CVs*	134.43	88.13	110.2	192.31

*Coefficients of variation (CVs)

Fig. 4 Gene profile in trigeminal ganglia collected on day 51. Relative differences in gene expression due to treatment based on the $2^{-\Delta\Delta Ct}$ analysis of the genes studied. DEX effect: gene expression difference between G1 and G2 due to treatment with dexamethasone (G1). Productive infection: differences between the gene expression in the G1 and G3 groups due to a productive viral infection (G3) (viral reactivation after dexamethasone administration). Latent infection: difference in the gene expression between the G2 and G4 groups due to latent viral infection (G4). **A** Pro-apoptotic genes with detectable expression. **B** Anti-apoptotic genes with detectable expression. AIF, apoptosis-inducing factor; BAX, BCL2-associated X protein; BID, BH3 interacting domain death agonist; CAS3, caspase 3; CAS8, caspase 8; p53, tumor suppressor gene; AKT, V-akt murine thymoma viral oncogene homolog 1; BCL2, B-cell lymphoma 2; PI3K, phosphatidylinositol-3-kinase; RAS, Harvey rat sarcoma viral oncogene homolog

hematoxylin and eosin staining on the same histological sections used for the TUNEL assays. The presence of T-lymphocytes in the TG of infected calves in the late replication phase of BoHV-1 was not observed (data not shown). Hence, it is possible to assume that the apoptosis observed in the TUNEL assays in the present study was not induced by T-cell infiltration. Also, the markings observed in the TUNEL technique of this study are of neuronal cells.

All gene expression analyses were performed on day 51 pi, when animals were euthanized. Gene expression of apoptotic protease-activating factor-1 (APAF1), caspase 3 (CAS3), fas-receptor (FAS) apoptosis-inducing factor (AIF), BCL2-associated X protein (BAX), BH3 interacting domain death agonist (BID), and tumor suppressor gene (p53) in TG was unchanged. However, the caspase 8 (CAS8) gene was higher expressed in animals under productive infection when compared to the latent infection and control groups. The fold change of the G3 group versus the other groups (G1, G2, and G4) showed upregulation of the caspase 8 gene (Fig. 4A). According to Sciortino et al. [25], the induction of apoptotic genes is caspase dependent (due to CAS3 and CAS8 detection). In our study, we observed CAS8 mRNA with high expression.

The anti-apoptotic genes were analyzed to understand both productive and latent phases of BoHV-1 infection in G1, G2, G3, and G4 groups. We did not detect the association of BoHV-1 infection to the expression of V-akt murine thymoma viral oncogene homolog 1 (AKT), Harvey rat sarcoma viral oncogene homolog (RAS), B-cell lymphoma 2 (BCL2), and phosphatidylinositol-3-kinase (PI3K) anti-apoptotic genes in our study (Fig. 4B).

In the present work, we bring remarks which may contribute to the understanding of the BoHV-1 late phase of replication and during the transition from latency to active infection. Some animals, which were mock-infected and non-treated with dexamethasone, presented a small number of TUNEL-positive cells. Animals from group G3 had the highest score of TUNEL-positive cells and higher expression of the caspase 8 gene. Our findings demonstrate that viral reactivation is associated with apoptosis in TG from calves infected by BoHV-1.

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Availability of data and material The published data and procedures claim and comply with field standards

Author contributions All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by Hanna Carolina Campos Ferreira, Elaine Nery de Araújo, and Nívia Carolina Lopes Rosado. The first draft of the manuscript was written by Hanna Carolina Campos Ferreira and Abelardo Silva Júnior. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Declarations

Ethics approval For the implementation of this study, the use of animals with subsequent euthanasia was necessary. Thus, all animal handling stages were strictly under the criteria of the Ethics Committee for Animal Experimentation of the Universidade Federal de Viçosa (approval protocol: 23/2013).

Consent for publication All authors approved the version to be published.

Conflict of interest The authors declare no competing interests.

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Molecular Methodology for the Detection of the *Leishmania* Genus in Different Biological Samples Extracted from Dogs

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ABSTRACT

***Background*:** The leishmaniases are a group of parasitic diseases caused by trypanosomatids belonging to the genus *Leishmania*, members of the class Kinetoplastida, order Trypanosomatidae, family Trypanosomatidae. Despite innumerous wild species that are infected, the domestic dog is a potential reservoir of *Leishmania infantum* in urban areas, which expands the transmission pathway to humans. When infected, the dog becomes Visceral Canine Leishmaniasis (CVL), which is characterized by a diverse clinical picture that ranges from asymptomatic to non-specific signs, such as skin lesions, lymphadenomegaly, weight loss, splenomegaly, and/or ocular lesions, thus impairing accurate and rapid diagnosis. In Brazil, it is considered a public health problem since it is endemic in certain regions. Therefore, parasitological, serological, and molecular methods can be used for the detection of the disease. However, the possibility of serological cross-reaction and the occurrence of co-infection with other trypanosomatids decreases the specificity rate to below 100%, which suggests the use of more accurate diagnostic tools. Several molecular targets and starting samples for leishmaniasis diagnosis are already standardized, but there is lack of data allowing the evaluation of the target, as well as which biological material is more efficient for the molecular diagnosis of CVL. The sensitivity of PCR may vary with DNA quality, primer type, parasitemia level, and number of target copies per cell. The spleen, blood, liver, aspirate of bone marrow and lymph nodes are the most frequently used for molecular diagnosis of CVL. The present study aimed to evaluate and compare three protocols of the polymerase chain reaction (PCR) for the molecular diagnosis of CVL in different biological samples removed from animals with different clinical and anatomopathological signs.

***Materials, Methods & Results*:** Fifty seropositive dogs for CVL were used, their clinical and anatomopathological signs were evaluated, and were classified as asymptomatic, oligosymptomatic, and polysymptomatic. The PCR was conducted with specific primers for each region of the smaller subunit of rRNA, ITS-1, and KDNA genes. The four types of biological samples (spleen, blood, lymph nodes, and liver) were analyzed. Among the 50 dogs studied, 19 (38%) were in the asymptomatic group; all the animals showed healthy appearance, 15/50 (30%) of the dogs presented up to two symptoms, being classified as oligosymptomatic. The polysymptomatic dogs [16/50 (32%)] presented with a compromised clinical status. The study showed that all dogs had a positive result in at least one analyzed PCR methodology. Comparing the results of the three types of tests in the four types of studied samples, the nested-PCR was the one which presented a greater frequency of amplifications. Of a total of 200 samples, 124 showed amplification, showing a 62% sensitivity.

***Discussion*:** The results revealed that, when 50 dogs were analyzed, the spleen tissue samples had a better performance in all the tests, but the sensitivity of blood samples was also satisfactory in Nested SSU rRNA-PCR and MC-PCR. The blood samples can be easily accessed with minimal invasion. One of the limitations around the use of biopsy of the spleen or its aspirate is the risk of serious bleeding or even death of the animal. Taking into consideration the practicality and because it has a lower grade of invasiveness, the combination of peripheral blood with Nested SSU rRNA-PCR becomes the methodology of first choice.

Keywords: canine visceral leishmaniasis, molecular diagnosis, dogs.

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INTRODUCTION

Visceral Leishmaniasis (VL) is considered a public health problem with occurrence in several countries, being Brazil one of the affected [13]. The VL is a zoonosis caused by protozoa of the genus *Leishmania* [6]. The transmission is given by the vector of the family sand flies of the genus Lutzomyia [14]. In Brazil, the species associated with the transmission of VL is the *Leishmania infantum*, a synonym for *Leishmania chagasi* [9].

When infected, the dog becomes Visceral Canine Leishmaniasis (CVL), which characterizes by present a diverse clinical picture, that ranges from asymptomatic to non-specific signs, thus impairing the diagnosis [15].

The clinical diagnosis is difficult due to the disease remains asymptomatic for a long time. The immunoenzymatic assay and indirect immunofluorescence are those recommended by the Ministry of Health [10].

The polymerase chain reaction (PCR) is now a valuable molecular tool for detecting *Leishmania* sp in different clinical samples since they are tests that present high sensitivity and specificity [1]. Many targets and molecular initiators for the diagnosis of VL have already been standardized, but there is still a lack of data that allow evaluating which target, as well as which biological material is most efficient for the molecular diagnosis of CVL [18].

In front of a scenario in which VL is one of the neglected diseases that more expands in Brazil and in the world, it is fundamental the development of studies that seek to improve and facilitate the molecular diagnosis of the CVL. Therefore, the objective of this study was to compare three different types of methodologies for PCR that use different DNA targets in the diagnosis of VL.

MATERIALS AND METHODS

Ethical issues

In this work, reactive dogs were used in serological tests for CVL diagnosis, which were seized at the Center for Zoonoses Control (CCZ) in Montes Claros (Minas Gerais - Brazil). The present study was evaluated by the Commission for Ethics in Animal Experimentation and Welfare (CEEBEA) of the State University of Montes Claros and received a favorable opinion with case number No 151.

Characterization of the dogs

Among the months from January to March 2018, were collected blood, spleen, lymph node and liver samples from 50 seropositive animals for LVC in the rapid test and ELISA with a 1:40 titration seized by the Zoonoses Control Center of the municipality of Montes Claros. Before euthanasia, the dogs were evaluated by a trained professional who observed the presence of symptoms such as alopecia, slimming, nail growth, ocular lesions and cutaneous ulcerations. The dogs were classified as asymptomatic without presence of symptoms, oligosymptomatic when they presented at least two symptoms and polysymptomatic when they presented above three symptoms. They were also observed pathological changes in the spleen and liver during necropsy.

Acquisition of the samples

They were removed from the animal, already anesthetized, 5 mL of punctured venous blood from the cephalic vein using a syringe and tube with the presence of EDTA according to Moraes *et al*. [11]. After euthanasia, samples of spleen and liver were collected, about 3.0 cm^3 and placed in a polypropylene microtube. The lymph node collected was the popliteal. Due to the high sensitivity rate of the PCR technique, all measures to avoid cross-contamination were performed. Samples were refrigerated until arrival at the laboratory and preserved frozen at the temperature of -20°C [16].

The DNA sample that served as positive control was taken from the strain of *Leishmania infantum* (MHOM / BR / 74 / PP75) available by the René Rachou Researches Center from FIOCRUZ. The negative control was a PCR reaction without the presence of DNA.

Extraction of the DNA

DNA from blood, spleen, lymph nodes and liver samples was extracted with the use of the phenol-chloroform technique [12]. The DNA was kept in the freezer at temperature - 20 °C.

Molecular analysis

Molecular analysis was performed with the use of three types of PCR methodologies in different DNA targets of the *Leishmania* parasite (Table 1). The NESTED PCR with the use of an RNA coding region present in the minor ribosome subunit (SSU rRNA); the ITS1 which amplifies a non-coding region of the minor rRNA subunit located between the 5.8S and 18S genes and the MC-PCR which amplifies conserved sequences from the mini-circle of the kinetoplast.

Electrophoresis

The amplified products were separated on 1% agarose gels stained with Ethidium Bromide and visualized and captured on exposure to ultraviolet (UV) light using UV Gel Logic Transiluminated[2].

Statistical analysis

The Z test was used to compare the results among each PCR protocol in the different groups of dogs and among the different samples per protocol of PCR at the level of 5% of significance.

Table 1. PCR protocols used for LVC diagnosis.

Protocol / sequence	Amplification (bp)	PCR Conditions	PCR Cycles	Reference
Nested SSU rRNA-PCR 1st PCR: R221: GGTTCCTTTCCTGATTTACG R332: GGCCGGTAAAGGCCGAATAG 2nd PCR: R223: TCCATCGCAACCTCGGTT R333: AAAGCGGGCGCGGTGCTG	603 358	1st PCR 3.0 µL DNA, 4 mM of $MgCl_2$,10 U Taq Phneutria, dNTP 0.33 mM and 0.4 mM of each primer 1Xplug 2nd PCR 5.0 µL of product of the 1ºPCR, 4 mM of $MgCl_2$,10 U Taq Phneutria, dNTP 0.33 mM and 0.4 mM of each primer 1Xplug	1st PCR Denaturation 94ºC 30 s Annealing 60ºC 30 s Extension 72ºC 30 s Final Extension 72ºC 6 min 2nd PCR Change only on annealing 65ºC 30 s	Eys G.J.V *et.al*. [8] Cruz I. *et al*. [5]
ITS1-PCR LITSR: CTGGATCATTTTCCGATG L5.8S: TGATACCACTTATCGCACTT	311	2.0 µL DNA, 2 mM of $MgCl_2$,10 U Taq Phneutria, dNTP 1.0 mM and 0.5 mM primer 1Xplug	Denaturation 95ºC 20 s Annealing 53ºC 30 s Extension 72ºC 1 min Final Extension 72ºC 6min	El Tai NO *et al*. [21]
MC-PCR MC1: GTTAGCCGATGGTGGTCTTG MC2: CACCCATTTTTCCGATTTTG	447	2.0 µL DNA, 3 mM de $MgCl_2$,10 U Taq Phneutria, dNTP 0.4 mM e 0.5 mM primer 1Xplug	Denaturation 94ºC 30 s Annealing 55ºC 30 s Extension 72ºC 20 s Final Extension 72ºC 7min	Cortes S. *et al*. [4]

Bp: base pairs; PCR: polymerase chain reaction; MC: minicircle; ITS1: internal transcribed spacer 1; rRNA: ribosomal RNA gene; SSU: small subunit.

RESULTS

Clinical and anatomopathological signs of the dogs

During euthanasia and subsequent necropsy, the dogs were evaluated and classified for the presence of symptoms. Among the 50 dogs studied, 19 (38%) were in the asymptomatic group, all the animals showed healthy appearance, 15/50 (30%) of the dogs presented up to two symptoms, being classified as oligosymptomatic. Already the polysymptomatic dogs, 16/50 (32%) presented with the clinical status very compromised. The symptoms analyzed and the frequency in each group is described in Table 2.

From 50 dogs analyzed, 32 (64%) presented macroscopic lesions in the spleen with apparent granulations, being 14 of them polysymptomatic, 10 asymptomatic and 8 oligosymptomatic. The liver of 17 animals presented alterations, also with presence of granulations and whitish spots. Of these, 8 were polysymptomatic dogs, 6 oligosymptomatic and 3 asymptomatic.

Molecular diagnosis

Each PCR methodology used presented an amplification product. The NESTED SSUrRNA-PCR with primers 223/333 in 2ndPCR amplified a 358 base pair (bp) DNA fragment (Figure 1).

For the ITS1-PCR protocol, the pair of oligonucleotide used was LITSR, L5.8S that amplify a DNA fragment of 311 base pairs (bp) (Figure 2).

The MC1 and MC2 marker pair amplifies a DNA fragment of 447 base pairs (bp) conserved from the kinetoplast minicircle according to Figure 3.

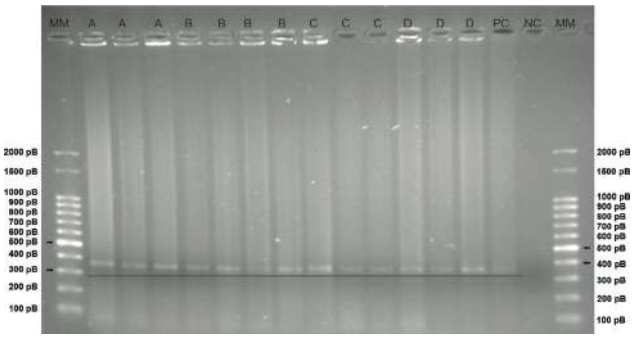


Figure1. 1.0% agarose gel with products of the NESTED-PCR reaction with the presence of a 358bp fragment. MM: molecular marker 100pB. A- Spleen samples; B- Lymph node samples; C- Liver samples; D- Blood samples. Positive control CP: *Leishmania infantum*; CN negative control: mixing of PCR reagents without DNA.

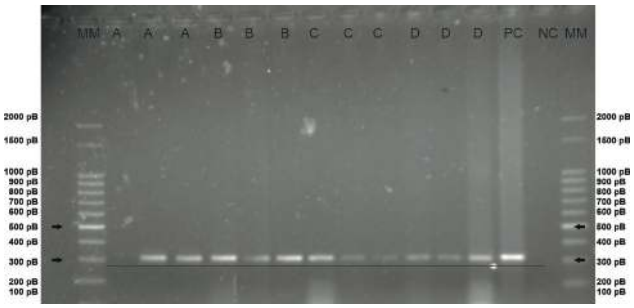


Figure 2. 1.0% agarose gel with products of the ITS-PCR reaction with the presence of fragment of 311pB. MM: molecular marker 100pB. A- Blood samples; B- Spleen samples; C- Liver samples; D- Lymph node samples. Positive control CP: *Leishmania infantum*; CN negative control: mixing PCR reagents without DNA.

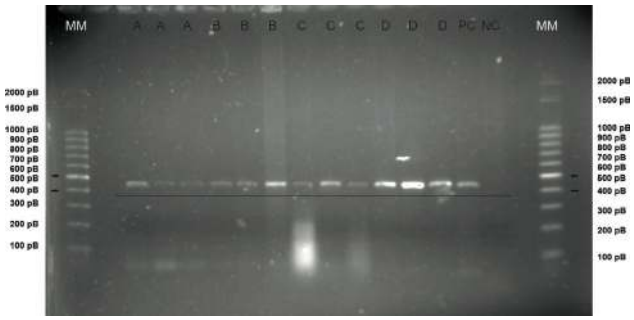


Figure 3. 1.0% agarose gel with products of the MC-PCR reaction with the presence of fragment of 447pB. MM: molecular marker 100pB. A- Blood samples; B- Spleen samples; C- Liver samples; D- Lymph node samples. Positive control CP: *Leishmania infantum*; CN negative control: mixing of PCR reagents without DNA.

Group of asymptomatic dogs

The comparative results of the three PCR methodologies performed on tissues of spleen, liver, lymph node and in blood of asymptomatic dogs are found in Table 3

In this group, only 1/19 (5.2%) dog presented the same result for all methodologies evaluated.

When analyzing the three assays, NESTED SSUrRNA-PCR, ITS1-PCR, MC-PCR applied to blood samples, the positivity ranged from 73.68%, 47.36%, 63.15% respectively. When comparing the spleen samples, we noticed an increase in the sensitivity of the tests to 78.94%, 57.89%, 84.21%. The lymph node samples only presented increase in relation to the other samples in the ITS1-PCR protocol, in which 15/19 (78.94%) were positive. In counterpart, in the other two tests (MC-PCR and NESTED SSUrRNA-PCR) there was a decrease in lymph node positivity compared to blood and other tissues.

The hepatic tissue was which presented the lowest sensitivity in the three methodologies evaluated with a variation of 26.31% in the NESTED SSUrRNA-PCR and ITS1-PCR to 15.7% in the MC-PCR.

Only 2/19 (10.5%) animals presented negative results in blood in the three PCR assays.

It was observed compatibility in the results of the samples in all the methodologies evaluated. It was observed that in the samples of the splenic tissue there was greater similarity in the positive results and the liver in the negative results (Figure 4).

Group of oligosymptomatic dogs

It was observed that in the ITS-PCR protocol, 13/15 (86.6%) of the dogs presented positive lymph node versus 8/15 (53.3%) in the NESTED SSUrRNA-PCR and 7/13 (46.6%) in the MC -PCR.

In the splenic tissue of oligosymptomatic dogs, the methodology that demonstrated the best result was MC-PCR since 13/15 (86.6%) of them presented amplification products.

In the blood tissue, it was observed a smaller difference between NESTED SSUrRNA-PCR and MC-PCR. Only 3/15 (20%) of the dogs presented negative results for the blood. The liver tissue presented a 60% positivity in NESTED SSUrRNA-PCR and 40% and 26.6% in ITS-1 and MC respectively (Table 4).

Figure 5 demonstrates the compatibility in the results of the samples in the 3 tests evaluated. In this group of dogs, the greatest similarity was found in the

blood and lymph node samples with 9 independent coincident results of being positive or negative.

Group of polysymptomatic dogs

The positivity for LVC in this group in NESTED SSUrRNA-PCR varied greatly, obtaining a better result in blood samples that was of 15/16 (93.75%) of the dogs, followed by spleen samples 11/16 (68.75%), lymph node 8/16 (50%) and liver 5/16 (31.25%).

The ITS1-PCR was the molecular test that showed greater efficiency in the detection of infected dogs in spleen samples (15/16) and lymph node (14/16); however, in the blood samples were what detected the least number of infected dogs (9/16).

The MC-PCR technique was more efficient in detecting the DNA of the parasite in spleen and blood samples with 87.5% and 75% of the dogs respectively. Among the tissues analyzed, the liver was one that presented the lowest detection rate in all techniques. This index ranged from 31.25% in NESTED SSUrRNA-PCR to 18.75% in the ITS1 and MC-PCR (Table 5).

In this group of polysymptomatic dogs, 3/16 (18.7%) of them presented the same result for all tissues and blood in the three PCR methodologies used. It was detected the presence of the DNA of the Leishmania sp. in blood samples of the 16/16 (100%) of the dogs.

Figure 6 demonstrates the compatibility in the results of the samples in the three tests evaluated per sample. Analyzing the data of the figure, it is observed that none of the protocols presented similarity in the negative results in the blood, spleen and lymph node.

All dogs

When analyzing the results of the NESTED SSUrRNA-PCR, MC-PCR and ITS1-PCR in the four types of studied samples in the 50 dogs, the NESTED SSUrRNA-PCR was which presented the highest amount of amplifications. Of the total of 200 samples, 124 amplified, demonstrating a sensitivity of 62% (Table 6).

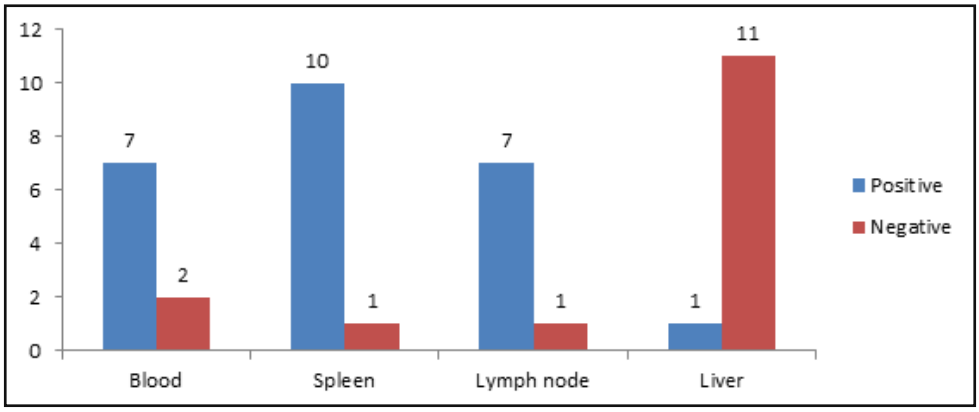


Figure 4. Relation of the compatibility of results per sample in the 3 types of PCR in the group of asymptomatic dogs.

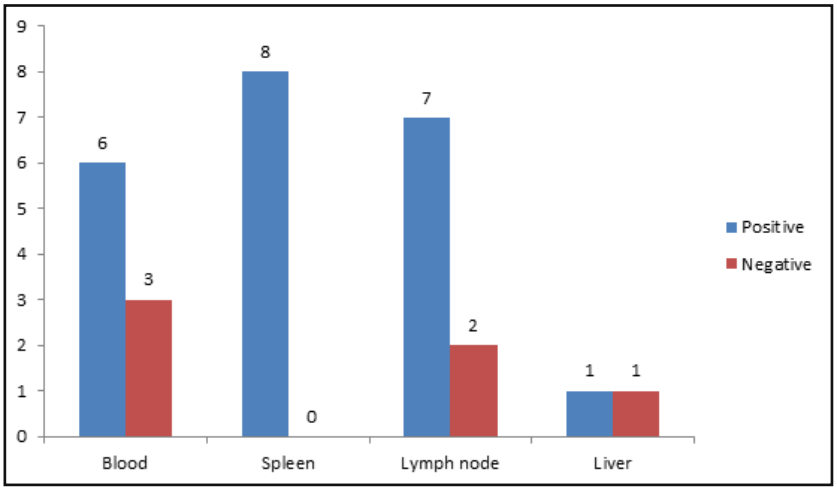


Figure 5. Relation of the compatibility of results by sample in the 3 types of PCR in the oligosymptomatic dog group.

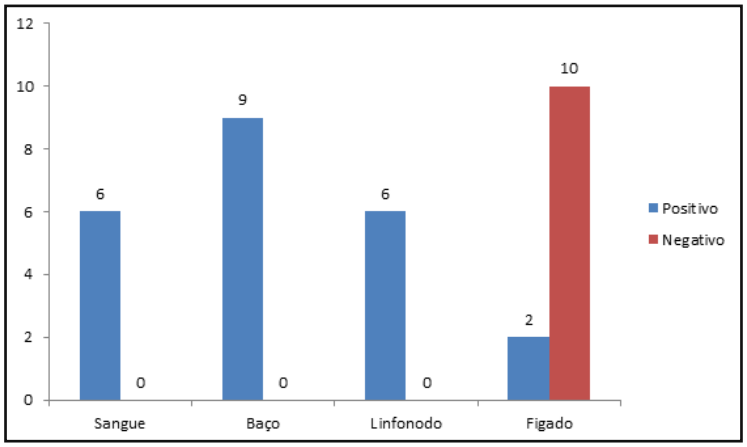


Figure 6. Relation of the compatibility of results by sample in the 3 types of PCR in the group of polysymptomatic dogs.

Table2. Frequency of the symptoms in the three groups of dogs.

Symptom	Asymptomatic	Oligosymptomatic	Polysymptomatic
Alopecia	0 (0%)	5/15 (33.3%)	15/16 (93.7%)
Onychogrifose	0 (0%)	14/15 (93.3%)	15/16 (93.7%)
Skin ulcerations	0 (0%)	7/15 (46.6%)	10/16 (62.5%)
Weight Loss	0 (0%)	4/15 (26.6%)	11/16 (68.7%)
Eye lesions	0 (0%)	0 (0%)	7/16 (43.7%)

Frequency in percentage.

Table 3. Results of the PCR analyzes in asymptomatic dogs.

Primer	Blood	Spleen	Lymph node	Liver
ITS1	9(47.37)Ab	11(57.89)Aab	15(78.95)Aa	5(26.32)Ab
NESTED	14(73.68)Aa	15 (78.95)Aa	12(63.16)Aa	5(26.32)Ab
MC	12(63.16)Aa	16 (84.21)Aa	11(57.89)Aa	3(15.79)Ab

Averages followed by the same capital letter in the column and lowercase in the row, do not differ from each other, according to the Z test for proportions at the level of 5% of significance.

Table 4. Results of PCR analysis in oligosymptomatic dogs.

Primer	Blood	Spleen	Lynph node	Liver
ITS1	6 (40)Ab	9 (60)Aab	13(86.67)Aa	6 (40)Ab
NESTED	10 (66.67)Aa	11(73.33)Aa	8 (53.33)Ba	9 (60)Aa
MC	11 (73.33)Aab	13(86.67)Aa	7 (46.67)Bb	4(26.67)Ab

Averages followed by the same capital letter in the column and lowercase in the row do not differ from each other, according to the Z test for proportions at the level of 5% of significance.

Table 5. Results of the PCR assays in polysymptomatic dogs.

Primer	Blood	Spleen	Lymph node	Liver
ITS1	9(56.25)Bb	15 (93.75)Aa	14(87.5)Aa	3(18.75)Ac
NESTED	15(93.75)Aa	11(68.75)Aab	8 (50)Bb	5(31.25)Ab
MC	12(75)ABab	14 (87.5)Aa	9(56.25)Bb	3(18.75)Ac

Averages followed by the same capital letter in the column and lowercase in the row do not differ from each other, according to the Z test for proportions at the level of 5% of significance.

Table 6. Results of the PCR assays of the 50 dogs.

Primer	Blood	Spleen	Lymph node	Liver
ITS1	25(50)Ba	37(74)Ab	41(82)Ab	13(26)Aa
NESTED	40(80)Aa	37(74)Aa	26(52)Bb	21(42)Ab
MC	32(64)ABb	43(86)Aa	27(54)Bb	10(20)Ac

Averages followed by the same capital letter in the column and lower case in the row do not differ from each other, according to the Z test for proportions at the level of 5% of significance.

DISCUSSION

According to data provided by the Center for Control of Zoonoses of Montes Claros, the period from January 2017 to February 2018, 2659 dogs had positive serology for Leishmaniasis. This data confirms the high index of reservoirs in the disease transmission cycle. Many dogs infected by the LVC may be asymptomatic for a long time [2]. In the present study, 19/50 (38%) of the dogs were under these conditions and among them only two were not detected the presence of the parasite DNA in the three tests performed. The result demonstrates that even without the presence of symptoms, the dog may be in the pathway of transmission of the disease, since the parasite is present in the blood tissue [1,22].

Among the asymptomatic dogs, (17/19) were positive for the ITS1, (19/19) for the NESTED SSUrRNA PCR and (19/19) for the MC PCR in at least 1 of the samples analyzed. The results demonstrate that the NESTED PCR with primers SSU rRNA and the MC presented 100% sensitivity in the diagnosis of apparently healthy dogs. The results corroborate with Albuquerque *et al*., (2017) [1]. who found high positivity for the same methodologies in bone marrow aspirate of asymptomatic dogs.

The analyzes with the use of the molecular target SSU rRNA identify the protozoan *Leishmania* at the genus level [8]. Already the MC1 and MC2 primers allowed to identify the region of the mini circle of the kDNA, which is usually one of the regions most studied for the diagnosis of LVC, since it is present in several copies per cell. The aforementioned initiators were used by Cortes *et al*. (2004) [4]. The authors obtained satisfactory results for the diagnosis of canine and human visceral leishmaniasis caused by the species *L. infantum* and *L. donovani*.

In the group of asymptomatic dogs, it was found a significant difference in the results of splenic and lymph node tissue in relation to hepatic tissue and blood tissue in the ITS1-PCR protocol. Solcá *et al*. (2014) [20] in their study suggest that the low sensitivity of these markers in the conventional PCR increases due to the presence of PCR inhibitors in the blood and the low parasitic load.

In the group of the 16 oligosymptomatic dogs, 100% of them were positive in the three methodologies analyzed in at least one of the samples. It was not observed significant difference between blood tissue and splenic tissue samples in the three PCR methodologies. However, in the lymph node and hepatic tissue samples was observed a significant difference highlighting a higher positivity in these tissues in the ITS1-PCR and NESTED SSU rRNA-PCR assays respectively.

In the group of polysymptomatic dogs, highlight a high positivity in the blood tissue samples in the NESTED SSU rRNA-PCR and in the samples of splenic tissue and lymph node in the ITS1-PCR.

According to the obtained results, when analyzing the 50 dogs, the splenic tissue samples performed better in all the trials, however the blood tissue sensitivity was also satisfactory in the NESTED SSU rRNA-PCR and MC-PCR. Blood tissue is a sample that is easier to access and with less invasive obtention. One of the concerns surrounding the use of spleen biopsy or its aspirate is the risk of severe bleeding or even death of the animal [16]. The collection of splenic tissue requires the participation of veterinarian with experience and with deep knowledge of canine anatomy, [3] which makes it difficult to use in an epidemiological inquiry. Therefore, when considering the health risks of the animal, blood becomes the best option for the molecular diagnosis of LVC in these two molecular targets, the NESTED SSU-rRNA and the kDNA.

The MC-PCR methodology used in the present work was performed with primers MC1 and MC2 that were designed specifically for the species *L. donovani* and *L. infantum* [1,4,18] The positivity for these

primers was 49/50 (98%) of the dogs that presented amplification in at least one of the analyzed samples. The observed result proves that the species prevalent in the city of Montes claros is *L. infantum*, since it is the species associated with the transmission of CVL in urban areas [19].

The possibility of serological cross-reaction and the occurrence of co-infection with other trypanosomatids makes the specificity rate to be below 100%, which has suggested the use of more accurate diagnostic tools [17] . The study confirmed that there was no difference between the serological results indirect immunofluorescence (RIFI) and immunoenzymatic assay (ELISA) with the adopted PCR protocols, once that 100% of the dogs researched had positive serology and positive molecular diagnosis in at least one of the analyzed materials and protocols.

According to Dourado (2007)[7] and Silveira *et al*. (2018) [19] PCR results can be influenced by parasite load, used methodology to DNA purification, primer selection, sample type, and presence of inhibitors. For this reason the difference in sensitivity of each methodology studied.

Regarding the samples, the work demonstrated that spleen and lymph node biopsies are considered efficient for molecular diagnosis of the LVC, since *Leishmania infantum* tends to migrate to these organs during the course of the disease. However, the risk to the animal should be considered in choosing the biological material to be used. Already the liver tissue was the least reactive in the three groups of analyzed dogs.

CONCLUSION

The present study demonstrated that the Nested SSU rRNA-PCR methodology is the best choice for the molecular diagnosis of the LVC in both asymptomatic and symptomatic dogs. As this methodology presented satisfactory results for blood tissue samples and taking into account the practicality and being a less invasive collection, this peripheral blood combination with Nested SSU rRNA-PCR was shown in this work the best methodology for the molecular diagnosis of canine Leishmaniasis.

MANUFACTURERS

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***Ethical approval*.** The present study was evaluated by the Commission for Ethics in Animal Experimentation and Welfare (CEEBEA) of the State University of Montes Claros and received a favorable opinion with case number No 151.

***Declaration of interest*.** The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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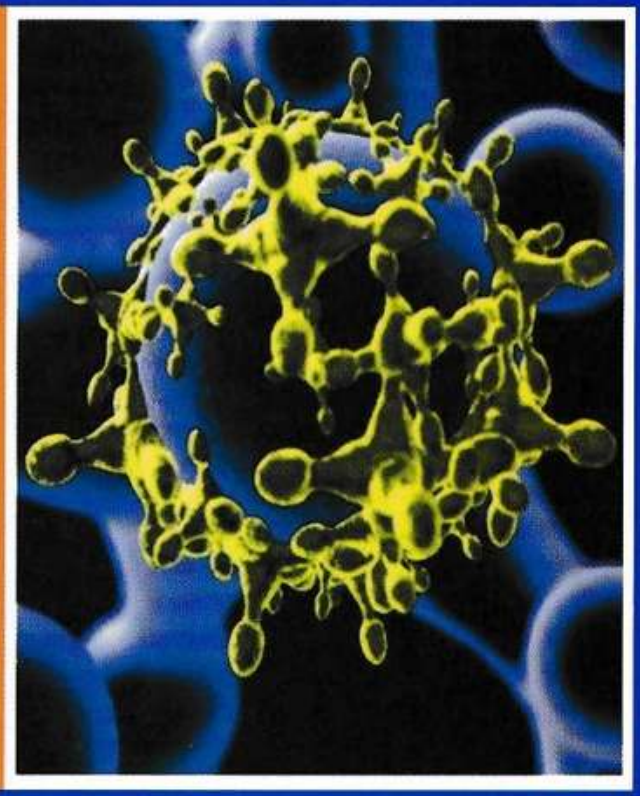
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Veterinary Microbiology

Practices



Didactic Series

Maria Aparecida Scatamburlo Moreira
Abelardo Silva Júnior
Hanna Carolina Campos Ferreira
Fabio Alessandro Pieri
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Veterinary Microbiology Practices

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2015

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PRESENTATION

Veterinary Microbiology: Practices provides Veterinary Medicine students, through a theoretical and practical approach, with an introduction to the main laboratory techniques in Veterinary Microbiology, as well as the practical classes adopted in the VET 140 course at the Federal University of Viçosa (UFV). Culture media are intended for the artificial cultivation of microorganisms and, therefore, must contain the substances required for their growth and multiplication. The choice of technique varies according to the type of medium and the purpose of the cultivation. Before the laboratory investigation is conducted, the complete case history must be sent to the laboratory together with the samples. The data will assist in deciding on a series of procedures to be followed, thus directing the investigation toward the possible agents involved. Microorganisms can be identified through the use of phenotypic and genotypic methodologies, as well as according to their staining characteristics (cell body, capsule, endospore, and flagellum), pathogenicity, and metabolic activities. The identification of fungi is largely based on their morphology, considering macroscopic and microscopic characteristics. In addition to classical techniques, such as cell culture and hemagglutination, molecular techniques, such as PCR and its derivatives, are very important for the identification of viruses and other microorganisms. The study of Veterinary Microbiology is constantly being updated, as it is a dynamic research field of fundamental importance in the training of professionals in the Health Sciences, with a focus on learning sample collection and the identification of pathogenic agents.

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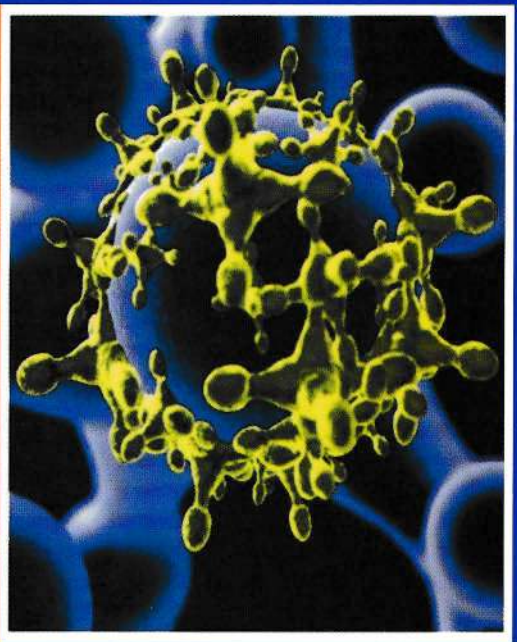
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Microbiologia Veterinária

Práticas



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Apresentação

Microbiologia Veterinária: práticas traz aos alunos de Medicina Veterinária, numa abordagem teórica e prática, a introdução sobre as principais técnicas laboratoriais em Microbiologia Veterinária, bem como as aulas práticas adotadas na disciplina VET 140, da Universidade Federal de Viçosa (UFV). Os meios de cultura são destinados ao cultivo artificial de microrganismos, portanto devem conter as substâncias exigidas para seu crescimento e multiplicação. A escolha da técnica varia de acordo com o tipo de meio e a finalidade do cultivo. Antes de a investigação laboratorial ser realizada, o completo histórico do caso deve ser enviado ao laboratório juntamente com as amostras. Os dados auxiliarão na decisão de uma série de procedimentos a serem seguidos, direcionando, assim, para os possíveis agentes envolvidos. Os microrganismos podem ser identificados por meio da utilização de metodologias fenotípicas e genotípicas, bem como quanto à sua coloração (corpo, cápsula, endósporo, flagelo), patogenicidade e atividades metabólicas. A identificação dos fungos é, em grande parte, baseada em sua morfologia, considerando-se aspectos macroscópicos e microscópicos. Além das técnicas clássicas, como cultivo celular e hemoaglutinação, as técnicas moleculares, como PCR e suas derivações, são muito importantes para identificação de vírus e demais microrganismos. O estudo da Microbiologia Veterinária encontra-se em constante processo de atualização, posto ser uma área de pesquisa dinâmica de fundamental importância na formação de profissionais da área de Saúde, com foco na aprendizagem da coleta de amostras e identificação de agentes patogênicos.

Microbiologia Veterinária: práticas traz aos estudantes de Veterinária, numa abordagem teórica e prática, a introdução sobre as principais técnicas laboratoriais em Microbiologia Veterinária, bem como as aulas práticas adotadas na disciplina VET 140 da Universidade Federal de Viçosa (UFV). Os meios de cultura são destinados ao cultivo artificial de micro-organismos, portanto devem conter as substâncias exigidas para seu crescimento e multiplicação. A escolha da técnica varia de acordo com o tipo de meio e a finalidade do cultivo. Antes de a investigação laboratorial ser realizada, o completo histórico do caso deve ser enviado ao laboratório juntamente com as amostras. Os dados auxiliarão na decisão de uma série de procedimentos a serem seguidos, direcionando, assim, para os possíveis agentes envolvidos. Os micro-organismos podem ser identificados utilizando metodologias fenotípicas e genotípicas e quanto à sua coloração (corpo, cápsula, endósporo, flagelo), patogenicidade e atividades metabólicas. A identificação dos fungos é, em grande parte, baseada em sua morfologia, considerando-se aspectos macroscópicos e microscópicos. Além das técnicas clássicas como cultivo celular e hemoaglutinação, as técnicas moleculares, como PCR e suas derivações, são muito importantes para identificação de vírus, como também dos demais micro-organismos. O estudo da Microbiologia Veterinária encontra-se em constante processo de atualização, posto ser uma área de pesquisa dinâmica de fundamental importância na formação de profissionais da área de Saúde, com foco na aprendizagem da coleta de amostras e identificação de agentes patogênicos.

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VETERINARY MEDICINE
RURAL UNIVERSITY – RJ

Certificate

Federal Rural University of Rio de Janeiro

We hereby certify that

Hanna Carolina Campos Ferreira

participated as Coordinator of the Equine Cycle of the Mini-Course on Embryo Transfer in Equines, and as a member of the organizing committee of the **22nd Veterinary Medicine Week** of the Federal Rural University of Rio de Janeiro, held from May 30 to June 3, 2005.

Seropédica, June 3, 2005

Leonardo da Silva Castro
DAGH General Coordination

João Telhado
General Coordinator of the 22nd SEMEV

Laerte Grisi
Director of the Institute of Veterinary Medicine

DAGH - Guilherme Hermsdorff Student Association
SEMEV - Veterinary Medicine Week

DECLARATION

I hereby declare, for all due purposes, that student Hanna Carolina Campos Ferreira, duly enrolled during the period in which the project was carried out in the Veterinary Medicine program at UFRRJ under registration No. 200306521-9, actively participated in the implementation of the extension project entitled "HEALTH EDUCATION IN ELEMENTARY SCHOOLS – PILOT SCHOOL: CAIC PAULO DACORSO FILHO," completing a total of 40 hours of activities. I further declare that the project is registered in the SIEX-BRASIL program and has already been approved at a Department meeting and forwarded to the Departmental Council and Extension Chamber.

In witness whereof, I sign this document.

Seropédica, November 14, 2006.

Edson Jesus de Souza – Professor DESP/IV/UFRRJ
Project Advisor

*DESP - Department of Epidemiology and Public Health
IV - Institute of Veterinary Medicine
UFRRJ - Federal Rural University of Rio de Janeiro

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Date: September 24, 2026

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MEDICINA VETERINÁRIA
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Certificado

Universidade Federal Rural do Rio de Janeiro

Certificamos que

Hanna Carolina Campos Ferreira

participou como Coordenadora do Ciclo de Eqüinos, do Mini-curso de Transferência de Embriões em Eqüinos e como membro da organização

da **XXII Semana do Médico Veterinário** da Universidade Federal Rural do Rio de Janeiro, no período de 30 de maio a 03 de junho de 2005.

Seropédica, 03 de junho de 2005

Leonardo da Silva Castro
Coordenação Geral do DAGH

João Telhado
Coordenador Geral da XXII SEMEV

Laerte Grisi
Diretor do Instituto de Veterinária

Declaração

Declaro, para os devidos fins, que a aluna Hanna Carolina Campos Ferreira, regularmente matriculada no período de desenvolvimento do projeto, no curso de Medicina Veterinária da UFRRJ sob o número de matrícula 200306521-9, participou ativamente na realização do projeto de extensão intitulado "EDUCAÇÃO SANITÁRIA EM ESCOLAS DE ENSINO BÁSICO - ESCOLA PILOTO: CAIC PAULO DACORSO FILHO", perfazendo um total de 40 horas de atividades. Declaro ainda, que o projeto está inscrito no programa SIEX-BRASIL, e já foi aprovado em reunião de Departamento e encaminhado ao Conselho Departamental e Câmara de Extensão.

Sendo verdade, firmo o presente documento,

Seropédica, 14 de Novembro de 2006.

Edson Jesus de Souza – Professor DESP/IV/UFRRJ
Orientador do projeto

RAEX

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Vice-President's Office for Outreach and Culture

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We hereby certify that HANNA CAROLINA CAMPOS FERREIRA participated in the outreach event "ACADEMIC INTEGRATION SYMPOSIUM – SIA 2011," registered in the Outreach Activities Registration System, RAEX, under No. EVE-356/2011, held from 10/17/2011 to 10/22/2011, as the Instructor of the topic: "Fundamentals of Virological Diagnosis in Veterinary Medicine." Total workload: 480 minutes.

Viçosa, January 8, 2016.

Clóvis Andrade Neves
Vice President for Outreach and Culture

Federal University of Viçosa

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Viçosa, January 8, 2016.

Clóvis Andrade Neves
Vice President for Outreach and Culture

Federal University of Viçosa

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CERTIFICADO

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Viçosa, 08 de janeiro de 2016.

Clóvis Andrade Neves
Pró Reitor de Extensão e Cultura

Universidade Federal de Viçosa

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Registro de Atividades de Extensão

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Viçosa, 08 de janeiro de 2016.

Clóvis Andrade Neves
Pró Reitor de Extensão e Cultura

Universidade Federal de Viçosa

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DIVISION OF CULTURAL AFFAIRS
Phone: 3899-2450/2451 – Fax: 3899-2450 – E-mail: dac@ufv.br

DECLARATION

I hereby declare, for all necessary purposes, that **HANNA CAROLINA CAMPOS FERREIRA** was a member of the **UFV Choir** from November 2006 to December 2011, having regularly participated in all of the group's activities during this period.

In witness whereof,
I sign this declaration.

Viçosa, March 7, 2012.

P/ Geraldo Leandro

Rogério Moreira Campos
Conductor

Geraldo Leandro da Silva Filho
Head of the Division of Cultural Affairs
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DECLARAÇÃO

Declaro, para os fins que se fizerem necessários, que **HANNA CAROLINA CAMPOS FERREIRA** integrou o Coral da UFV, no período de novembro 2006 a dezembro de 2011, tendo participado com assiduidade de todas as atividades do grupo neste período.

Por ser verdade,
firmo a presente.

Viçosa, 07 de março de 2012.

p/ Geraldo Leandro

Rogério Moreira Campos
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Chefe da Divisão de Assuntos Culturais
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I hereby certify, pursuant to Article 47, Section IV, of the General Regulations of UFMG, that HANNA CAROLINA CAMPOS FERREIRA, registration number 2010745480, passed the following activity(ies) taken as individual course(s) in the second semester of 2010:

Activity Course	Workload	Credits	Points
DIP MV891 U - SPECIAL TOPICS IN INFECTIOUS DISEASES OF REPRODUCTION INFECTIOUS DISEASES OF REPRODUCTION	60	04	90

Belo Horizonte, December 20, 2010.

Head of the Academic Affairs Section or DRCA

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E-mail: cap@vet.ufmg.br

UPDATED GRADUATE COURSE SYLLABI

Department: Preventive Veterinary Medicine			
Course: Special Topics in Infectious Diseases of Reproduction			
Code: **MVP 891**			
Course Load:	Theory:	**45** hours	Credits: **4**
60	Practical:	**15** hours	

Syllabus: The course presents and discusses the epidemiology, diagnosis, and control of infectious diseases in cattle.

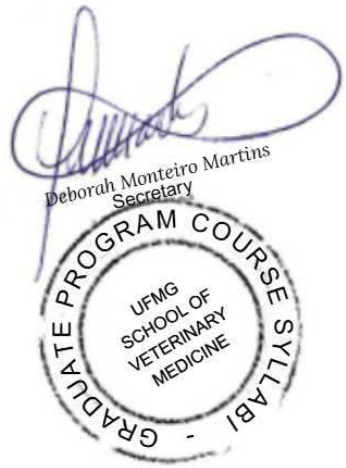
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ANDREWS, A.H., ed. **Bovine Medicine: Diseases and Husbandry of Cattle**. London: Blackwell Scientific, 1994.
CHARLES, T.P. & FURLONG, J., ed. **Doenças dos bovinos de leite adultos**. Coronel Pacheco: EMBRAPA, 1992.
KIRKBRIDE, C.A. **Laboratory Diagnosis of Livestock Abortion**. 3rd ed. Ames: Iowa State University Press, 1990.

Internet Search Sites

http://www.ncbi.nlm.nih.gov/entrez/query.fegi
http://www.periodicos.capes.gov.br/portugues/index.jsp

Journals (Qualis A International List)
Veterinary Microbiology
American Journal of Veterinary Research
Journal of the American Veterinary Medical Association
Journal of Dairy Science
Journal of Dairy Research
Journal of Veterinary Medicine B
Veterinary Record
Canadian Journal of Veterinary Research
Preventive Veterinary Medicine
1. Theriogenology



I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 22, 2026

MINISTÉRIO DA EDUCAÇÃO

UNIVERSIDADE FEDERAL DE MINAS GERAIS

DEPARTAMENTO DE REGISTRO E CONTROLE ACADÊMICO

CERTIFICADO

Certifico, nos termos do artigo 47 - seção IV - do Regimento Geral da UFMG, que HANNA CAROLINA CAMPOS FERREIRA, número de registro 2010745480, foi aprovado(a) na(s) atividade(s) cursada(s) como isolada(s) no segundo semestre de 2010, abaixo relacionada(s):

Atividade	Carga Horária	Créditos	Pontos
DIP MVP891 U - TOP.ESP. EM DOENCAS INFEC. DA REPRODUCAO DOENÇAS INFECCIOSAS DA REPRODUÇÃO	60	04	90

Belo Horizonte, 20 de dezembro de 2010.

Chefe da Seção de Ensino ou DRCA

Déborah Monteiro Martins
Secretária

ESCOLA DE VETERINÁRIA DA UFMG
COLEGIADO DOS PROGRAMAS DE PÓS-GRADUAÇÃO
Av. Antônio Carlos 6627 - CP 567 - CEP 31270-901 - Belo Horizonte- MG
FONES (031) 3409 2056 - 3409 2057 FAX (031) 3409 2059
E-mail cap@vet.ufmg.br

Atualização de Ementas – Disciplinas de Pós-Graduação

Departamento: de Medicina Veterinária Preventiva

Disciplina: Topicos Especiais em Doenças Infecciosas da Reprodução

Código: **MVP 891**

Carga horária	Teórica:	**45** Horas	Créditos:**4**
60	Prática:	**15** Horas	

Ementa: A disciplina apresenta e discute a epidemiologia, diagnóstico e controle de doenças infecciosas dos bovinos.

Bibliografia Geral Recomendada

ANDREWS, A.H. ed. **Bovine Medicine: Diseases and husbandry of cattle**. London: Blackwell Scientific, 1994.
CHARLES, TP & FURLONG, J ed. **Doenças dos bovinos de leite adultos**. Coronel Pacheco. EMBRAPA, 1992.
KIRKBRIDE, CA. **Laboratory Diagnosis of Livestock abortion.** 3 ed., Iowa State University Press, Ames. 1990.

Internet - sites de buscas:

. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi
. http://www.periodicos.capes.gov.br/portugues/index.jsp

Periódicos (lista Qualis A – Internacional)
Veterinary Microbiology
American Journal Veterinary Research
Journal of American Veterinary Medical Association
Journal of Dairy Science
Journal of Dairy Research
Journal Veterinary Medicine B
Veterinary Record
Canadian Journal Veterinary Research
Preventive Veterinary Medicinegy
1. Therogenology

Déborah Monteiro Martins
Secretária
PROGRAMA DE CURSOS DE PÓS-GRADUAÇÃO
ESCOLA DE VETERINÁRIA DA UFMG

III MINAS GERAIS SYMPOSIUM ON FOOD MICROBIOLOGY
III FORUM FOR DEBATES ON HEALTH SURVEILLANCE

We hereby certify, for all due purposes, that

Hanna Carolina Campos Ferreira *participated as a course monitor for the course* "Fundamentals of Good Manufacturing Practices and Hazard Analysis and Critical Control Points", *with a workload of 16 hours, during the*

III Minas Gerais Symposium on Food Microbiology and III Forum for Debates on Health Surveillance, promoted by the Department of Food Technology of the Federal University of Viçosa (DTA/UFV), held from April 14 to 18, 2008, at the Federal University of Viçosa Campus – Minas Gerais.

Viçosa, April 18, 2008.

Regina Célia Santos Mendonça
EVENT COORDINATOR

José Benício Paes Chaves
PRESIDENT, SBCTA – MINAS GERAIS REGIONAL

Organized by: **Federal University of Viçosa**
Department of Food Technology – DTA
Brazilian Society of Food Science and Technology – Minas Gerais Regional (SBCTA)

III MINAS GERAIS SYMPOSIUM ON FOOD MICROBIOLOGY
III FORUM FOR DEBATES ON HEALTH SURVEILLANCE

We hereby certify, for all due purposes, that

Hanna Carolina Campos Ferreira

participated as a monitor at the

III Minas Gerais Symposium on Food Microbiology and III Forum for Debates on Health Surveillance, promoted by the Department of Food Technology of the Federal University of Viçosa (DTA/UFV), held from April 14 to 18, 2008, at the Federal University of Viçosa Campus – Minas Gerais.

Viçosa, April 18, 2008.

Regina Célia Santos Mendonça
EVENT COORDINATOR

José Benício Paes Chaves
PRESIDENT, SBCTA – MINAS GERAIS REGIONAL

Organized by: **Federal University of Viçosa**
Department of Food Technology – DTA
Brazilian Society of Food Science and Technology – Minas Gerais Regional (SBCTA)

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 21, 2026

III SIMPÓSIO MINEIRO DE MICROBIOLOGIA DE ALIMENTOS
III FÓRUM DE DEBATES SOBRE VIGILÂNCIA SANITÁRIA

Certificamos, para os devidos fins, que

Hanna Carolina Campos Ferreira *participou como monitora do curso:*

Noções de Boas Práticas de Fabricação e Análise de Perigos e Pontos Críticos e Controle *com carga horária de 16 horas durante o*

III Simpósio Mineiro de Microbiologia de Alimentos e III Fórum de Debates sobre Vigilância Sanitária, promovido pelo Departamento de Tecnologia de Alimentos da Universidade Federal de Viçosa (DTA/UFV) realizado de 14 a 18 de abril de 2008, no Campus da Universidade Federal de Viçosa - Minas Gerais.

Viçosa, 18 de Abril de 2008.

Regina Célia Santos Mendonça
COORDENADORA DO EVENTO

José Benício Paes Chaves
PRESIDENTE SBCTA - REGIONAL MG

Realização: **Universidade Federal de Viçosa**
Departamento de Tecnologia de Alimentos - DTA
Sociedade Brasileira de Ciências e Tecnologia de Alimentos - Regional MG

III SIMPÓSIO MINEIRO DE MICROBIOLOGIA DE ALIMENTOS
III FÓRUM DE DEBATES SOBRE VIGILÂNCIA SANITÁRIA

Certificamos, para os devidos fins, que

Hanna Carolina Campos Ferreira

participou como monitor no

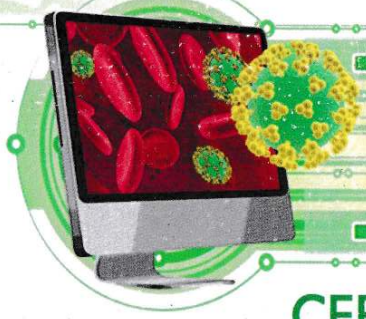
III Simpósio Mineiro de Microbiologia de Alimentos e III Fórum de Debates sobre Vigilância Sanitária, promovido pelo Departamento de Tecnologia de Alimentos da Universidade Federal de Viçosa (DTA/UFV) realizado de 14 a 18 de abril de 2008, no Campus da Universidade Federal de Viçosa - Minas Gerais.

Viçosa, 18 de Abril de 2008.

Regina Célia Santos Mendonça
COORDENADORA DO EVENTO

José Benício Paes Chaves
PRESIDENTE SBCTA - REGIONAL MG

Realização: **Universidade Federal de Viçosa**
Departamento de Tecnologia de Alimentos - DTA
Sociedade Brasileira de Ciências e Tecnologia de Alimentos - Regional MG



III INTERNATIONAL BIOINFORMATICS WORKSHOP ON BIOLOGY /MOLECULAR EPIDEMIOLOGY AND VIRUS EVOLUTION

CERTIFICATE OF ATTENDANCE

certifies that Hanna Carolina Campos Ferreira has attended the educational activity entitled Third International Bioinformatics Workshop on Molecular Biology and Evolution of Viruses at Escola de Saúde Pública do Estado de Minas Gerais (ESP), Belo Horizonte-MG, Brazil, on 30th to November 4th to December of 2015.

This activity was a total of 46 hours.

Luiz Carlos Junior Alcântara
Workshop Organizer

Luciane Amorim Santos
Workshop Organizer

CPqRR - Fiocruz Minas

Ministério da Saúde
FIOCRUZ
Fundação Oswaldo Cruz
Centro de Pesquisas Gonçalo Moniz

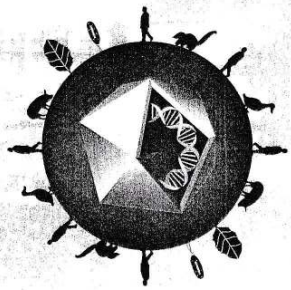
CAPES

CGPG/VPEIC

certificate

XXIII Congresso Brasileiro de Virologia

VII Encontro de Virologia do Mercosul



We hereby certify that the abstract entitled

DISTRIBUTION OF ANTIBODIES AND DWA ELIMINATION OF BOVINE HERPESVIRUS (BOHV1 AND 5) IN MILK: IMPLICATIONS FOR VIRAL PATHOGENESIS IN NATURALLY INFECTED DAIRY COWS

authored by

Ferreira, H.C.C., Santos, M.R. , Fonseca, M.A.M. , Carvalho, F.G.F. , Almeida, M.R. , Silva Júnior, A.

was presented at the XXIII Brazilian Congress of Virology & VII Mercosur Meeting of Virology (XXIII CBV), from September 30 to October 3, 2012, in Foz do Iguaçu - PR, Brazil, at the Rafain Palace Hotel & Convention Center.

Organization

Dr. Amauri Alcindo Alfieri | Organizing Committee

XXI Encontro Nacional de Virologia
XXI National Meeting of Virology
V Encontro de Virologia do Mercosul
V Mercosur Meeting of Virology

17 a 20 Outubro de 2010 | Gramado Rio Grande do Sul Brasil
Local do evento: FAURGS

CERTIFICATE

HANNA CAROLINA CAMPOS FERREIRA

Attended the XXI National Meeting of Virology - V Virology Meeting of Mercosul, held on October 17 to 20 at the Center of Training and Events of UFRGS - FAURGS, Gramado, RS, Brazil, as participant, fulfilling a total of 40 hours of activities.

October, 20th, 2010

Paulo Roehe
Presidente Executivo do Congresso

Edison Elias da Silva
Presidente da Comissão Cientifica

Realização

Apoio

CNPq

XXI Encontro Nacional de Virologia
XXI National Meeting of Virology
V Encontro de Virologia do Mercosul
V Mercosur Meeting of Virology

17 a 20 Outubro de 2010 | Gramado Rio Grande do Sul Brasil
Local do evento: FAURGS

CERTIFICATE

The work entitled

SUBCLINICAL DISEASE ASSOCIATED WITH INFECTION BY Porcine circovirus 2 (PCV-2) ON SWINE HERD

from the authors

1Simão, G. M. R, 2Silva Júnior, A., 3Silva, F.M.F, 4Ferreira, H.C.C., 5Fausto, M.C., 6Lobato, Z.I.P, 7Fietto, J.L.R, 8Almeida, M.R.

was presented orally at the XXI National Meeting of Virology and V Virology Meeting of Mercosul, held on October 17 to 20, 2010 at the Center of Training and Events of UFRGS - FAURGS Gramado, RS, Brazil.

October 20th, 2010

Paulo Roehe
Presidente Executivo do Congresso

Edison Elias da Silva
Presidente da Comissão Cientifica

Realização

Apoio

CNPq

IV SIMLEITE

IV Simpósio Nacional de Bovinocultura Leiteira

4th National Symposium of Dairy Cattle

II Simpósio Internacional de Bovinocultura Leiteira

2nd International Symposium of Dairy Cattle

CERTIFICATE

Hanna Carolina Campos Ferreira

participated in the 4th National Symposium on Dairy Cattle and 2nd International Symposium on Dairy Cattle, held at the Federal University of Viçosa, organized by the Departments of Animal Science and Veterinary Medicine, from October 31 to November 2, 2013, with a total workload of 30 hours, as a **Participant**.

Viçosa, Minas Gerais, November 2, 2013.

Marcos Inácio Marcondes
Organizing Committee

Cristina Mattos Veloso
Organizing Committee

Organization

Sponsorship

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

IV SIMLEITE

IV Simpósio Nacional de Bovinocultura Leiteira
4th National Symposium of Dairy Cattle
II Simpósio Internacional de Bovinocultura Leiteira
2nd International Symposium of Dairy Cattle

CERTIFICADO

Hanna Carolina Campos Ferreira

Participou do IV Simpósio Nacional de Bovinocultura Leiteira e II Simpósio Internacional de Bovinocultura Leiteira, realizado na Universidade Federal de Viçosa, promovido pelos Departamentos de Zootecnia e Veterinária, no período de 31 de outubro a 02 de novembro de 2013, com carga horária total de 30h, na qualidade de **Participante.**

Viçosa/MG, 02 de novembro de 2013.

Marcos Inácio Marcondes
Comissão Organizadora

Cristina Mattos Veloso
Comissão Organizadora

Organização

Patrocínio

FEDERAL UNIVERSITY OF VIÇOSA
VICE-PRESIDENT'S OFFICE FOR ACADEMIC AFFAIRS

Declaration

We hereby declare that **HANNA CAROLINA CAMPOS FERREIRA** participated in the "***Diversity and Accessibility in Higher Education Seminar***," conducted by Eveline Torres Pereira, professor in the Department of Physical Education, on October 4, 2012, as part of the Continuing Education Program for Reuni Scholarship Holder of the Federal University of Viçosa, Minas Gerais.
Workload: 2 hours.

Viçosa, October 5, 2012.

Prof. Vicente de Paula Lelis
Vice-President's Office for Academic Affairs
Vice-President

Prof Leci Soares de Moura e Dias
Directorate of Special Programs
Director

Directorate of Special Programs

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

Universidade Federal de Viçosa
Pró-Reitoria de Ensino

Declaração

Declaramos que **HANNA CAROLINA CAMPOS FERREIRA** participou do Seminário *"Diversidade e Acessibilidade no Ensino Superior"*, ministrado por Eveline Torres Pereira, professora do Departamento de Educação Física, no dia 04 de outubro de 2012, como parte do Programa de Formação Continuada de Bolsistas Reuni da Universidade Federal de Viçosa, Minas Gerais.
Carga horária: 2 horas.

Viçosa, 05 de outubro de 2012.

Prof. Vicente de Paula Lelis
Pró-Reitoria de Ensino
Pró-Reitor

Profª Leci Soares de Moura e Dias
Diretoria de Programas Especiais
Diretora

Diretoria de Programas Especiais

FEDERAL UNIVERSITY OF VIÇOSA
VICE-PRESIDENT'S OFFICE FOR ACADEMIC AFFAIRS

Declaration

We hereby declare that **HANNA CAROLINA CAMPOS FERREIRA** participated in the seminar ***"The Curriculum: Prescription and Teaching Practice,"*** conducted by Maria das Graças Soares Floresta, professor in the Department of Education at UFV, on April 18, 2012, as part of the Continuing Education Program for Reuni Scholarship Holder of the Federal University of Viçosa, Minas Gerais.
Workload: 2 hours.

Viçosa, April 19, 2012.

Prof. Vicente de Paula Lelis
Vice-President's Office for Academic Affairs
Vice-President

Prof Leci Soares de Moura e Dias
Directorate of Special Programs
Director

Directorate of Special Programs

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

Universidade Federal de Viçosa
Pró-Reitoria de Ensino

Declaração

Declaramos que **HANNA CAROLINA CAMPOS FERREIRA** participou do Seminário ***"O currículo: a prescrição e a prática docente"***, ministrado por Maria das Graças Soares Floresta, professora do Departamento de Educação da UFV, no dia 18 de abril de 2012, como parte do Programa de Formação Continuada de Bolsistas Reuni da Universidade Federal e Viçosa, Minas Gerais.
Carga horária: 2 horas.

Viçosa, 19 de abril de 2012.

Prof. Vicente de Paula Lelis
Pró-Reitoria de Ensino
Pró-Reitor

Profª Leci Soares de Moura e Dias
Diretoria de Programas Especiais
Diretora

Diretoria de Programas Especiais

VETERINARY MEDICINE 2012

RESEARCH SYMPOSIUM

4th GRADUATE STUDIES WEEK IN VETERINARY MEDICINE – UFV

C E R T I F I C A T E

We hereby certify that **HANNA CAROLINA CAMPOS FERREIRA** participated in the **2012 Veterinary Medicine Research Symposium** and **the 4th Graduate Studies Week in Veterinary Medicine – UFV**, held from September 26 to 29, 2012, in Viçosa, Minas Gerais, Brazil, as a **CONFERENCE SPEAKER**.

Viçosa, September 29, 2012.

Prof. Luís Augusto Nero
Coordinator of the Graduate Studies Program in Veterinary Medicine – UFV
Coordinator of the 2012 Veterinary Medicine Research Symposium

Prof. Jac_son Victor de Araújo
Head of the Department of Veterinary Medicine – UFV

Organized by:

Pós-Graduação Medicina Veterinária

Universidade Federal de Viçosa

DVT Departamento de Veterinária - UFV

Sponsorship:

CAPES

CRMV-MG

FAPEMIG FUNARBE

Promega

Prodimol Alcon

GERA

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

SIMPÓSIO DE PESQUISA EM MEDICINA VETERINÁRIA 2012

IV SEMANA DA PÓS GRADUAÇÃO EM MEDICINA VETERINÁRIA - UFV

CERTIFICADO

Certificamos que **HANNA CAROLINA CAMPOS FERREIRA** participou do **Simpósio de Pesquisa em Medicina Veterinária 2012** e **IV Semana da Pós-Graduação em Medicina Veterinária – UFV** realizado de 26 a 29 de setembro de 2012, em Viçosa, Minas Gerais, Brasil, na categoria de **CONFERENCISTA.**

Viçosa, 29 de setembro de 2012.

Prof. Luís Augusto Nero
Coordenador do Programa de Pós-Graduação em Medicina Veterinária – UFV
Coordenador do Simpósio de Pesquisa em Medicina Veterinária 2012

Prof. Jac..son Victor de Araújo
Chefe do Departamento de Veterinária – UFV

Realização: Pós-Graduação Medicina Veterinária; Universidade Federal de Viçosa; DVT Departamento de Veterinária - UFV

Patrocínio: CAPES; CRMV-MG; FAPEMIG FUNARBE; Promega; Prodimal Alcon; GERA

VETERINARY MEDICINE 2012

RESEARCH SYMPOSIUM

4th GRADUATE STUDIES WEEK IN VETERINARY MEDICINE – UFV

C E R T I F I C A T E

We hereby certify that the paper **Serology and Shedding of Bovine herpesvirus 1 (BoHV-1) and Bovine herpesvirus 5 (BoHV-5) through Milk: Implications for the Pathogenesis of Naturally Infected Dairy Cows**, authored by **FERREIRA, Hanna Carolina Campos; SANTOS, Marcus Rebouças; CARVALHO, Fernanda Gomes de Freitas; FONSECA, Mariana D'Agosto Miguel; ALMEIDA, Márcia Rogéria; SILVA JUNIOR, Abelardo**, was presented in the poster session of the **2012 Veterinary Medicine Research Symposium** and **4th Graduate Studies Week in Veterinary Medicine – UFV**, held from September 26 to 29, 2012, in Viçosa, Minas Gerais, Brazil.

Viçosa, September 29, 2012.

Prof. Luís Augusto Nero
Coordinator of the Graduate Studies Program in Veterinary Medicine – UFV
Coordinator of the 2012 Veterinary Medicine Research Symposium

Prof. Jac..son Victor de Araújo
Head of the Department of Veterinary Medicine – UFV

Organized by:

Pós-Graduação Medicina Veterinária

Universidade Federal de Viçosa

DVT Departamento de Veterinária - UFV

Sponsorship:

CAPES

CRMV-MG

FAPEMIG FUNARBE

Promega

Prodimol Alcon

GERA

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

SIMPÓSIO DE PESQUISA EM MEDICINA VETERINÁRIA 2012

IV SEMANA DA PÓS GRADUAÇÃO EM MEDICINA VETERINÁRIA - UFV

CERTIFICADO

Certificamos que o trabalho **Sorologia e eliminação de Bovine herpesvirus 1 (BoHV-1) e Bovine herpesvirus 5 (BoHV-5) através do leite: implicações sobre a patogenia de vacas leiteiras naturalmente infectadas**, de autoria de **FERREIRA, Hanna Carolina Campos; SANTOS, Marcus Rebouças; CARVALHO, Fernanda Gomes de Freitas; FONSECA, Mariana D'Agosto Miguel; ALMEIDA, Márcia Rogéria; SILVA JUNIOR, Abelardo,** foi apresentado na sessão de pôsteres do **Simpósio de Pesquisa em Medicina Veterinária 2012** e **IV Semana da Pós-Graduação em Medicina Veterinária – UFV** realizado de 26 a 29 de setembro de 2012, em Viçosa, Minas Gerais, Brasil.

Viçosa, 29 de setembro de 2012.

Prof. Luís Augusto Nero
Coordenador do Programa de Pós-Graduação em Medicina Veterinária – UFV
Coordenador do Simpósio de Pesquisa em Medicina Veterinária 2012

Prof. Jackson Victor de Araújo
Chefe do Departamento de Veterinária – UFV

Realização: Pós-Graduação Medicina Veterinária; Universidade Federal de Viçosa; DVT Departamento de Veterinária - UFV

Patrocínio: CAPES; CRMV-MG; FAPEMIG FUNARBE; Promega; Prodimol Alent; GERA

TEACHING RESEARCH OUTREACH

Academic Integration Symposium
SIA UFV / 2010

FEDERAL UNIVERSITY
OF VIÇOSA

CERTIFICATE

We hereby certify that the paper "Evaluation of Neutralizing Antibodies against Bovine herpesvirus 1 (BoHV-1) in Beef and Dairy Cattle Herds," authored by Marcus Rebouças Santos, Hanna Carolina Campos Ferreira, Marcos Antônio dos Santos, Natália Filardi Tafuri, Mareia Rogeria de Almeida Lamego, and Abelardo Silva Junior, was presented in a poster session at the 2010 ACADEMIC INTEGRATION SYMPOSIUM OF UFV – SIA UFV 2010, held from October 20 to 23, 2010, at the Federal University of Viçosa campus

.

Viçosa, Minas Gerais, October 23, 2010.

Vicente de Paula Lélis
Vice-President for Academic Affairs

Cosme Damião Cruz
Vice-President for Research and Graduate Studies

Gumercindo Souza Lima
Vice-President for Outreach and Culture

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

ENSINO PESQUISA EXTENSÃO

Simpósio de Integração Acadêmica
SIA UFV / 2010

UNIVERSIDADE FEDERAL DE VIÇOSA

CERTIFICADO

Certificamos que o trabalho "Avaliação de anticorpos neutralizantes para o bovine herpesvirus 1 (BoHV-1) em rebanhos bovinos de corte e leiteiros.", de autoria de Marcus Rebouças Santos, Hanna Carolina Campos Ferreira, Marcos Antônio dos Santos, Natália Filardi Tafuri, Marcia Rogeria de Almeida Lamego e Abelardo Silva Junior, foi apresentado em sessão painel no *SIMPÓSIO DE INTEGRAÇÃO ACADÊMICA DA UFV/SIA UFV 2010*, realizado no período de 20 a 23 de outubro de 2010, no campus da Universidade Federal de Viçosa.

Viçosa-MG, 23 de outubro de 2010.

Vicente de Paula Lélis
Pró-Reitor de Ensino

Cosme Damião Cruz
Pró-Reitor de Pesquisa e Pós-Graduação

Gumercindo Souza Lima
Pró-Reitor de Extensão e Cultura

VETERINARY MEDICINE RESEARCH SYMPOSIUM 2010
3rd GRADUATE STUDIES WEEK IN VETERINARY MEDICINE – UFV
September 20 to 24 – UFV Campus, Viçosa, Minas Gerais

CERTIFICATE

We hereby certify that HANNA CAROLINA CAMPOS FERREIRA participated as a CONFERENCE SPEAKER in the **2010 Veterinary Medicine Research Symposium** and **the 3rd Graduate Studies Week in Veterinary Medicine – UFV.**

Luis Augusto Nero
Event Coordinator

Jackson Victor de Araújo
Coordinator of the Graduate Studies Program in Veterinary Medicine

CAPES FAPEMIG CRMV - MG FUNARBE ROYAL CANIN ceva ALFA HOTEL UNISCIENCE palsos biotecnologia

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

SIMPÓSIO DE PESQUISA EM MEDICINA VETERINÁRIA 2010

III Semana da Pós-Graduação em Medicina Veterinária – UFV

20 a 24 de setembro – Campus UFV, Viçosa, MG

CERTIFICADO

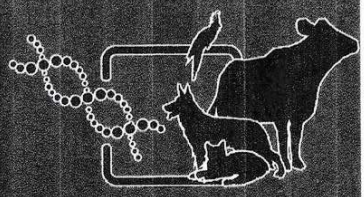
Certificamos que HANNA CAROLINA CAMPOS FERREIRA participou na categoria de conferencista do **Simpósio de Pesquisa em Medicina Veterinária 2010** e **III Semana da Pós-Graduação em Medicina Veterinária - UFV.**

Luis Augusto Nero
Coordenador do evento

Jackson Victor de Araújo
Coordenador do Programa de Pós-Graduação em Medicina Veterinária

CAPES FAPEMIG CRMV - MG FUNARBE ROYAL CANIN ceva ALFA HOTEL UNISCIENCE patsos biotecnologia

VETERINARY MEDICINE RESEARCH SYMPOSIUM 2010
3rd GRADUATE STUDIES WEEK IN VETERINARY MEDICINE – UFV
September 20 to 24 – UFV Campus, Viçosa, Minas Gerais



CERTIFICATE

We hereby certify that the paper entitled "SEROLOGICAL PROFILE OF BOVINE HERPESVIRUS 1 (BOHV-1) IN CATTLE FARMS ASSOCIATED WITH DIFFERENT REARING SYSTEMS," authored by MARCUS REBOUÇAS SANTOS; HANNA C.C. FERREIRA; MARCOS ANTÔNIO DOS SANTOS; NÁTALIA FILARDI TAFURI; MARCIA ROGERIA DE ALMEIDA LAMEGO; and ABELARDO SILVA JUNIOR, was presented in poster format at the **2010 Veterinary Medicine Research Symposium** and **3rd Graduate Studies Week in Veterinary Medicine – UFV**.

Luis Augusto Nero
Event Coordinator

Jackson Victor de Araújo
Coordinator of the Graduate Studies Program in Veterinary Medicine

CAPES FAPEMIG CRMV - MG FUNARBE ROYAL CANIN ceva ALFA HOTEL UNISCIENCE patsos biotecnologia

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

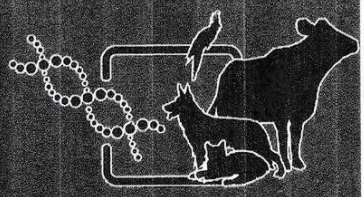
Marina Viana

Date: September 24, 2026

SIMPÓSIO DE PESQUISA EM MEDICINA VETERINÁRIA 2010

III Semana da Pós-Graduação em Medicina Veterinária – UFV

20 a 24 de setembro – Campus UFV, Viçosa, MG



CERTIFICADO

Certificamos que o trabalho intitulado "PERFIL SOROLÓGICO DO BOVINE HERPESVIRUS 1 (BOHV-1) EM PROPRIEDADES DE BOVINOS ASSOCIADO A DIFERENTES SISTEMAS DE CRIAÇÃO", de autoria de: MARCUS REBOUÇAS SANTOS; HANNA C.C.FERREIRA; MARCOS ANTÔNIO DOS SANTOS; NÁTALIA FILARDI TAFURI; MARCIA ROGERIA DE ALMEIDA LAMEGO e ABELARDO SILVA JUNIOR, foi apresentado sob forma de pôster no **Simpósio de Pesquisa em Medicina Veterinária 2010** e **III Semana da Pós-Graduação em Medicina Veterinária - UFV.**

Luís Augusto Nero
Coordenador do evento

Jackson Victor de Araújo
Coordenador do Programa de Pós-Graduação em Medicina Veterinária

CAPES FAPEMIG CRMV - MG FUNARBE ROYAL CANIN ceva ALFA HOTEL UNISCIENCE patsos biotecnologia

FEDERAL UNIVERSITY OF VIÇOSA

19TH UNDERGRADUATE RESEARCH SYMPOSIUM – 9TH GRADUATE STUDIES SCIENTIFIC EXHIBITION – 7TH UNIVERSITY OUTREACH SYMPOSIUM – TEACHING SYMPOSIUM

TEACHING | RESEARCH | OUTREACH

Dialogues for Science at UFV

CERTIFICATE

We hereby certify that the paper **"LEFT MEDIAL LUXATION OF THE PONY METACARPOPHALANGEAL JOINT – CASE REPORT,"** authored by **Hanna Carolina Campos Ferreira, Maria Cristina Ferrarini Nunes Soares Hage, Brunna Patricia Almeida da Fonseca, Jose de Oliveira Pinto, André Lang, Camila Oliveira Silveira, Luiz Carlos Fontes Baptista Filho, Athina Chaves Donner, Railson Brandão de Andrade, Daniela Calhelhas Gaspar, and Adriana Vieira Oliveira**, was presented at the **UFV SYMPOSIA: 19th UNDERGRADUATE RESEARCH SYMPOSIUM – SIC; 9th GRADUATE STUDIES SCIENTIFIC EXHIBITION – SIMPÓS; 7th UNIVERSITY OUTREACH SYMPOSIUM – SEU; and 3rd TEACHING SYMPOSIUM – SEn**, held from **October 21 to 24, 2009**, at the **Federal University of Viçosa** campus.

Viçosa, Minas Gerais, October 24, 2009.

Marinês Guerreiro
Vice-President for Academic Affairs

Cosme Damião Cruz
Vice-President for Research and Graduate Studies

Gumercindo Souza Lima
Vice-President for Outreach and Culture

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

Universidade Federal de Viçosa

XIX Simpósio de Iniciação Científica • IX Simpósio da Pós- Graduação • VII Simpósio de Extensão Universitária • III Simpósio de Ensino

ENSINO | PESQUISA | EXTENSÃO
Diálogos para a ciência na UFV

CERTIFICADO

Certificamos que o trabalho **"LUXAÇÃO MEDIAL DA ARTICULAÇÃO METACARPOFALANGEANA ESQUERDA DE PÔNEI - RELATO DE CASO"**, de autoria de **Hanna Carolina Campos Ferreira, Maria Cristina Ferrarini Nunes Soares Hage, Brunna Patricia Almeida da Fonseca, Jose de Oliveira Pinto, André Lang, Camila Oliveira Silveira, Luiz Carlos Fontes Baptista Filho, Athina Chaves Donner, Railson Brandão de Andrade, Daniela Calhelhas Gaspar, Adriana Vieira Oliveira**, foi apresentado nos ***SIMPÓSIOS DA UFV: XIX DE INICIAÇÃO CIENTÍFICA – SIC; IX MOSTRA CIENTÍFICA DA PÓS-GRADUAÇÃO – SIMPÓS; VII DE EXTENSÃO UNIVERSITÁRIA - SEU E III DE ENSINO - SEn***, realizado no período de **21 a 24 de outubro de 2009**, no campus da ***Universidade Federal de Viçosa.***

Viçosa-MG, 24 de outubro de 2009

Marinês Guerreiro
Pró-Reitora de Ensino

Cosme Damião Cruz
Pró-Reitor de Pesquisa e Pós-Graduação

Gumercindo Souza Lima
Pró-Reitor de Extensão e Cultura

FEDERAL UNIVERSITY OF VIÇOSA

19TH UNDERGRADUATE RESEARCH SYMPOSIUM – 9TH GRADUATE STUDIES SCIENTIFIC EXHIBITION – 7TH UNIVERSITY OUTREACH SYMPOSIUM – TEACHING SYMPOSIUM

TEACHING | RESEARCH | OUTREACH

Dialogues for Science at UFV

CERTIFICATE

We hereby certify that the paper **"PREPUBIC TENDON RUPTURE IN A COW AS A CONSEQUENCE OF HYDROPS DUE TO HYDROALLANTOIS – CASE REPORT,"** authored by **Hanna Carolina Campos Ferreira, Ernani Paulino do Lago, Pacifico Antonio Diniz Belem, Athina Chaves Donner, Camila Oliveira Silveira, Luiz Carlos Fontes Baptista Filho, and Railson Brandão de Andrade,** was presented at the **UFV SYMPOSIA: 19th UNDERGRADUATE RESEARCH SYMPOSIUM – SIC; 9th GRADUATE STUDIES SCIENTIFIC EXHIBITION – SIMPÓS; 7th UNIVERSITY OUTREACH SYMPOSIUM – SEU; and 3rd TEACHING SYMPOSIUM – SEn**, held from **October 21 to 24, 2009**, at the **Federal University of Viçosa** campus.

Viçosa, Minas Gerais, October 24, 2009.

Marinês Guerreiro
Vice-President for Academic Affairs

Cosme Damião Cruz
Vice-President for Research and Graduate Studies

Gumercindo Souza Lima
Vice-President for Outreach and Culture

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Marina Viana

Date: September 24, 2026

Universidade Federal de Viçosa

XIX Simpósio de Iniciação Científica • IX Simpósio da Pós-Graduação • VII Simpósio de Extensão Universitária • III Simpósio de Ensino

ENSINO | PESQUISA | EXTENSÃO
Diálogos para a ciência na UFV

CERTIFICADO

Certificamos que o trabalho **"RUPTURA DE TENDÃO PRÉ-PÚBICO EM VACA COMO CONSEQUÊNCIA À HIDROPSIA POR HIDROALANTÓIDE – RELATO DE CASO"**, de autoria de **Hanna Carolina Campos Ferreira, Ernani Paulino do Lago, Pacifico Antonio Diniz Belem, Athina Chaves Donner, Camila Oliveira Silveira, Luiz Carlos Fontes Baptista Filho, Railson Brandão de Andrade**, foi apresentado nos ***SIMPÓSIOS DA UFV: XIX DE INICIAÇÃO CIENTÍFICA – SIC; IX MOSTRA CIENTÍFICA DA PÓS-GRADUAÇÃO – SIMPÓS; VII DE EXTENSÃO UNIVERSITÁRIA - SEU E III DE ENSINO - SEn***, realizado no período de **21 a 24 de outubro de 2009**, no campus da ***Universidade Federal de Viçosa.***

Viçosa-MG, 24 de outubro de 2009

Marinês Guerreiro
Pró-Reitora de Ensino

Cosme Damião Cruz
Pró-Reitor de Pesquisa e Pós-Graduação

Gumercindo Souza Lima
Pró-Reitor de Extensão e Cultura

Simleite

Junior Veterinary Medicine Company
UFV

NATIONAL DAIRY CATTLE SYMPOSIUM
September 5 to 7, 2009

CERTIFICATE

We hereby certify that Hanna Carolina Campos Ferreira participated in the National Dairy Cattle Symposium, organized by the Junior Veterinary Medicine Company, held from September 5 to 7, 2009, at the Federal University of Viçosa, Minas Gerais, as an attendee.

Prof. José Domingos Guimarães
Coordinator of Simleite
DVT – UFV

Thiago Luis Arcebispo
President of Provet – Junior
Veterinary Medicine Company – UFV

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

Simleite

Simpósio Nacional de Bovinocultura Leiteira
05 a 07 de Setembro de 2009

Certificado

Certificamos que Hanna Carolina Campos Ferreira participou do Simpósio Nacional de Bovinocultura Leiteira, promovido pela Empresa Junior de Medicina Veterinária, realizado entre os dias 05 e 07 de Setembro de 2009, na Universidade Federal de Viçosa, Minas Gerais, na qualidade de ouvinte.

Prof. José Domingos Guimarães
Coordenador do Simleite
DVT - UFV

Thiago Luis Arcebispo
Presidente da Provet - Empresa Júnior
de Medicina Veterinária - UFV

II SIMEQ

Certificate

2nd EQUINE PRODUCTION SYMPOSIUM

We hereby certify that

Hanna Carolina Campos Ferreira

Participated as an attendee in the 2nd Equine Production Symposium, organized by the Department of Animal Science and the Equine Production Study Group, held at the Federal University of Viçosa from June 11 to 13, 2009, according to the schedule on the reverse side.

Viçosa, Minas Gerais, June 13, 2009.

Prof. Giovanni Ribeiro de Carvalho
Coordinator of the 2nd SIMEQ
DZO – UFV

Prof. Gumercindo Souza Lima
Vice-President's Office for Outreach and Culture
UFV

ORGANIZED BY: FEDERAL UNIVERSITY OF VIÇOSA · ZOOTECNIA - UFV · ANIMAL SCIENCE - UFV · EQTEC UFV

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 24, 2026

II SIMEQ

Certificado

II SIMPÓSIO DE EQUIDEOCULTURA

Certificamos que

Hanna Carolina Campos Ferreira

Participou como *Ouvinte* do II Simpósio de Equideocultura, promovido pelo Departamento de Zootecnia e Grupo de Estudos em Equideocultura, realizado na Universidade Federal de Viçosa, nos dias 11 a 13 de junho de 2009, de acordo com a programação no verso.

Viçosa - MG, 13 de junho de 2009

Prof. Giovanni Ribeiro de Carvalho
Coordenador do II SIMEQ
DZO - UFV

Prof. Gumercindo Souza Lima
Pró-Reitor de Extensão e Cultura
UFV

ORGANIZAÇÃO: UNIVERSIDADE FEDERAL DE VIÇOSA · DZO ZOOTECNIA - UFV · EQTEC UFV

FEDERAL UNIVERSITY OF VIÇOSA

Vice President's Office for Research and Graduate Studies
Vice President's Office for Outreach and Culture
Vice President's Office for Undergraduate Studies

CERTIFICATE

We hereby certify that the paper DIAGNOSIS AND IMMUNOLOGICAL PROFILE OF BOVINE CYSTICERCOSIS, authored by HANNA CAROLINA CAMPOS FERREIRA, PAULO SERGIO DE ARRUDA PINTO, ALINE GIROTTO, LEANDRO SIQUEIRA CHAVES, JULIO CESAR OLIVEIRA DIAS, ADRIANO GRÔPPO FELIPPE, was presented at the 18TH UNDER RESEARCH SYMPOSIUM, 8TH SIMPÓS - GRADUATE STUDIES SCIENTIFIC EXHIBITION, 6TH UNIVERSITY OUTREACH SYMPOSIUM AND 2ND SEn - EDUCATION SYMPOSIUM, held from October 22 to 25, 2008, at the Federal University of Viçosa campus.

Viçosa-Minas Gerais, October 25, 2008

Luiz Aurélio Raggi
Vice President's Office for Undergraduate Studies

Maurílio Alves Moreira
Vice President's Office for Research and Graduate Studies

Geraldo Antônio de Andrade Araújo
Vice President's Office for Outreach and Culture

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 24, 2026.

UNIVERSIDADE FEDERAL DE VIÇOSA

Pró-Reitoria de Pesquisa e Pós-Graduação
Pró-Reitoria de Extensão e Cultura
Pró-Reitoria de Ensino

CERTIFICADO

Certificamos que o trabalho DIAGNÓSTICO E PERFIL IMUNOLÓGICO DA CISTICERCOSE BOVINA , de autoria de HANNA CAROLINA CAMPOS FERREIRA, PAULO SERGIO DE ARRUDA PINTO, ALINE GIROTTO, LEANDRO SIQUEIRA CHAVES, JULIO CESAR OLIVEIRA DIAS, ADRIANO GRÔPPO FELIPPE, foi apresentado no XVIII SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, VIII SIMPÓS - MOSTRA CIENTÍFICA DA PÓS-GRADUAÇÃO, VI SIMPÓSIO DE EXTENSÃO UNIVERSITÁRIA E II SEn – SIMPÓSIO DE ENSINO, realizado no período de 22 a 25 de outubro de 2008, no campus da Universidade Federal de Viçosa.

Viçosa-MG, 25 de outubro de 2008

Luiz Aurélio Raggi
Pró-Reitor de Ensino

Maurílio Alves Moreira
Pró-Reitor de Pesquisa e Pós-Graduação

Geraldo Antônio de Andrade Araújo
Pró-Reitor de Extensão e Cultura

FEDERAL UNIVERSITY OF VIÇOSA

VicePresident'sOfficefor Researchand GraduateStudies
Vice President's Office for Outreach and Culture
Vice President's Office for Undergraduate Studies

CERTIFICATE

We hereby certifythat thepaper **Taenia crassiceps ANTIGEN PEPTIDES IMPORTANT IN THE DIAGNOSIS OF BOVINE CYSTICERCOSIS**, authored by Hanna Carolina Campos Ferreira, Paulo Sérgio de Arruda Pinto, Aline Girotto, Júlio César Oliveira Dias, Leandro Siqueira Chaves and Adriano Felippe Groppo, was presented at the ***17TH UNDERGRADUATE RESEARCH SYMPOSIUM, 7TH SIMPÓS - GRADUATE STUDIES SCIENTIFIC EXHIBITION, 5TH UNIVERSITY OUTREACH SYMPOSIUM AND 1ST SEn - EDUCATION SYMPOSIUM***, held from **November 21 to 24, 2007**, at the **Federal University of Viçosa** campus.

Viçosa-Minas Gerais, November 24, 2007,

---//signature//---
Luiz Aurélio Raggi
Vice President's Office for Undergraduate Studies

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Maurílio Alves Moreira
Vice President's Office for Research and Graduate Studies

---//signature//---
Geraldo Antonio de Andrade Araújo
Vice President's Office for Outreach and Culture

**Translator's note: The text within the watermark corresponds to the names of the events already translated throughout the document.*

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Date: September 24, 2026.

UNIVERSIDADE FEDERAL DE VIÇOSA

Pró-Reitoria de Pesquisa e Pós-Graduação
Pró-Reitoria de Extensão e Cultura
Pró-Reitoria de Ensino

CERTIFICADO

Certificamos que o trabalho **PEPTÍDEOS DE ANTÍGENOS DE Taenia crassiceps IMPORTANTES NO DIAGNÓSTICO DA CISTICERCOSE BOVINA**, de autoria de Hanna Carolina Campos Ferreira, Paulo Sérgio de Arruda Pinto, Aline Girotto, Júlio César Oliveira Dias, Leandro Siqueira Chaves e Adriano Felippe Groppo, foi apresentado no ***XVII SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, VII SIMPÓS - MOSTRA CIENTÍFICA DA PÓS-GRADUAÇÃO, V SIMPÓSIO DE EXTENSÃO UNIVERSITÁRIA E I Sen – SIMPÓSIO DE ENSINO***, realizado no período de ***21 a 24 de novembro de 2007***, no campus da ***Universidade Federal de Viçosa***.

Viçosa-MG, 24 de novembro de 2007.

Luiz Aurélio Raggi
Pró-Reitor de Ensino

Maurílio Alves Moreira
Pró Reitor de Pesquisa e Pós-Graduação

Geraldo Antonio de Andrade Araújo
Pró-Reitor de Extensão e Cultura

FEDERAL UNIVERSITY OF VIÇOSA

VicePresident'sOfficefor Researchand GraduateStudies
Vice President's Office for Outreach and Culture
Vice President's Office for Undergraduate Studies

CERTIFICATE

We hereby certifythat***HANNA CAROLINA CAMPOS FERREIRA*** participated in the ***17TH UNDERGRADUATE RESEARCH SYMPOSIUM, 7TH SIMPÓS - GRADUATE STUDIES SCIENTIFIC EXHIBITION, 5TH UNIVERSITY OUTREACH SYMPOSIUM AND 1ST SEn - EDUCATION SYMPOSIUM***, a joint event held from ***November 21 to 24, 2007***, at the ***Federal University of Viçosa*** campus.

Viçosa-Minas Gerais, November 24, 2007.

---//signature//---
Luiz Aurélio Raggi
Vice President's Office for Undergraduate Studies

---//signature//---
Maurílio Alves Moreira
Vice President's Office for Research and Graduate Studies

---//signature//---
Geraldo Antonio de Andrade Araújo
Vice President's Office for Outreach and Culture

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Date: September 24, 2026.

UNIVERSIDADE FEDERAL DE VIÇOSA

Pró-Reitoria de Pesquisa e Pós-Graduação
Pró-Reitoria de Extensão e Cultura
Pró-Reitoria de Ensino

CERTIFICADO

Certificamos que *HANNA CAROLINA CAMPOS FERREIRA* participou do ***XVII SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, VII SIMPÓS - MOSTRA CIENTÍFICA DA PÓS-GRADUAÇÃO, V SIMPÓSIO DE EXTENSÃO UNIVERSITÁRIA E I Sen – SIMPÓSIO DE ENSINO***, evento conjunto realizado no período de ***21 a 24 de novembro de 2007***, no campus da ***Universidade Federal de Viçosa***.

Viçosa-MG, 24 de novembro de 2007.

Luiz Aurélio Raggi
Pró-Reitor de Ensino

Maurílio Alves Moreira
Pró Reitor de Pesquisa e Pós-Graduação

Geraldo Antonio de Andrade Araújo
Pró-Reitor de Extensão e Cultura

FEDERAL UNIVERSITY OF VIÇOSA

VicePresident'sOfficefor Researchand GraduateStudies
Vice President's Office for Outreach and Culture
Vice President's Office for Undergraduate Studies

CERTIFICATE

We hereby certifythatthe paper**PRODUCTIONOF IMMUNOGLOBULINS G AND M IN CATTLE AFTER INOCULATION OF Taenia crassiceps ANTIGENS**, authored by Adriano Grôppo Felippe, Paulo Sérgio de Arruda Pinto, Leandro Siqueira Chaves, Aline Giroto, Julio Cesar de Oliveira Dias Hanna Carolina Campos and Vitor Groppo Felippe, was presented at the ***17TH UNDERGRADUATE RESEARCH SYMPOSIUM, 7TH SIMPÓS - GRADUATE STUDIES SCIENTIFIC EXHIBITION, 5TH UNIVERSITY OUTREACH SYMPOSIUM AND 1ST SEn - EDUCATION SYMPOSIUM***, held from ***November 21 to 24, 2007***, at the ***Federal University of Viçosa*** campus.

Viçosa-Minas Gerais, November 24, 2007.

---//signature//---
Luiz Aurélio Raggi
Vice President's Office for Undergraduate Studies

---//signature//---
Maurílio Alves Moreira
Vice President's Office for Research and Graduate Studies

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Vice President's Office for Outreach and Culture

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Date: September 24, 2026.

UNIVERSIDADE FEDERAL DE VIÇOSA

Pró-Reitoria de Pesquisa e Pós-Graduação
Pró-Reitoria de Extensão e Cultura
Pró-Reitoria de Ensino

CERTIFICADO

Certificamos que o trabalho **PRODUÇÃO DE IMUNOGLOBULINAS G E M EM BOVINOS APÓS INOCULAÇÃO DE ANTÍGENOS DE Taenia crassiceps**, de autoria de Adriano Grôppo Felippe, Paulo Sérgio de Arruda Pinto, Leandro Siqueira Chaves, Aline Giroto, Júlio César de Oliveira Dias, Hanna Carolina Campos e Vitor Grôppo Felippe, foi apresentado no ***XVII SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, VII SIMPÓS - MOSTRA CIENTÍFICA DA PÓS-GRADUAÇÃO, V SIMPÓSIO DE EXTENSÃO UNIVERSITÁRIA E I Sen – SIMPÓSIO DE ENSINO***, realizado no período de ***21 a 24 de novembro de 2007***, no campus da ***Universidade Federal de Viçosa***.

Viçosa-MG, 24 de novembro de 2007.

Luiz Aurélio Raggi
Pró-Reitor de Ensino

Maurílio Alves Moreira
Pró Reitor de Pesquisa e Pós-Graduação

Geraldo Antonio de Andrade Araújo
Pró-Reitor de Extensão e Cultura

3RD LATIN AMERICAN CONGRESS
9TH BRAZILIAN CONGRESS OF FOOD HYGIENISTS
2ND NATIONAL MEETING OF ZOONOSES CONTROL CENTERS
1ST NATIONAL MEETING OF THE BRAZILIAN INSPECTION SYSTEM FOR PRODUCTS OF ANIMAL ORIGIN



HSCD 31
Organized by
CBMVHA
Brazilian College of Veterinary Food Hygienists

We hereby certify that

FELIPPE, Adriano Grôppo; PINTO, Paulo Sérgio de Arruda; CHAVES, Leandro Siqueira; GIROTTO, Aline; DIAS, Júlio César de Oliveira; FERREIRA, Hanna Carolina Campos

participated in the 3rd Latin American Congress of Food Hygienists, 9th Brazilian Congress of Food Hygienists, 2nd National Meeting of Zoonoses Control Centers, 1st National Meeting of the Brazilian Inspection System for Products of Animal Origin, promoted by the Brazilian College of Veterinary Food Hygienists, from May 01 to 04, 2007, in Porto Seguro - Bahia, as **Author(s) of the Scientific Paper "EVALUATION OF THE PRODUCTION OF IMMUNOGLOBULINS G AND M, THROUGH THE ELISA TEST, IN A CALF EXPERIMENTALLY INOCULATED WITH Taenia saginata EGGS"**

Porto Seguro, May 4, 2007

Dr. Geraldo Vinhaes Torres
President of the Veterinary Medicine Society of Bahia

Zander Barreto Miranda
President of the 9th Brazilian Congress of Food Hygienists

Sibelli Passini Barbosa Ferrão
Chair of the Scientific Committee

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 24, 2026.

III CONGRESSO LATINO - AMERICANO
IX CONGRESSO BRASILEIRO DE HIGIENISTAS DE ALIMENTOS
II ENCONTRO NACIONAL DE CENTROS DE CONTROLE DE ZOONOSES
I ENCONTRO NACIONAL DO SISTEMA BRASILEIRO DE INSPEÇÃO DOS PRODUTOS DE ORIGEM ANIMAL

HSCD 31
Realização
CBMVHA
Colégio Brasileiro de Médicos Veterinários Higienistas de Alimentos

Certificamos que

FELIPPE, Adriano Grôppo; PINTO, Paulo Sérgio de Arruda; CHAVES, Leandro Siqueira; GIROTTO, Aline; DIAS, Júlio César de Oliveira; FERREIRA, Hanna Carolina Campos

participou do III Congresso Latino-americano de Higienistas de Alimentos, IX Congresso Brasileiro de Higienistas de Alimentos, II Encontro Nacional de Centros de Controle de Zoonoses, I Encontro Nacional do Sistema Brasileiro de Inspeção de Produtos de Origem Animal, promovido pelo Colégio Brasileiro de Médicos Veterinários Higienistas de Alimentos, no período de 01 a 04 de maio de 2007, em Porto Seguro – Bahia, na condição de **Autor(es) do Trabalho Científico**

"AVALIAÇÃO NA PRODUÇÃO DE IMUNOGLOBULINAS G E M, ATRAVÉS DO TESTE ELISA, EM BEZERRO INOCULADO EXPERIMENTALMENTE COM OVOS DE Taenia saginata"

Porto Seguro, 04 de maio de 2007

Dr. Geraldo Vinhaes Torres
Presidente da Sociedade de Medicina Veterinária da Bahia

Zander Barreto Miranda
Presidente IX Congresso Brasileiro de Higienistas de Alimentos

Sibelli Passini Barbosa Ferrão
Presidente Comissão Cientifica

3RD MINAS GERAIS FOOD MICROBIOLOGY SYMPOSIUM
3RD SANITARY SURVEILLANCE DEBATE FORUM

We hereby certify that the work

COMPARISON OF THE IMMUNOLOGICAL RESPONSE OF CATTLE EXPERIMENTALLY INFECTED WITH *Taenia saginata* EGGS AND IMMUNIZED WITH *Taenia crassiceps* ANTIGENS, authored by FERREIRA, H.C.C; PINTO, P.S.A; MIRANDA, R. O.,

Was presented at the 3rd Minas Gerais Food Microbiology Symposium and 3rd Sanitary Surveillance Debate Forum, promoted by the Food Technology Department of the Federal University of Viçosa (DTA/UFV), held from April 14 to 18, 2008, at the Federal University of Viçosa Campus - Minas Gerais.

Viçosa, April 18, 2008.

Regina Célia Santos Mendonça
EVENT COORDINATOR

José Benício Paes Chaves
PRESIDENT OF SBCTA - MINAS GERAIS REGIONAL DIVISION

Organized by: **Federal University of Viçosa**
Food Technology Department - DTA
Brazilian Society of Food Science and Technology - Minas Gerais Regional Division

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Date: September 24, 2026.

III SIMPÓSIO MINEIRO DE MICROBIOLOGIA DE ALIMENTOS
III FÓRUM DE DEBATES SOBRE VIGILÂNCIA SANITÁRIA

Certificamos que o trabalho

COMPARAÇÃO DA RESPOSTA IMUNOLÓGICA DE BOVINOS INFECTADOS EXPERIMENTALMENTE COM OVOS DE *Taenia saginata* E IMUNIZADOS COM ANTÍGENOS DE *Taenia crassiceps*, de autoria de FERREIRA, H.C.C; PINTO, P.S.A; MIRANDA, R. O.

Foi apresentado no III Simpósio Mineiro de Microbiologia de Alimentos e III Fórum de Debates sobre Vigilância Sanitária, promovido pelo Departamento de Tecnologia de Alimentos da Universidade Federal de Viçosa (DTA/UFV), realizado de 14 a 18 de abril de 2008, no Campus da Universidade Federal de Viçosa - Minas Gerais.

Viçosa, 18 de Abril de 2008.

Regina Célia Santos Mendonça
COORDENADORA DO EVENTO

José Benício Paes Chaves
PRESIDENTE SBCTA - REGIONAL MG

Realização: **Universidade Federal de Viçosa**
Departamento de Tecnologia de Alimentos - DTA
Sociedade Brasileira de Ciências e Tecnologia de Alimentos - Regional MG

3RD LATIN AMERICAN CONGRESS
9TH BRAZILIAN CONGRESS OF FOOD HYGIENISTS
2ND NATIONAL MEETING OF ZOONOSES CONTROL CENTERS
1ST NATIONAL MEETING OF THE BRAZILIAN INSPECTION SYSTEM FOR PRODUCTS OF ANIMAL ORIGIN



HSCD 32
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CBMVHA
Brazilian College of Veterinary Food Hygienists

We hereby certify that

Girotto, Aline; Pinto, Paulo Sergio de Arruda; Dias, Júlio César Oliveira; Chaves, Leandro Siqueira; Groppo, Adriano Felippe; Ferreira, Hanna Carolina Campos

participated in the 3rd Latin American Congress of Food Hygienists, 9th Brazilian Congress of Food Hygienists, 2nd National Meeting of Zoonoses Control Centers, 1st National Meeting of the Brazilian Inspection System for Products of Animal Origin, promoted by the Brazilian College of Veterinary Food Hygienists, from May 01 to 04, 2007, in Porto Seguro - Bahia, as **Author(s) of the Scientific Paper**

"EVALUATION OF Taenia saginata AND Taenia crassiceps ANTIGENS AGAINST DIFFERENT CONTROL SERA GROUPS IN THE DIAGNOSIS OF BOVINE CYSTICERCOSIS BY MEANS OF IMMUNOBLOT"

Porto Seguro, May 4, 2007

Dr. Geraldo Vinhaes Torres
President of the Veterinary Medicine Society of Bahia

Zander Barreto Miranda
President of the 9th Brazilian Congress of Food Hygienists

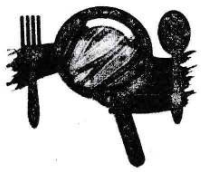
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Girotto, Aline; Pinto, Paulo Sérgio de Arruda; Dias, Júlio César Oliveira; Chaves, Leandro Siqueira; Groppo, Adriano Felippe; Ferreira, Hanna Carolina Campos

participou do III Congresso Latino-americano de Higienistas de Alimentos, IX Congresso Brasileiro de Higienistas de Alimentos, II Encontro Nacional de Centros de Controle de Zoonoses, I Encontro Nacional do Sistema Brasileiro de Inspeção de Produtos de Origem Animal, promovido pelo Colégio Brasileiro de Médicos Veterinários Higienistas de Alimentos, no período de 01 a 04 de maio de 2007, em Porto Seguro – Bahia, na condição de **Autor(es) do Trabalho Científico**

"AVALIAÇÃO DE ANTÍGENOS DE Taenia saginata E DE Taenia crassiceps FRENTE A DIFERENTES GRUPOS DE SOROS-CONTROLE NO DIAGNÓSTICO DA CISTICERCOSE BOVINA POR MEIO DO IMMUNOBLOT"

Porto Seguro, 04 de maio de 2007

Dr. Geraldo Vinhaes Torres
Presidente da Sociedade de Medicina Veterinária da Bahia

Zander Barreto Miranda
Presidente IX Congresso Brasileiro de Higienistas de Alimentos

Sibelli Passini Barbosa Ferrão
Presidente Comissão Cientifica

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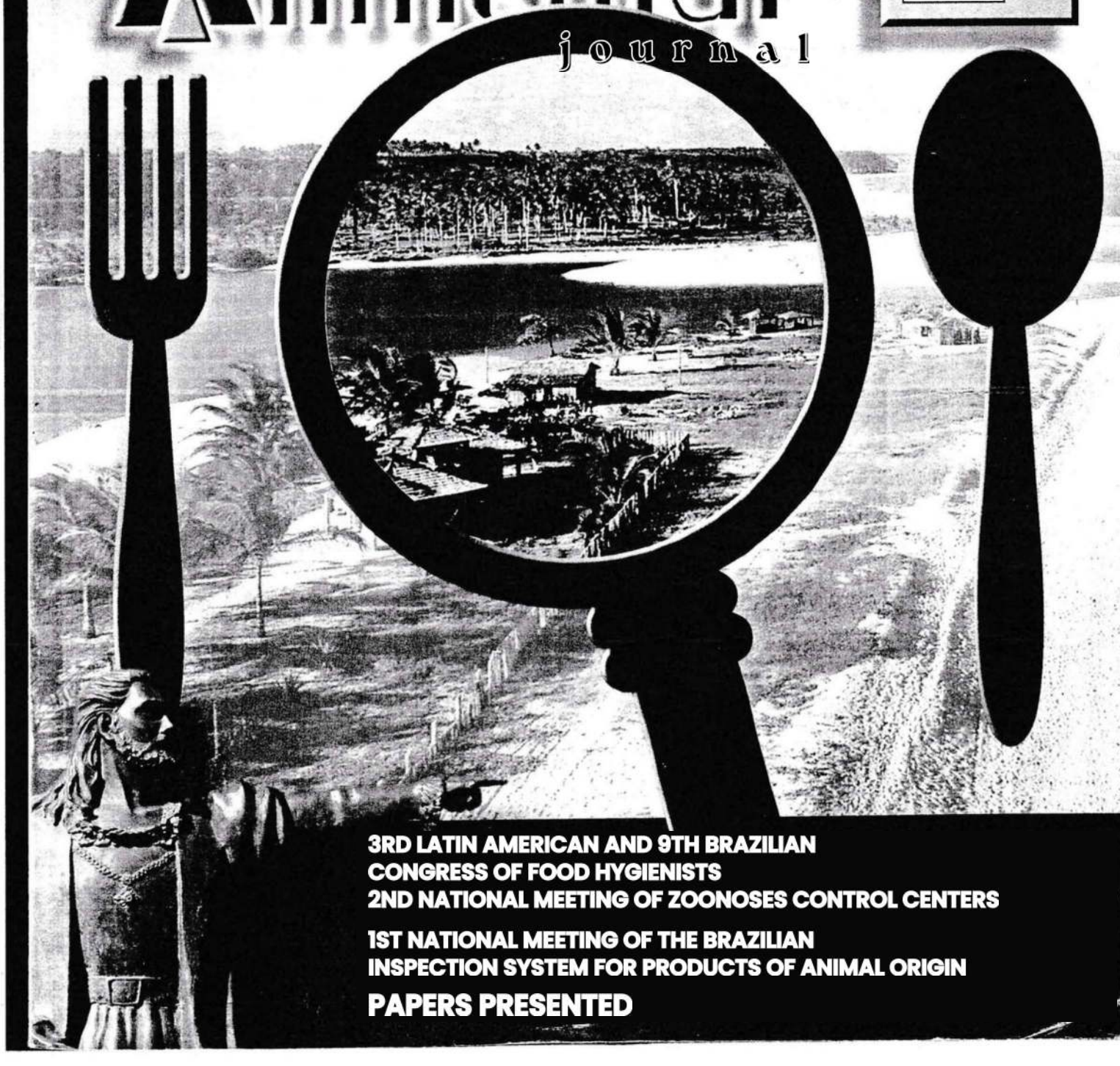
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PAPERS PRESENTED

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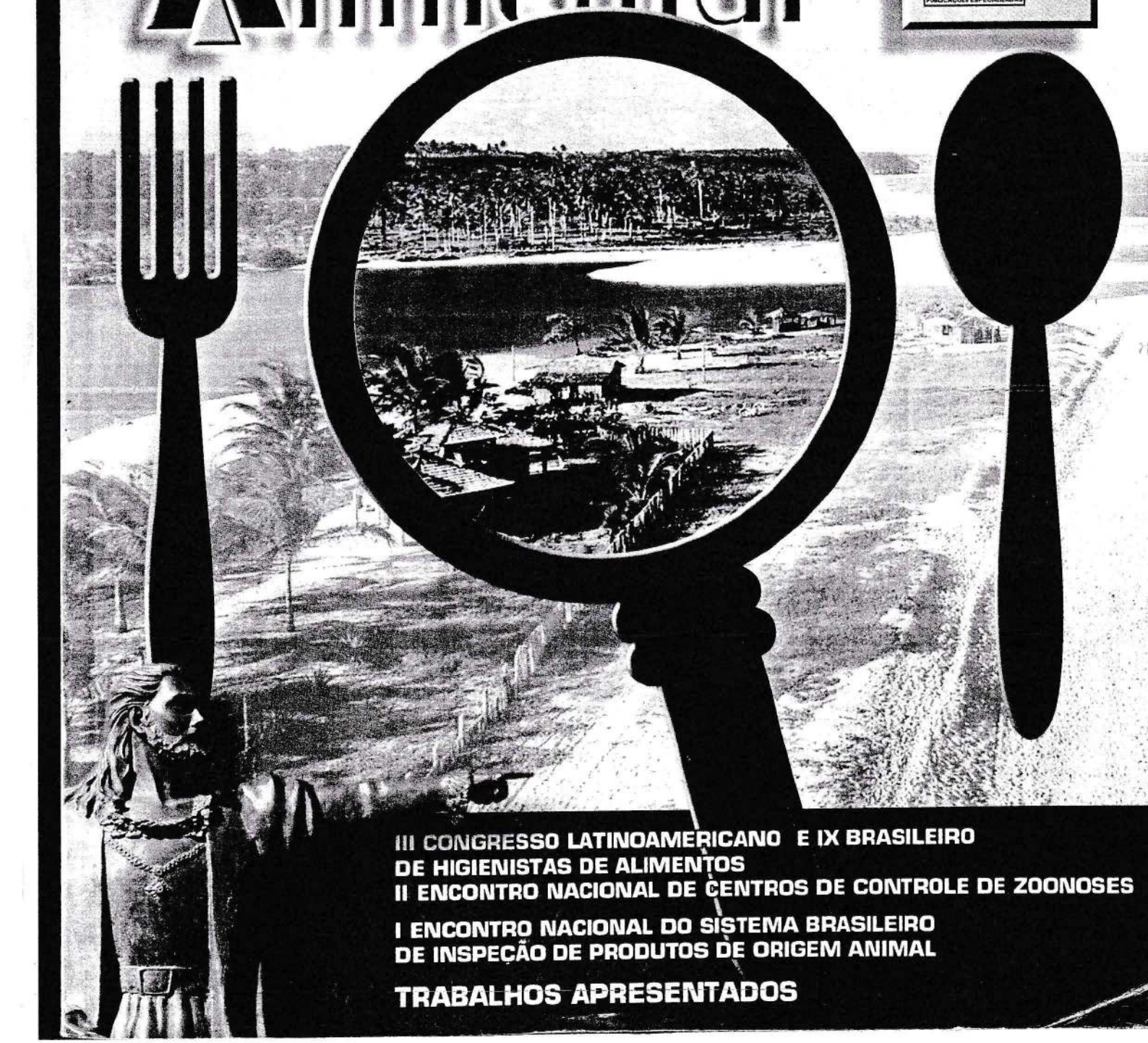
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III CONGRESSO LATINOAMERICANO E IX BRASILEIRO DE HIGIENISTAS DE ALIMENTOS
II ENCONTRO NACIONAL DE CENTROS DE CONTROLE DE ZOONOSES
I ENCONTRO NACIONAL DO SISTEMA BRASILEIRO DE INSPEÇÃO DE PRODUTOS DE ORIGEM ANIMAL

TRABALHOS APRESENTADOS

AVALIAÇÃO NA PRODUÇÃO DE IMUNOGLOBULINAS G E M, ATRAVÉS DO TESTE ELISA, EM BEZERRO INOCULADO EXPERIMENTALMENTE COM OVOS DE TAENIA SAGINATA *.

IGG AND IGM EVALUATION WITH ELISA TEST IN BOVINE EXPERIMENTALLY INOCULATED WITH TAENIA SAGINATA EGGS.

FELIPPE, Adriano Grôppo1; PINTO, Paulo Sérgio de Arruda2; CHAVES, Leandro Siqueira1; GIROTTO, Aline3; DIAS, Júlio César de Oliveira1; FERREIRA, Hanna Carolina Campos1.

1-Undergraduate research fellow. - 2-Associate Professor. - 3-Master's student.
**Department of Veterinary Medicine - Federal University of Viçosa*

Keywords: bovine cysticercosis, IgM, IgG, Taenia saginata, inoculation

Introduction

Cysticercosis is a zoonosis whose etiological agent is a cestode from the Taeniidae family, genus Taenia. These parasites develop in two hosts, a definitive one (humans) and an intermediate one (usually domestic animals). The ELISA test has been recommended for the diagnosis of bovine cysticercosis (MONTEIRO et al., 2006). However, the performance of this method has been questioned, especially in cattle with mild cysticercosis or in the early stages of the disease, which demands additional standardization studies. Therefore, the purpose of this work is to evaluate the production of immunoglobulins G and M in a calf experimentally infected with Taenia saginata eggs, in order to provide scientific information of interest for the diagnosis of bovine cysticercosis using the ELISA test.

Material and Methods

Approximately 120,000 eggs of the aforementioned tapeworm were inoculated into a calf. Subsequently, serum was collected periodically every 15 days, up to 225 days after inoculation. The immunological evolution of the calf was analyzed by means of the standardized ELISA test at a concentration of 10 µg/mL for the Taenia crassiceps antigen, with a 1:12.5 dilution for the sera, and 1:5,000 for the anti-IgG and anti-IgM conjugates.

Results and Discussion

The optical density values found in the screening of both types of antibodies were presented graphically (Figure 1) in order to facilitate the comparison between the two immunological evolutions. The calf showed an increasing production of IgM and IgG until the 90th day. Subsequently, a stabilization occurred in the production of both antibodies, but with slightly higher optical density values for immunoglobulin M.

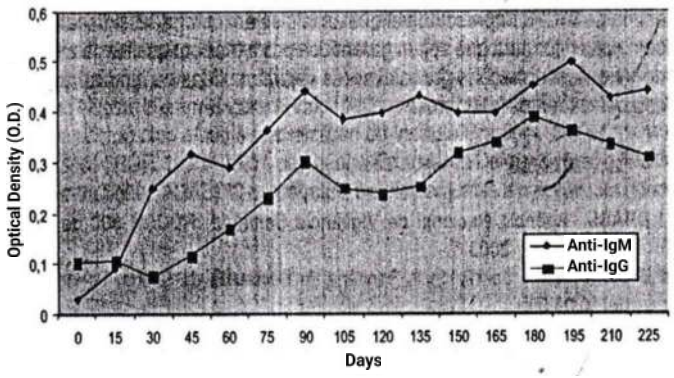


Figure 1: IgG and IgM antibody levels (optical density) of the calf detected by the ELISA test throughout the inoculation period.

Conclusion

With the present work, it can be concluded that the production of IgG and IgM in experimentally infected cattle reaches values capable of supporting future ELISA test standardization trials, especially in obtaining positive control sera.

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MONTEIRO, L.L .; PINTO, P.S.A .; DIAS, F.S. Evaluation of the ELISA test for the antibody detection in cattle naturally and experimentally infected with Cysticercus bovis. Vet Parasitol., v.141, n.3-4, pp.260-263, 2006. Available at http://dx.doi.org/10.1016/j.vetpar.2006.05.017.

Supported by: CNPq , FAPEMIG.
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TEMPERATURAS E CONDIÇÕES HIGIÊNICO-SANITÁRIAS DE CARNES EM SUPERMERCADOS DE SÃO JOAO DE MERITI/RJ.

TEMPERATURES AND HIGYENICAL SANITARY CONDITIONS OF MEATS IN SUPERMARKETS IN SÃO JOAO DE MERITI CITY/RJ

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1Department of Food Technology of UNIRIO. - 2Graduate Studies Program in Sanitary Surveillance INCQS/FIOCRUZ. - 3Superintendency of Zoonoses Control, Surveillance and Sanitary Inspection SMS/RJ

Introduction

Nowadays, the use of cold storage as a form of food preservation is expanding significantly (DURÃES, et al., 2003). This fact is due to cold storage being recognized as one of the safest and most reliable methods of food preservation (HILUY, 1997). Ensuring the hygienic-sanitary quality of refrigerated foods, such as fresh meats, requires, as one of its prerequisites, maintaining the display temperature of the product through the use of refrigeration. The shelf life of a food product is the period during which it can be preserved under specific conditions of temperature, relative humidity, light, etc., undergoing minor alterations that are acceptable to a certain extent by the manufacturer, consumer, and current food legislation. The objective of the present study was to evaluate the marketing conditions and preservation temperatures of fresh poultry and beef meats packaged in refrigeration equipment in supermarkets located in the City of São João de Meriti, Baixada Fluminense in the State of Rio de Janeiro.

Material and Methods

A total of 60 random samples of beef and poultry cuts were collected from supermarkets located in the city of São João de Meriti/Rio de Janeiro. Data collection occurred on alternating days and times. A spreadsheet was developed to record the data obtained from labeling and the storage conditions of the evaluated products. The information collected included: product and manufacturer name, sensory characteristics of the products selected for the sample, as well as manufacturing and expiration dates, and their packaging type. In evaluating the temperatures of the products and equipment, a Testo® brand digital thermometer was used, with a variation range between -50°C and +150°C. The temperature parameters for the refrigerated products were as follows: optimal classification (0°C to 4°C), good (4°C to 7°C), acceptable (7°C to 10°C), and inadequate (> 10°C). For frozen products: optimal (-34°C to -18°C), good (-18°C to -12°C), acceptable (-12°C to -8°C), and inadequate (> -8°C).

*Glossary:
CNPq : National Council for Scientific and Technological Development
FAPEMIG: Research Support Foundation of the State of Minas Gerais
FIOCRUZ: Oswaldo Cruz Foundation
INCQS: National Institute for Quality Control in Health
SMS/RJ: Municipal Health Secretariat of Rio de Janeiro
UNIRIO : Federal University of the State of Rio de Janeiro

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AVALIAÇÃO NA PRODUÇÃO DE IMUNOGLOBULINAS G E M, ATRAVÉS DO TESTE ELISA, EM BEZERRO INOCULADO EXPERIMENTALMENTE COM OVOS DE TAENIA SAGINATA*.

IGG AND IGM EVALUATION WITH ELISA TEST IN BOVINE EXPERIMENTALLY INOCULATED WITH TAENIA SAGINATA EGGS.

FELIPPE, Adriano Grôppo1; PINTO, Paulo Sérgio de Arruda2; CHAVES, Leandro Siqueira1; GIROTTO, Aline3; DIAS, Júlio César de Oliveira1; FERREIRA, Hanna Carolina Campos1.

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Palavras-chave: cisticercose bovina, IgM, IgG, Taenia saginata, inoculação

Introdução

A cisticercose é uma zoonose cujo agente etiológico é um cestoda da família Taeniidae, gênero Taenia. Estes parasitas evoluem em dois hospedeiros, um definitivo (homem) e outro intermediário (geralmente animais domésticos). O teste ELISA vem sendo recomendado para o diagnóstico da cisticercose bovina (MONTEIRO et al., 2006). Porém, o desempenho do método vem sendo questionado, principalmente em bovinos com cisticercose discreta ou fases iniciais da doença, o que demanda estudos adicionais de sua padronização. Assim pretende-se com este trabalho avaliar a produção de imunoglobulinas G e M em um bezerro experimentalmente infectado com ovos de Taenia saginata, a fim de oferecer informações científicas de interesse para o diagnóstico da cisticercose bovina pelo teste ELISA.

Material e Métodos

Foram inoculados cerca de 120.000 ovos da referida tênia num bezerro. Posteriormente se coletou soro periodicamente de 15 em 15 dias, até 225 dias após a inoculação. A evolução imunológica do bezerro foi analisada por meio do teste ELISA padronizado na concentração de 10?g/mL para o antígeno de Taenia crassiceps e diluição de 1:12,5 para os soros e 1:5.000 para os conjugados anti-IgG e anti-IgM.

Resultados e Discussão

Os valores de densidade óptica encontrados na pesquisa dos dois tipos de anticorpos foram apresentados graficamente (figura 1), de forma a facilitar a comparação entre as duas evoluções imunológicas. O bezerro apresentou uma produção crescente de IgM e IgG até o 90º dia. Posteriormente, ocorreu estabilização na produção dos dois anticorpos, porém com valores ligeiramente superiores de densidade óptica para a imunoglobulina M.

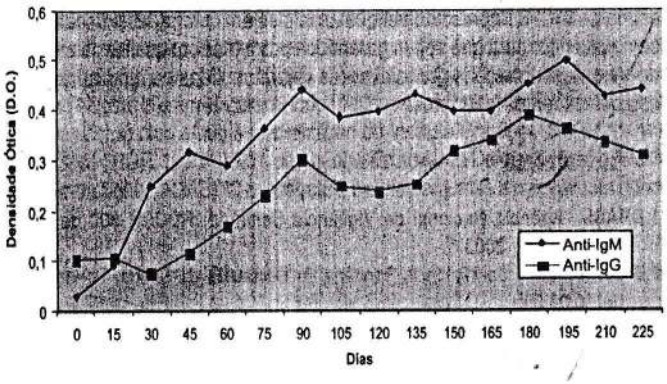


Figura 1: Nível de anticorpos IgG e IgM (densidade óptica) do bezerro detectado pelo teste ELISA ao longo do período de inoculação.

Conclusão

Com o presente trabalho pode-se concluir que a produção de IgG e IgM em bovinos experimentalmente infectados atingem valores capazes de subsidiar futuros ensaios de padronização do teste ELISA, sobretudo na obtenção de soros-controle positivos.

Referência

MONTEIRO, L.L.; PINTO, P.S.A.; DIAS, F.S. Evaluation of the ELISA test for the antibody detection in cattle naturally and experimentally infected with Cysticerccus bovis. Vet Parasitol., v.141, n.3-4, p.260-263, 2006. Disponível em http://dx.doi.org/10.1016/j.vetpar.2006.05.017.

Apoio: CNPq, FAPEMIG.
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TEMPERATURAS E CONDIÇÕES HIGIÊNICO-SANITÁRIAS DE CARNES EM SUPERMERCADOS DE SÃO JOAO DE MERITI/RJ.

TEMPERATURES AND HIGYENICAL SANITARY CONDITIONS OF MEATS IN SUPERMARKETS IN SÃO JOAO DE MERITI CITY/RJ

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1Departamento de Tecnologia de Alimentos da UNIRIO. - 2Programa de Pós Graduação em Vigilância Sanitária INCQS/FIOCRUZ. - 3Superintendência de Controle de Zoonoses, Vigilância e Fiscalização Sanitária SMS/RJ

Introdução

Nos dias atuais, a utilização do frio como forma de armazenamento de alimentos apresenta grande expansão (DURÃES, et al, 2003). Tal fato se deve ao frio estar sendo reconhecido como um dos métodos mais seguros e confiáveis de preservação dos alimentos (HILUY, 1997). A garantia da qualidade higiênico-sanitária de alimentos refrigerados, tais como as carnes frescas, tem como um dos seus requisitos a manutenção da temperatura de exposição do produto através da utilização do frio. A vida de prateleira de um alimento é o tempo em que ele pode ser conservado em determinadas condições de temperatura, umidade relativa, luz, etc., sofrendo pequenas alterações até certo ponto aceitáveis por parte do fabricante, consumidor e pela legislação alimentar vigente. Foi objetivo do presente estudo avaliar as condições de comercialização e temperaturas de conservação de carnes frescas de aves e bovinos, acondicionadas em equipamentos de refrigeração em supermercados, localizados no Município de São João de Meriti, Baixada Fluminense do Estado do Rio de Janeiro.

Material e Métodos

Foram coletadas 60 amostras aleatórias de cortes de carnes bovinas e de aves em supermercados localizados no município de São João de Meriti/RJ. A coleta dos dados ocorreu em dias e horários alternados. Foi elaborada uma planilha, para registro dos dados obtidos na rotulagem e nas condições de armazenamento dos produtos avaliados. As informações coletadas foram: o nome do produto e do fabricante, características sensoriais dos produtos selecionados para a amostra, assim como as datas de fabricação e validade, tipo de embalagem dos mesmos. Na avaliação das temperaturas dos produtos e equipamentos foi utilizado termômetro digital da marca Testo® com faixa de variação entre -50°C e +150°C. Os parâmetros de temperaturas para os produtos refrigerados foram os seguintes. Classificação ótima a (0 a 4°C), boa (4°C a 7°C), aceitável (7°C a 10°C) e inadequada (> 10°C). Para produtos congelados a ótima (-34°C a -18°C), boa (-18°C a -12°C), aceitável (-12°C a -8°C) e inadequada (> -8°C).

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Maurício Costa Alves da Silva: mcasilva@ufba.br

AVALIAÇÃO DE ANTÍGENOS DE TAENIA SAGINATA E DE TAENIA CRASSICEPS FRENTE A DIFERENTES GRUPOS DE SOROS-CONTROLE NO DIAGNÓSTICO DA CISTICERCOSE BOVINA POR MEIO DO IMMUNOBLOT

EVALUATION OF TAENIA SAGINATA AND TAENIA CRASSICEPS ANTIGENS USING DIFFERENT CONTROL-SERA GROUPS TO THE BOVINE CYSTICERCOSIS DIAGNOSIS WITH WESTERN BLOT ASSAY

Girotto, Aline1; Pinto, Paulo Sérgio de Arruda2; Dias, Júlio César Oliveira3; Chaves, Leandro Siqueira3; Groppo, Adriano Felippe3; Ferreira, Hanna Carolina Campos3.

1Master's Student in Veterinary Medicine, Department of Veterinary Medicine, UFV, Viçosa. 2Associate Professor, Department of Veterinary Medicine, UFV, Viçosa. 3Undergraduate Research Fellows, Department of Veterinary Medicine, UFV, Viçosa;

Introduction

Among the methods used for the diagnosis of bovine cysticercosis, post-mortem examination in slaughterhouses and immunological tests such as ELISA and immunoblot stand out. In these tests, diagnostic failures have been detected, mainly in mild infections, which have been demanding new research for their improvement.

In immunological tests, homologous antigens of Taenia saginata and heterologous antigens of Taenia crassiceps, a fox parasite, have been used. The latter is maintained in the laboratory through passages in Balb/c mice.

The use of immunoblot in the diagnosis of bovine cysticercosis is still incipient, demanding research on its performance. Thus, the objective of this study was to evaluate the efficacy of three antigenic preparations obtained from larvae (cysticerci) of T. saginata and T. crassiceps for the serological diagnosis of bovine cysticercosis.

Material and Methods

Antigenic preparations were obtained from T. saginata larvae (cysticerci) (total crude extract - Tsag) and T. crassiceps (total crude extract - Tcra and vesicular fluid - LVcra) for the diagnosis of bovine cysticercosis using the immunoblot technique (LARRALDE, 1990 and PINTO, 2001). Anti-cysticerci IgG antibodies were screened in serum samples from 4 cattle with cysticercosis (2 experimentally infected and 2 naturally infected), 2 uninfected cattle, and 2 cattle with other infections. Based on a previous standardization of the immunoblot, dilutions of 1:12.5 for the sera and 1:2000 (Tcra and LVcra) and 1:1000 (Tsag) for the conjugate (rabbit anti-bovine IgG conjugated with peroxidase) were used in the test.

Results and Discussion

The Tcra antigen showed greater diversity in recognized peptides compared to the others. The low molecular weight bands, between 6.5 and 14 Kda, were strongly detected in both Taenia crassiceps antigens when the sera from experimentally positive cattle for cysticercosis were used. However, the differentiation between sera from naturally infected and negative cattle for cysticercosis was not as evident. Taking into account the ease of laboratory maintenance and collection of the antigen in question and the high degree of cross-reactivity against the sera of positive animals in the immunoblot test, the use of T. crassiceps larvae antigen is considered a good alternative to replace the T. saginata larvae antigen in the diagnosis of bovine cysticercosis.

Conclusion

The trials performed showed that the immunoblot is a promising test in the diagnosis of bovine cysticercosis, although it presented difficulties in identifying some samples from cattle with mild infection. The T. crassiceps antigens proved to be useful for the immunoblot.

Reference

LARRALDE, C. et al. Immunodiagnosis of human cysticercosis in cerebrospinal fluid: antigens from murine Taenia crassiceps cysticerci effectively substitute those from porcine Taenia solium. Arch. Pathol. Lab. Med., v.114, pp.926-928, 1990.

PINTO, P. S. A., et al. Immunoblot analysis using antigen from Taenia crassiceps cysticerci in the diagnosis of swine cysticercosis. Bol. chil. parasitol., v.56, n.1-2, pp.36-42, 2001.

Supported by: FAPEMIG.

Corresponding author: Aline Girotto - Email: girottoalinevet@gmail.com

AVALIAÇÃO MICROBIOLÓGICA DE PRESUNTOS FATIADOS REFRIGERADOS COMERCIALIZADOS EM SUPERMERCADOS DE FORTALEZA, CE.

MICROBIOLOGICAL EVALUATION OF REFRIGERATED SLICED HAM COMMERCIALIZED AT SUPERMARKETS IN FORTALEZA, CEARÁ

Serio, J.3; Freitas, C.A.S.2; Rabelo, J.L.2; Muniz, C.R.1

1 Embrapa Tropical Agroindustry. 2 State University of Ceará. 3 State University of Campinas, UNICAMP

Introduction

Ham is characterized by containing at least 14% crude protein (BRASIL, 2000), a pH of 5.9 to 6.1 (JAY, 2005), and a minimum Aw of 0.91 (SETOR1, 2007), with MENONCIN et al. (2005) having obtained values of 0.977, which makes this food perishable and highly susceptible to the growth of microorganisms. However, the production of ham according to Good Manufacturing Practices, associated with maintaining refrigeration during transport and storage, as well as good hygienic-sanitary conditions of the facilities, slicer, and handler at distribution points, can ensure the microbiological quality of the marketed hams.

Incorrect handling and deficiencies in procedures aimed at ensuring food safety, in addition to the lack of information on the importance of food security, lead to the occurrence of numerous cases of poisoning, contamination, and infection (FREO and REOLON, 2006), as a result of the ingestion of pathogenic microorganisms or their toxins.

Considering the potential risks of food contamination during the distribution phase, it becomes necessary to evaluate the hygienic-sanitary conditions of the establishments, as well as to provide guidance for food handlers (OLIVEIRA et al., 2005).

However, the Pan American Health Organization considers that surveys in the area of food sanitary surveillance are still scarce, and those that have been carried out frequently find a high degree of contamination

*Glossary:
Embrapa: Brazilian Agricultural Research Corporation
FAPEMIG: Research Support Foundation of the State of Minas Gerais

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 24, 2026.

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Maurício Costa Alves da Silva: mcasilva@ufba.br

AVALIAÇÃO DE ANTÍGENOS DE TAENIA SAGINATA E DE TAENIA CRASSICEPS FRENTE A DIFERENTES GRUPOS DE SOROS-CONTROLE NO DIAGNÓSTICO DA CISTICERCOSE BOVINA POR MEIO DO IMMUNOBLOT

EVALUATION OF TAENIA SAGINATA AND TAENIA CRASSICEPS ANTIGENS USING DIFFERENT CONTROL-SERA GROUPS TO THE BOVINE CYSTICERCOSIS DIAGNOSIS WITH WESTERN BLOT ASSAY

Girotto, Aline1; Pinto, Paulo Sérgio de Arruda2; Dias, Júlio César Oliveira3; Chaves, Leandro Siqueira3; Groppo, Adriano Felippe3; Ferreira, Hanna Carolina Campos3.

1Mestranda em Medicina Veterinária, Departamento de Veterinária, UFV, Viçosa 2Professor Associado, Departamento de Veterinária, UFV, Viçosa. 3Bolsistas de Iniciação Científica, Departamento de Veterinária, UFV, Viçosa;

Introdução

Entre os métodos utilizados para o diagnóstico da cisticercose bovina destacam-se o exame anátomo-patológico em matadouros e testes imunológicos como o ELISA e o immunoblot. Nestes testes foram detectadas falhas diagnósticas, principalmente em infecções leves, que vêm demandando novas pesquisas para seu aprimoramento.

Nos testes imunológicos têm sido utilizados antígenos homólogos de Taenia saginata e heterólogos de Taenia crassiceps, parasita de raposa. O último, mantido em laboratório por passagens em camundongos Balb c.

O emprego do immunoblot no diagnóstico da cisticercose bovina ainda é incipiente, demandando pesquisas do seu desempenho. Deste modo, objetivou-se neste trabalho avaliar a eficácia de três preparações antigênicas obtidas de larvas (cisticercos) de T. saginata e de T.crassiceps para o diagnóstico sorológico da cisticercose bovina.

Material e Métodos

As preparações antigênicas foram obtidas de larvas (cisticercos) de T. saginata (extratos brutos total - Tsag) e de T.crassiceps (extratos brutos total - Tcra e líquido vesicular - LVcra), para o diagnóstico da cisticercose bovina, utilizando a técnica de immunoblot (LARRALDE, 1990 e PINTO, 2001). Os anticorpos IgG anti-cisticercos foram pesquisados em amostras de soros de 4 bovinos com cisticercose (2 infectados experimentalmente e 2 naturalmente), 2 bovinos não infectados e 2 bovinos com outras infecções. A partir de uma prévia padronização do imunoblot, foram utilizadas no teste as diluições de 1:12,5 para os soros e 1:2000 (Tcra e LVcra) e 1:1000 (Tsag) para o conjugado (IgG de coelho anti-IgG bovina conjugada com peroxidase).

Resultados e discussão

O antígeno Tcra, apresentou maior diversidade em peptídeos reconhecidos em relação aos outros. As bandas de baixo peso molecular, entre 6.5 e 14Kda, foram fortemente detectadas em ambos os antígenos de Taenia crassiceps, quando foram utilizados os soros dos animais experimentalmente positivos para cisticercose. Entretanto a diferenciação entre soros de bovinos naturalmente infectados e negativos para a cisticercose não foi tão evidente. Levando em conta a facilidade de manutenção e obtenção em laboratório do antígeno em questão e alto grau de reatividade cruzada frente aos soros dos animais positivos, no teste de immunoblot, considera-se uma boa alternativa o emprego do antígeno de larvas de T. crassiceps em substituição ao antígeno de larvas de T. saginata no diagnóstico da cisticercose bovina.

Conclusões

Os ensaios realizados mostraram que o immunoblot é um teste promissor no diagnóstico da cisticercose bovina, embora tenha apresentado dificuldades em identificar algumas amostras de bovinos com infecção discreta. Os antígenos de T. crassiceps mostraram-se úteis para o immunoblot.

Referências

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PINTO, P. S. A., et al. Immunoblot analysis using antigen from Taenia crassiceps cysticerci in the diagnosis of swine cysticercosis. Bol. chil. parasitol., v.56, n.1-2, p .36-42, 2001.

Apoio: FAPEMIG.

Autor a ser contactado: Aline Girotto - E-mail: girottoalinevet@gmail.com

AVALIAÇÃO MICROBIOLÓGICA DE PRESUNTOS FATIADOS REFRIGERADOS COMERCIALIZADOS EM SUPERMERCADOS DE FORTALEZA, CE.

MICROBIOLOGICAL EVALUATION OF REFRIGERATED SLICED HAM COMMERCIALIZED AT SUPERMARKETS IN FORTALEZA, CEARÁ

Serio, J.3; Freitas, C.A.S.2; Rabelo, J.L.2; Muniz, C.R.1;

1 Embrapa Agroindústria Tropical. 2 Universidade Estadual do Ceará. 3 Universidade Estadual de Campinas, UNICAMP

Introdução

Presunto caracteriza-se por apresentar no mínimo 14% de proteína bruta (BRASIL, 2000), pH de 5,9 a 6,1 (JAY, 2005) e Aw mínima de 0,91 (SETOR1, 2007), tendo MENONCIN et al., (2005) obtido valores de 0,977, o que torna este alimento perecível, bastante susceptível ao crescimento de microrganismos. Contudo, a elaboração do presunto segundo as Boas Práticas de Fabricação, associada à manutenção da refrigeração durante o transporte e armazenamento, bem como as boas condições higiênico-sanitárias das instalações, fatiador e manipulador nos locais de distribuição podem assegurar a qualidade microbiológica dos presuntos comercializados.

A manipulação incorreta e a deficiência nos procedimentos voltados à garantia da segurança dos alimentos, além da falta de informação sobre a importância da segurança alimentar, levam à ocorrência de inúmeros casos de intoxicação, contaminação e infecção (FREO e REOLON, 2006), como resultado da ingestão de microrganismos patogênicos ou suas toxinas.

Considerando-se os possíveis riscos de contaminação de alimentos, na fase de distribuição, torna-se necessária a avaliação das condições higiênico-sanitárias dos estabelecimentos, bem como a orientação dos manipuladores de alimentos (OLIVEIRA et al., 2005).

No entanto, a Organização Panamericana de Saúde considera que ainda são escassos os levantamentos na área de vigilância sanitária de alimentos, os que têm sido efetuados freqüentemente constatam elevado grau de contamina-

Certificate

We hereby certify that

Hanna Carolina Campos Ferreira

participed as an attendee in the

Alternative and Complementary Medicine Cycle

of the **21st Veterinary Medicine Week** at the Federal Rural University of Rio de Janeiro, from May 24 to 28, 2004.

Seropédica, May 28, 2004

Leonardo da Silva Castro
General Coordination of DAGH

João Telhado
General Coordinator of the 21ST SEMEV

Laerte Grisi
Director of the Veterinary Institute

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Date: September 24, 2026.

Certificado

Certificamos que

Hanna Carolina Campos Ferreira

participou como ouvinte do

Ciclo de Medicina Alternativa e Complementar

da **XXI Semana do Médico Veterinário** da Universidade Federal Rural do Rio de Janeiro, no período de 24 a 28 de maio de 2004.

Seropédica, 28 de maio de 2004

Leonardo da Silva Castro
Coordenação Geral do DAGH

João Telhado
Coordenador Geral da XXI SEMEV

Laerte Grisi
Diretor do Instituto de Veterinária



14TH ACADEMIC WEEK OF THE VETERINARY MEDICINE PROGRAM

Training and role of the contemporary veterinarian

FEDERAL UNIVERSITY OF VIÇOSA
DEPARTMENT OF VETERINARY MEDICINE

CERTIFICATE

We hereby certify that

Hanna Carolina Campos Ferreira

participated in the *14th Academic Week of the Veterinary Medicine Program*, held from October 17 to 20, 2006, at the Federal University of Viçosa.

Short Course: Veterinary Homeopathy
(workload 06 hours)

Laércio dos Anjos Benjamin
Assistant Professor of the Department of Veterinary Medicine - UFV

Sponsored by
CRMV - MG
CONTINUING EDUCATION PROJECT

Andréa Pacheco Batista Borges
Head of the Department of Veterinary Medicine - UFV

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Date: September 24, 2026.



14ª SEMANA ACADÊMICA DO CURSO DE MEDICINA VETERINÁRIA

Formação e atuação do médico veterinário contemporâneo

UNIVERSIDADE FEDERAL DE VIÇOSA
DEPARTAMENTO DE VETERINÁRIA

CERTIFICADO

Certificamos que

Hanna Carolina Campos Ferreira

participou da *14ª Semana Acadêmica do Curso de Medicina Veterinária,* realizada de 17 a 20 de outubro de 2006 na Universidade Federal de Viçosa.

Mini-Curso: Homeopatia Veterinária
(duração 06 horas)

Laércio dos Anjos Benjamin
Professor adjunto do Departamento de Veterinária - UFV

Patrocínio
CRMV - MG
CONSELHO REGIONAL DE MEDICINA VETERINÁRIA DO ESTADO DE MINAS GERAIS
PROJETO EDUCAÇÃO CONTINUADA

Andréa Pacheco Batista Borges
Chefe do Departamento de Veterinária - UFV

cintecs
3rd CONGRESS ON INNOVATION, TECHNOLOGY AND SUSTAINABILITY FOR PUBLIC MANAGEMENT

CODANORTE
MULTIFUNCTIONAL INTERMUNICIPAL CONSORTIUM FOR SUSTAINABLE ENVIRONMENTAL DEVELOPMENT OF NORTHERN MINAS GERAIS

CERTIFICATE

This is to certify that Hanna Carolina Campos Ferreira participated as a speaker at the **III CONGRESS ON INNOVATION, TECHNOLOGY AND SUSTAINABILITY FOR PUBLIC MANAGEMENT – CINTECS**, held on August 27 and 28, 2025, in Montes Claros, Minas Gerais, promoted by the **Multifunctional Intermunicipal Consortium for Sustainable Environmental Development of Northern Minas Gerais (Codanorte)**.

Miguel Felipe Ferreira de Oliveira

Montes Claros, August 28, 2025

Organization Production Co-Organization

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 21, 2026

cintecs
3º CONGRESSO DE INOVAÇÃO, TECNOLOGIA E SUSTENTABILIDADE PARA GESTÃO PÚBLICA

CODANORTE
CONSÓRCIO INTERMUNICIPAL MULTIFINALITÁRIO PARA O DESENVOLVIMENTO AMBIENTAL SUSTENTÁVEL DO NORTE DE MINAS

CERTIFICADO

Certificamos que Hanna Carolina Campos Ferreira participou como palestrante do **III CONGRESSO DE INOVAÇÃO, TECNOLOGIA E SUSTENTABILIDADE PARA GESTÃO PÚBLICA - CINTECS**, nos dias 27 e 28 de agosto de 2025, em Montes Claros-MG, promovido pelo **Consórcio Intermunicipal Multifinalitário para o Desenvolvimento Ambiental Sustentável do Norte de Minas (Codanorte)**.

Miguel Felipe Ferreira de Oliveira

Montes Claros, 28 de agosto de 2025

6TH BRAZILIAN SYMPOSIUM ON SUSTAINABLE AGRICULTURE
3RD INTERNATIONAL CONGRESS ON SUSTAINABLE AGRICULTURE

September 26 to 27, 2014 – Federal University of Viçosa - UFV.

We hereby certify that **Hanna Carolina Campos Ferreira** served as an *ad hoc* reviewer for the Proceedings of the Expanded Abstracts of the 6th Brazilian Symposium on Sustainable Agriculture and 3rd International Congress on Sustainable Agriculture, evaluating the abstracts submitted for publication in 2014 on the basis of their scholarly merit.

-----// signature //-----

Rogério de Paula Lana

Associate Professor IV – Research Productivity Fellow CNPq - B1

Animal Science Department / UFV

Event Coordinator



CERTIFICATE

5TH SIMBRAS - BRAZILIAN SYMPOSIUM ON SUSTAINABLE AGRICULTURE

2ND INTERNATIONAL CONGRESS ON SUSTAINABLE AGRICULTURE

OCTOBER 18 TO 20, 2013

SUSTAINABLE MULTIFUNCTIONALITY IN THE COUNTRYSIDE: AGRICULTURE, LIVESTOCK, AND FORESTRY

We hereby certify that:
Hanna Carolina Campos Ferreira served as a reviewer for the 5th Brazilian Symposium on Sustainable Agriculture and the 2nd International Congress on Sustainable Agriculture, held by the Vice-President's Office for Outreach and Culture of the Federal University of Viçosa from October 18 to 20, 2013.

-----// signature //-----

Gumercindo de Souza Lima
Vice-President of Outreach and Culture / UFV

-----// signature //-----

Rogério de Paula Lana
President of the Brazilian Symposium on Sustainable Agriculture

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura.

Date: September 24, 2026.

VI SIMPÓSIO BRASILEIRO DE AGROPEUÁRIA SUSTENTÁVEL
III CONGRESSO INTERNACIONAL DE AGROPECUÁRIA SUSTENTÁVEL

26 a 27 de Setembro de 2014 – Universidade Federal de Viçosa- UFV

Certificamos que **Hanna Carolina Campos Ferreira** atuou como parecerista *ad hoc* dos Anais dos Resumos Expandidos do VI SIMPÓSIO BRASILEIRO DE AGROPEUÁRIA SUSTENTÁVEL e III CONGRESSO INTERNACIONAL DE AGROPECUÁRIA SUSTENTÁVEL avaliando, quanto ao mérito, dos resumos submetidos para publicação no ANO 2014.

Rogério de Paula Lana

Professor Associado IV – Bolsista de Produtividade CNPq - B1

Departamento de Zootecnia / UFV

Coordenador do Evento



CERTIFICADO

V SIMBRAS - SIMPÓSIO BRASILEIRO DE AGROPECUÁRIA SUSTENTÁVEL

II CONGRESSO INTERNACIONAL DE AGROPECUÁRIA SUSTENTÁVEL

18 A 20 DE OUTUBRO DE 2013

MULTIFUNCIONALIDADES SUSTENTÁVEIS NO CAMPO: AGRICULTURA, PECUÁRIA E FLORESTAS

Certificamos que:
Hanna Carolina Campos Ferreira participou como parecerista do V Simpósio Brasileiro de Agropecuária Sustentável e II Congresso Internacional de Agropecuária Sustentável, realizado pela Pró Reitoria de Extensão e Cultura, da Universidade Federal de Viçosa, nos dias 18 a 20 de outubro de 2013.

.

Gumercindo de Souza Lima
Pró-Reitor de Extensão e Cultura / UFV

Rogério de Paula Lana

Rogério de Paula Lana
Presidente do Simpósio Brasileiro de Agropecuária Sustentável

CERTIFICATE

FEDERAL UNIVERSITY OF VIÇOSA

DEPARTMENT OF VETERINARY MEDICINE

SPECIALIZATION PROGRAM IN VETERINARY CLINICAL MEDICINE AND SURGERY

We hereby certify, for all due purposes, that Professor **Ernani Paulino do Lago,** President, Professor **Luís Augusto Nero**, and **Hanna Carolina Campos Ferreira,** M.Sc., participated in the Capstone Project Examining Committee for the student enrolled in the Specialization Program in Veterinary Clinical Medicine and Surgery, **Gertrud Elisa Campos Edler**, held at the Federal University of Viçosa on February 28, 2012, entitled **"Occurrence of ketosis in dairy herds in the microregion of Viçosa-MG and association of body condition at calving with the physicochemical composition of milk in early lactation."**

In witness whereof, we sign this document.

Viçosa, April 30, 2012

-----// signature //-----

Prof. Lissandro Gonçalves Conceição

Coordinator of the Specialization Program in Veterinary Clinical Medicine and Surgery

Federal University of Viçosa
Department of Veterinary Medicine
Veterinary Medicine Residency Program

Certificate

We hereby certify, for all due purposes, that **Ernani Paulino do Lago,** President, **Marcus Vinícius Castro Moreira and Hanna Carolina Campos Ferreira** participated in the Capstone Project Examining Committee for the student enrolled in the Veterinary Medicine Residency Program, **Amanda Serrado de Almeida**, held on February 24, 2014, entitled **"Structural, dimensional, and functional characteristics of Free-Stall barns in the Alto Rio Doce region."**

In witness whereof, we sign this document.

-----// signature //-----
Pacífico Antônio Diniz Belém
Coordinator of the Veterinary Medicine Residency Program

Viçosa, February 26, 2014.

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura.

Date: September 25, 2026.

CERTIFICADO

UNIVERSIDADE FEDERAL DE VIÇOSA

DEPARTAMENTO DE VETERINÁRIA

ESPECIALIZAÇÃO EM CLÍNICA E CIRURGIA VETERINÁRIAS

Certificamos para os fins que se fizerem necessários que o Professor **Ernani Paulino do Lago**, Presidente, o Professor **Luís Augusto Nero** e a Mestre **Hanna Carolina Campos Ferreira**, participaram da Banca de Monografia da estudante do Curso de Especialização em Clínica e Cirurgia Veterinárias, **Gertrud Elisa Campos Edler**, ocorrida na Universidade Federal de Viçosa, no dia 28 de fevereiro de 2012, com o título **"Ocorrência de cetose em rebanhos leiteiros na microrregião de Viçosa-MG, e associação da condição corporal ao parto à composição físico-química do leite no início da lactação".**

Por ser verdade, assinamos o presente.

Viçosa, 30 de abril de 2012

Prof. Lissandro Gonçalves Conceição
Coordenador do Curso de Especialização
em Clínica e Cirurgia Veterinárias

Universidade Federal de Viçosa
Departamento de Veterinária
Residência em Medicina Veterinária

Certificado

Certificamos para os devidos fins que se fizerem necessários que **Ernani Paulino do Lago**, Presidente, **Marcus Vinícius Castro Moreira e Hanna Carolina Campos Ferreira** participaram da Banca de Monografia do(a) estudante do Programa de Residência em Medicina Veterinária, **Amanda Serrado de Almeida** ocorrida em 24 de fevereiro de 2014, com título **"Características estruturais, dimensionais e funcionais de galpões do tipo *Free -Stall* na região do Alto Rio Doce".**

Por ser verdade, assinamos o presente.

Pacífico Antônio Diniz Belém
Coordenador do Programa de Residência em Medicina Veterinária

Viçosa, 26 de fevereiro de 2014.

MINISTRY OF AGRICULTURE AND LIVESTOCK – MAPA
SECRETARIAT OF AGRICULTURAL DEFENSE – SDA
DEPARTAMENT OF INSPECTION OF PRODUCTS OF ANIMAL ORIGIN – DIPOA
4TH INSPECTION SERVICE FOR PRODUCTS OF ANIMAL ORIGIN – 4º SIPOA

I hereby declare, for all due purposes, that Hanna Carolina Campos Ferreira, who holds the position of Federal Agricultural Inspection Auditor, participated as a representative of the Ministry of Agriculture and Livestock in the following audits conducted by international official inspectors at establishments manufacturing products of animal origin under the jurisdiction of the 4th Inspection Service for Products of Animal Origin (Minas Gerais, Brazil):

Audit conducted by an official delegation from Mexico at a milk and dairy products processing plant (2025);

Audit conducted by an official delegation from Malaysia at a cattle slaughterhouse (2025);

Audit conducted by an official delegation from Chile at an establishment manufacturing ingredients of animal origin (2024);

Audit conducted by an official delegation from the European Union at a cattle slaughterhouse (2024);

Audit conducted by an official delegation from Peru SIF 2471 at a cattle slaughterhouse (2024);

Audit conducted by an official delegation from China at a cattle slaughterhouse (2024);

Audit conducted by an official delegation from Mexico at a cattle slaughterhouse (2023);

Audit conducted by an official delegation from Malaysia at a cattle slaughterhouse (2022);

Audit conducted by an official delegation from Indonesia at a cattle slaughterhouse (2022);

Audit conducted by an official delegation from the United States of America at a cattle slaughterhouse (2022).

Sincerely,

-----// digital signature //-----

Federal Agricultural Inspection Auditor
Coordinator of the 4th Inspection Service for Products of Animal Origin

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

MINISTÉRIO DA AGRICULTURA E PECUÁRIA – MAPA
SECRETARIA DE DEFESA AGROPECUÁRIA – SDA
DEPARTAMENTO DE INSPEÇÃO DE PRODUTOS DE ORIGEM ANIMAL – DIPOA
4º SERVIÇO DE INSPEÇÃO DE PRODUTOS DE ORIGEM ANIMAL – 4º SIPOA

Declaro, para os devidos fins, que a servidora Hanna Carolina Campos Ferreira, ocupante do cargo de Auditora Fiscal Federal Agropecuária, participou como representante do Ministério da Agricultura e Pecuária nas seguintes auditorias realizadas por servidores oficiais internacionais em estabelecimentos fabricantes de produtos de origem animal sob jurisdição do 4° Serviço de Inspeção de Produtos de Origem Animal (Minas Gerais, Brasil):

Auditoria realizada por delegação oficial do México em usina de beneficiamento de leite e derivados (ano de 2025);

Auditoria realizada por delegação oficial da Malásia em abatedouro frigorífico de bovinos (ano de 2025);

Auditoria realizada por delegação oficial do Chile em estabelecimento fabricante de ingredientes de origem animal (ano de 2024);

Auditoria realizada por delegação oficial da União Europeia em abatedouro frigorífico de bovinos (ano de 2024);

Auditoria realizada por delegação oficial do Peru SIF 2471 em abatedouro frigorífico de bovinos (ano de 2024);

Auditoria realizada por delegação oficial da China em abatedouro frigorífico de bovinos (ano de 2024);

Auditoria realizada por delegação oficial do México em abatedouro frigorífico de bovinos (ano de 2023);

Auditoria realizada por delegação oficial da Malásia em abatedouro frigorífico de bovinos (ano de 2022);

Auditoria realizada por delegação oficial da Indonésia em abatedouro frigorífico de bovinos (ano de 2022);

Auditoria realizada por delegação oficial dos Estados Unidos da América em abatedouro frigorífico de bovinos (ano de 2022).

Atenciosamente,

gov.br Documento assinado digitalmente
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Auditor Fiscal Federal Agropecuário
Coordenador do 4ºServiço de Inspeção de produtos de Origem Animal

SAG Audit – Chile

Establishment registered with SIF XXXX / SIPEAGRO XX-XXXXXX-X

MINISTRY OF
AGRICULTURE AND LIVESTOCK

FEDERAL GOVERNMENT

BRASIL
UNITY AND RECONSTRUCTION

Translator's Notes: SIF - *Serviço de Inspeção Federal* (Brazil's Federal Inspection Service);
SIPEAGRO - *Sistema Integrado de Produtos e Estabelecimentos Agropecuários* (Integrated System for Agricultural Products and Establishments).

Animal Feed Inspection Team

Federal Agricultural Inspection Auditor:

Hanna Carolina Campos Ferreira

MINISTRY OF
AGRICULTURE AND LIVESTOCK

FEDERAL GOVERNMENT

BRASIL

UNITY AND RECONSTRUCTION

Thank you

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

Auditoria SAG – Chile

Estabelecimento registrado no SIF XXXX / SIPEAGRO XX-XXXXXX-X

MINISTÉRIO DA
AGRICULTURA
E PECUÁRIA

GOVERNO FEDERAL

BRASIL
UNIÃO E RECONSTRUÇÃO

Equipe de Fiscalização da Alimentação Animal

Auditor Fiscal Federal Agropecuário:

Hanna Carolina Campos Ferreira

MINISTÉRIO DA
AGRICULTURA
E PECUÁRIA

GOVERNO FEDERAL
BRASIL
UNIÃO E RECONSTRUÇÃO

Grata

Malaysia Audit

SIF XXXX

MINISTRY OF
AGRICULTURE AND LIVESTOCK

FEDERAL GOVERNMENT

BRASIL

UNITY AND RECONSTRUCTION

Translator's Notes: SIF - *Serviço de Inspeção Federal* (Brazil's Federal Inspection Service).

SIF Team

Official Veterinarians

- Hanna Carolina Campos Ferreira
- XXXX XXXX XXXX
- XXXX XXXX XXXX
- XXXX XXXX XXXX XXXX



MINISTRY OF
AGRICULTURE AND LIVESTOCK

FEDERAL GOVERNMENT

UNITY AND RECONSTRUCTION

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Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

Auditoria Malásia

SIF XXXX

MINISTÉRIO DA
AGRICULTURA
E PECUÁRIA

GOVERNO FEDERAL

BRASIL
UNIÃO E RECONSTRUÇÃO

Equipe do SIF

Médicos Veterinários Oficiais

- Hanna Carolina Campos Ferreira
- XXXX XXXX XXXX
- XXXX XXXX XXXX
- XXXX XXXX XXXX XXXX



MINISTÉRIO DA
AGRICULTURA
E PECUÁRIA

GOVERNO FEDERAL
BRASIL
UNIÃO E RECONSTRUÇÃO

Grata

INTERNATIONAL AUDIT - INDONESIA SIF

XXXX

November 24, 2022

Translator's Notes: SIF - *Serviço de Inspeção Federal* (Brazil's Federal Inspection Service);

Official Veterinarians

I. Hanna Carolina Campos Ferreira – Veterinarian in Charge

II. XXXXX XXXXX XXXXX –Veterinarian



I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

AUDITORIA INTERNACIONAL - INDONÉSIA

SIF XXXX

24 de Novembro de 2022

Médicos Veterinários Oficiais

I. Hanna Carolina Campos Ferreira – Encarregada Médica Veterinária

II. XXXXX XXXXX XXXXX – Médica Veterinária



FSIS/USDA AUDIT

SIF XXXX

September 15, 2022

Translator's Notes: SIF - *Serviço de Inspeção Federal* (Brazil's Federal Inspection Service); FSIS - Food Safety and Inspection Service; USDA - U.S. Department of Agriculture.

Official Veterinarians

I. Hanna Carolina Campos Ferreira – Veterinarian in Charge

II. Xxxxxx xxxxxx xxxxxx – Veterinarian



I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

AUDITORIA FSIS/USDA

SIF XXXX

15 de Setembro de 2022

Médicos Veterinários Oficiais

I. Hanna Carolina Campos Ferreira – Encarregada Médica Veterinária

II. Xxxxxx xxxxxx xxxxxx – Médica Veterinária



PERU AUDIT - SENASA

SIF XXXX

MINISTRY OF
AGRICULTURE
AND LIVESTOCK

FEDERAL GOVERNMENT

BRASIL

UNITY AND RECONSTRUCTION

Translator's Notes: SIF - *Serviço de Inspeção Federal* (Brazil's Federal Inspection Service);
SENASA - *Servicio Nacional de Sanidad Agraria* (National Agrarian Health Service).

SIF Team

Official Veterinarians

- Hanna Carolina Campos Ferreira
- XXXX XXXX XXXX XXXX



MINISTRY OF
AGRICULTURE AND LIVESTOCK

FEDERAL GOVERNMENT

UNITY AND RECONSTRUCTION

Thank you

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

AUDITORIA PERU - SENASA

SIF XXXX

MINISTÉRIO DA
AGRICULTURA
E PECUÁRIA

GOVERNO FEDERAL

BRASIL
UNIÃO E RECONSTRUÇÃO

Equipe do SIF

Médicos Veterinários Oficiais

- Hanna Carolina Campos Ferreira
- XXXX XXXX XXXX XXXX



MINISTÉRIO DA
AGRICULTURA
E PECUÁRIA

GOVERNO FEDERAL
BRASIL
UNIÃO E RECONSTRUÇÃO

Grata

GACC Audit/China 2024 SIF

XXXX

MINISTRY OF
AGRICULTURE AND LIVESTOCK

FEDERAL GOVERNMENT

UNITY AND RECONSTRUCTION

Translator's Notes: SIF - *Serviço de Inspeção Federal* (Brazil's Federal Inspection Service); CACC - General Administration of Customs of China

SIF Team

Official Veterinarians

- Hanna Carolina Campos Ferreira
- XXXX XXXX XXXX XXXX



MINISTRY OF
AGRICULTURE AND LIVESTOCK

FEDERAL GOVERNMENT

UNITY AND RECONSTRUCTION

Thank you!

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

Auditoria GACC/China 2024

SIF XXXX

MINISTÉRIO DA
AGRICULTURA
E PECUÁRIA

GOVERNO FEDERAL

BRASIL
UNIÃO E RECONSTRUÇÃO

Equipe do SIF

Médicos Veterinários Oficiais

- Hanna Carolina Campos Ferreira
- XXXX XXXX XXXX XXXX



MINISTÉRIO DA
AGRICULTURA
E PECUÁRIA

GOVERNO FEDERAL
BRASIL
UNIÃO E RECONSTRUÇÃO

Obrigada!

SIF XXXX

SENASICA/MEXICO MISSION

CATTLE

MINISTRY OF AGRICULTURE AND LIVESTOCK

FEDERAL GOVERNMENT

BRASIL

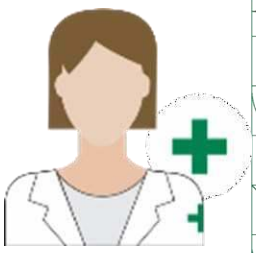
UNITY AND RECONSTRUCTION

Translator's Notes: SIF - *Serviço de Inspeção Federal* (Brazil's Federal Inspection Service);
SENASICA - *Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria* (National Service for Agro-Alimentary Health, Safety, and Quality).

Official Veterinarians

I. Hanna Carolina Campos Ferreira – Veterinarian in Charge

II. XXXX XXXX XXXX XXXX – Veterinarian



MINISTRY OF
AGRICULTURE AND LIVESTOCK

FEDERAL GOVERNMENT

BRASIL

UNITY AND RECONSTRUCTION

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

SIF XXXX

MISSÃO SENASICA/MÉXICO

BOVINOS

MINISTÉRIO DA AGRICULTURA E PECUÁRIA

GOVERNO FEDERAL

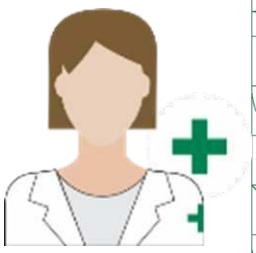
UNIÃO E RECONSTRUÇÃO

25 de Abril de 2023

Médicos Veterinários Oficiais

I. Hanna Carolina Campos Ferreira – Encarregada Médica Veterinária

II. XXXX XXXX XXXX XXXX – Médico Veterinário



MINISTÉRIO DA
AGRICULTURA
E PECUÁRIA

GOVERNO FEDERAL

BRASIL

UNIÃO E RECONSTRUÇÃO

SIF XXXX

XXXXX – MG

Brazil

International Veterinary Audit – Malaysia

June – 2022

MINISTRY OF
AGRICULTURE, LIVESTOCK
AND FOOD SUPPLY

BELOVED HOMELAND
BRAZIL
FEDERAL GOVERNMENT

Translator's Notes: SIF - *Serviço de Inspeção Federal* (Brazil's Federal Inspection Service);

Official Veterinarians

I. Hanna Carolina Campos Ferreira – Veterinarian in Charge

II. XXXX XXXX XXXXX – Veterinarian



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Raphael Michels Fantinato de Moura. **Date: September 27, 2026.**

SIF XXXX

XXXXX – MG

Brasil

Auditoria Internacional Veterinária – Malásia

Junho – 2022

MINISTÉRIO DA AGRICULTURA, PECUÁRIA E ABASTECIMENTO

PÁTRIA AMADA BRASIL GOVERNO FEDERAL

Médicos Veterinários Oficiais

I. Hanna Carolina Campos Ferreira – Encarregada Médica Veterinária

II. XXXX XXXX XXXXX – Médica Veterinária



BRAZILIAN COLLEGE OF VETERINARY FOOD HYGIENISTS - CBMVHA

NAME
Hanna Ferreira

CPF
067.410.916-37

PROFESSION
Veterinarian

CBMVHA

ASSOCIATION REGISTRATION DATE

Fernando Fagundes Fernandes
CBMVHA President - 2024-2028 Term

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

_____ Date: September 18, 2026.

COLÉGIO BRASILEIRO DE MÉDICOS VETERINÁRIOS HIGIENISTAS DE ALIMENTOS - CBMVHA

NOME
Hanna Ferreira

CPF
067.410.916-37

PROFISSÃO
Médica Veterinária

CBMVHA

DATA DE REGISTRO DA ASSOCIAÇÃO

Fernando Fagundes Fernandes
Presidente CBMVHA - Gestão 2024/2028

STATEMENT OF RESPONSIBILITY AND REGISTRATION APPLICATION FORM

I hereby request that the Civil Registry of Legal Entities register the enclosed documentation of the

Legal Entity: BRAZILIAN COLLEGE OF VETERINARY FOOD HYGIENISTS

Legal Entity Reg.[1]: 120477 **CNPJ[1]: 68.583.376/0001-00**

I hereby certify as authentic and true the submitted documentation as well as all information contained therein within this document, including the authenticity of the signatures, under penalty of nullity of the act, assuming personal liability pursuant to **Article 14 of Law 13874/19 and Article 6, §4 of Provision 62/2018 CGJ published in the DOJERJ on 12/20/2018, page 42.**

Rio de Janeiro, **December 9,** 202**5**

PAULO RICARDO CARVALHO RODRIGUES

Digitally signed by PAULO RICARDO CARVALHO RODRIGUES
DN: c=BR, o=ICP-Brasil, ou=AC OAB, ou=68726710000137, ou=Digital Certificate, ou=ype A3 Signature, ou=ATTORNEY, cn=PAULO RICARDO CARVALHO RODRIGUES
Data: 12/10/2025 4:20:26 PM -03'00

Paulo Ricardo Carvalho Rodrigues – Accountant – CRC/RJ 085489/O-2
ATTORNEY/ACCOUNTANT
OR
PARTICIPANT IN THE ACT (Partner, Administrator, President, Director, Chairman of the Assembly and Witnesses)
Qualified Digital Signature (ICP Brasil) and/or Advanced Digital Signature (Gov.br)

Include the identification and qualification of the Person who is signing (FULL NAME AND DOCUMENT No. AND ISSUING AGENCY).

(1) – In cases of Incorporation, leave the *Registration* and *CNPJ* fields blank.

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2ND AMENDMENT AND CONSOLIDATION OF THE BYLAWS OF THE BRAZILIAN COLLEGE OF VETERINARY FOOD HYGIENISTS - CBMVHA

CNPJ No. 68.583.376/0001-00

CHAPTER I

NAME, REGISTERED OFFICE, AND PURPOSE

Article 1. The Brazilian College of Veterinary Food Hygienists (CBMVHA) is a non-profit, non-partisan association, with its registered office at Rua Marechal Marciano, 971, portion, Realengo, Rio de Janeiro, Rio de Janeiro, Brazil, ZIP Code: 21721-012.

Article 2 - CBMVHA has the following purposes:

a) To contribute to the technical-scientific development of Veterinary Medicine in the country;

b) To promote exchange and cooperation among professionals and researchers in Veterinary Sciences, and especially in food science, hygiene, and technology.

c) To safeguard the high standard of professional ethics among its members; and

d) To conduct evaluation processes, issue, and renew specialist certificates in the following specialties: Hygienic-Sanitary Inspection of Mammal Slaughter, Hygienic-Sanitary Inspection of Poultry Slaughter, Hygienic-Sanitary Inspection of Meat Products, Hygienic-Sanitary Inspection of Fish and Fish Products, Hygienic-Sanitary Inspection of Eggs and Egg Products, Hygienic-Sanitary Inspection of Milk and Dairy Products, Hygienic-Sanitary Inspection of Bee Products and Their Derivatives, Mammal Slaughter Technology, Poultry Slaughter Technology, Meat Products Technology, Fish and Fish Products Technology, Milk and Dairy Products Technology, Eggs and Egg Products Technology, Bee Products and Their Derivatives Technology, Pre-slaughter Handling and Humane Slaughter, Technology and Processing of Animal By-products, and Public Health, whenever the college is accredited for such purposes.

Article 3. CBMVHA seeks to achieve the purposes mentioned in the previous article through:

a) Holding national and international congresses;

b) Offering refresher courses in food science, hygiene, and technology;

c) Promoting technical-scientific meetings to bring together researchers in food science, hygiene, and technology; and

NOTARY PUBLIC AND CIVIL REGISTRY OFFICE OF NATURAL PERSONS ESPUMOSO/RS

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d) Awarding scientific papers of true value in food science, hygiene, and technology.

CHAPTER II

MEMBERSHIP

Article 4. The Membership of CBMVHA is composed of emeritus members, professional members, and student members.

§1 Emeritus members are those who signed the College's founding minutes, past presidents of the College, and those upon whom the Board of Directors bestowed said title in recognition of the relevance of their work in food science, hygiene, and technology, with the right to vote in the General Assembly.

§2 Emeritus members are exempt from paying annual fees.

§3 Professional members are those registered with their respective professional councils, with the right to vote in the General Assembly.

§4 Student members are those enrolled in technical, undergraduate, and graduate courses, without the right to vote in the General Assembly.

§5 Only emeritus members or professional members who are Veterinarians in good standing with their annual fees may run for the College's Board of Directors.

Article 5. The following are rights of members in good standing with the College's treasury:

a) To receive communications of interest from the entity;

b) To receive discounts on college events; and

c) To vote in assemblies, with the exception of student members.

Article 6. The following are duties of CBMVHA members:

a) To contribute regularly to the payment of annual fees; and

b) To comply with and enforce these Bylaws, as well as the decisions of the General Assembly and the Board of Directors.

Article 7. Members who fail to pay two consecutive annual fees shall be expelled from the membership, except for reasons of force majeure, at the discretion of the Board of Directors.

§1 Annual fees must be paid by December 31 of each year and will be valid for the entire subsequent year.

§2 Members who act in disagreement with the College's purposes may be expelled, with the right to appeal to the board of directors.

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Sole paragraph. Member legal entities shall be entitled to:

I - Vote in the General Assembly;

II - Discounts on college events; and

III - Inclusion of their logo and advertising on the college website.

CHAPTER III

BOARD OF DIRECTORS AND GENERAL ASSEMBLY

Article 9. The organs of the Brazilian College of Veterinary Food Hygienists are:

a) the Board of Directors;

b) the General Assembly; and

c) the Electoral Committee.

Article 10. The Board of Directors is composed of the Presidency, General Secretariat, Treasury, Scientific Directorate, Events Directorate, and Directorate of Communication and Institutional Relations, all elected in the General Assembly for a four-year term, with a single consecutive reelection permitted for the same office.

Article 11. The Board of Directors is responsible for:

a) Executing and enforcing the resolutions of the General Assembly;

b) Promoting and preparing scientific meetings and events;

c) Deliberating on the admission and expulsion of members;

d) To convene the General Assembly and the Electoral Committee;

e) To periodically present reports and trial balances of the entity;

f) To propose the amount of fees; and

g) To draft, approve, and propose Internal Regulations to the General Assembly whenever they become necessary.

Article 12. The Presidency is responsible for:

a) Representing the College in and out of court, whenever necessary;

NOTARY PUBLIC AND CIVIL REGISTRY OFFICE OF NATURAL PERSONS
ESPUMOSO/RS

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b) To convene and preside over the meetings of the Board of Directors and the General Assembly, subsequently executing the resolutions passed; and

c) To appoint and dissolve Special Committees, as well as Working Groups.

§1 The President shall be replaced, in their absence, impediment, or vacancy of office, by the General Secretary.

§2 In the event of a tie in the board's deliberations, the president shall cast the deciding vote.

Article 13. The General Secretariat is responsible for:

a) Replacing the President in their absence;

b) Heading the College's Secretariat in all its inherent duties, involving administration, and taking minutes of the meetings of the Board of Directors and General Assembly; and

c) Executing the tasks assigned to them by the President;

Article 14. The Treasury is responsible for:

a) Managing the College's assets and finances jointly with the President or the General Secretary;

b) Supervising the College's accounting books;

c) Preparing the annual budget forecast;

d) To organize the balance sheets to be presented to the General Assembly; and

e) To perform banking operations jointly with the President or the General Secretary.

Article 15. The Scientific Directorate is responsible for:

a) Appointing members and managing scientific committees;

b) Defining guidelines and managing the submission of scientific papers at congresses and events;

c) To provide the scientific proceedings of the congresses;

d) To assist, within its competence, with the events held by the entity, jointly with the Events Directorate; and

e) To maintain relations with academia, creating institutional outreach jointly with the Directorate of Communication and Institutional Relations;

Article 16. The Events Directorate is responsible for:

a) Conducting preliminary surveys of potential venues for holding College events;

b) Organizing, jointly with contracted companies, the congresses and events to be held by the College; and

NOTARY PUBLIC AND CIVIL REGISTRY OFFICE OF NATURAL PERSONS ESPUMOSO/RS

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c) To participate in the management of events that may be held in partnership with other entities, jointly with the Directorate of Communication and Institutional Relations.

Article 17. The Directorate of Communication and Institutional Relations is responsible for:

a) To manage the College's website and social media networks;

b) To prospect sponsors for the entity's events, in partnership with the Events Directorate; and

c) To maintain relations with companies, funding agencies, government, academia, Non-Governmental Organizations, and other related entities aiming to support the college and its events.

Article 18. The General Assembly shall meet mandatorily once a year to review the report and financial statements of the Board of Directors, and other matters may be included in the agenda.

§1 Ordinary General Assemblies are of exclusive convocation by the President of the College, whereas Extraordinary General Assemblies may be convened at any time by the President or by two-thirds of the voting members, but always in writing, through the General Secretary, with a minimum advance notice of thirty days and expressly indicating the purpose of the convocation.

§2 Convocations of members to General Assemblies shall be made preferably via email, messaging applications, and social media networks.

§3 Assemblies may take place in person during congresses or virtually by videoconference.

Article 19. The General Assembly is sovereign in its decisions, with the participation of members in good standing who are entitled to vote.

Sole paragraph. The General Assembly shall meet upon first call with a minimum attendance of two-thirds of the members in good standing entitled to vote. If at the appointed time there is no quorum, it shall meet thirty minutes later upon second call with any number of members, with resolutions passed by the majority of participating members in an open vote always considered prevailing.

Article 20. The Electoral Committee shall be composed of a President, a Secretary, and one additional member, all appointed by the General Assembly.

§1 The President of the Electoral Committee may designate other necessary assistants to the committee, provided they are members of the college.

§2 The Secretary of the Electoral Committee shall provide the election data for inclusion in the minutes.

NOTARY PUBLIC AND CIVIL REGISTRY OFFICE OF NATURAL PERSONS
ESPUMOSO/RS

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CHAPTER IV

ELECTIONS

Article 21. Elections shall be conducted by secret ballot, counting the votes by slates registered with the General Secretariat at least thirty days prior to the election date.

§1 The election shall be held every four years, during the congress, except in situations of force majeure.

§2 Only associated Veterinarians in good standing with their annual fees may run for the board of directors.

§3 Elections shall be guided by the internal regulations of the electoral process approved in the general assembly.

CHAPTER V

ASSETS AND FINANCES OF THE COLLEGE

Article 22. The College's assets shall be formed by property donated, bequeathed, or acquired by it, and its financial resources by the collection of membership fees provided for in these Bylaws, as well as by funds from other sources.

Sole paragraph. Individual members shall pay an annual fee equivalent to 10% of the national minimum wage.

CHAPTER VI

GENERAL AND TRANSITIONAL PROVISIONS

Article 24. These Bylaws may only be amended by a vote at a specially convened General Assembly, attended by two-thirds of the voting members in good standing with their annual fees.

Sole Paragraph. If it is not possible to reach a quorum, the rule of the Sole Paragraph of Article 19 shall apply.

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NOTARY PUBLIC AND CIVIL REGISTRY OFFICE OF NATURAL PERSONS
ESPUMOSO/RS

Article 25. The sale of assets, as well as the dissolution of the Association, shall only take effect under the conditions provided for in Article 23.

Article 26. The term of office of the Board of Directors with the new composition of offices shall begin immediately after the approval of these bylaws.

Article 27. In the absence of express provisions in these Bylaws, the processing of the meetings of the Board of Directors and Assemblies shall be supplemented by the uses, customs, and the specific legislation governing Associations of this kind.

Article 28. These Bylaws were revised in accordance with the new civil legislation (Law No. 10.406 of January 10, 2002) and approved by the members as per the minutes of the General Assembly of November 8, 2025, which contain their names, as well as those of the members of the Board of Directors.

Article 29. Any cases not covered herein shall be resolved by the Board of Directors and endorsed by the General Assembly, with the court of the Judicial District of the city of Rio de Janeiro - Rio de Janeiro being elected as the venue.

Article 30. These Bylaws, duly adapted to the terms of Law No. 10.406/02, which established the New Brazilian Civil Code, shall enter into force on the date of their approval and registration with the Commercial Registry of the State of Rio de Janeiro.

Rio de Janeiro, November 8, 2025.

REGISTRY OFFICE

gov.br Digitally signed document
FERNANDO FAGUNDES FERNANDES
Date: 12/07/2025 7:41:23 PM - 0300
Verify at https://validar.iti.gov.br

FERNANDO FAGUNDES FERNANDES
President

NOTARY OFFICE OF ESPUMOSO / RS

TIAGO LUIS PRETTO
General Secretary

Notary Office and Civil Registry Office of Natural Persons of Espumoso/RS
Avenida Fernando Ferrari, 811 - Centro - Espumoso - RS - Fone: (54) 3383-1809 - tabelionato.espumoso@gmail.com

I notarize the signature of TIAGO LUIS PRETTO, as indicated by the arrow, used by this Notary Office. I CERTIFY.

Fernanda Ficagna - Authorized Clerk
Espumoso - 11/10/2025 - at 1:16 PM
Fees: 6.90 - Seal: 0200.01.2400001.36699 - Amount: R$ 2.10

NOTARY PUBLIC AND CIVIL REGISTRY OFFICE OF NATURAL PERSONS
SPUMOSO/RS

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Civil Registry of Legal Entities
Judicial District of the Capital of Rio de Janeiro
Rua México, 148, 3rd floor, Centro
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CGJ : Judicial Adinistrative Department
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I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 18, 2026.

TERMO DE RESPONSABILIDADE E REQUERIMENTO DE REGISTRO

Requeiro ao Registro Civil de Pessoas Jurídicas o registro da presente documentação da

Pessoa Jurídica: COLEGIO BRAS DE MEDICOS VET HIG ALIMENTOS

Matrícula da PJ[1]: 120477 **CNPJ[1]:** 68.583.376/0001-00

Reconheço como autêntica e verdadeira a documentação enviada bem como todas as informações nela constantes neste documento, inclusive a autenticidade das assinaturas, sob pena de nulidade do ato, assumindo responsabilidade pessoal nos termos do **art. 14 da Lei 13874/19 e art. 6º §4º do Provimento 62/2018 CGJ publicado no DOJERJ de 20/12/18 pag. 42**.

Rio de Janeiro, 09 de dezembro de 2025

PAULO RICARDO CARVALHO RODRIGUES

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Paulo Ricardo Carvalho Rodrigues – Contador – CRC/RJ 085489/O-2
ADVOGADO/CONTADOR
OU
PARTICIPANTE DO ATO (Sócio, Administrador, Presidente, Diretor, Presidente da Assembleia e Testemunhas)

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(1) – Em casos de Constituição deixar o preenchimento em branco dos campos *Matrícula e CNPJ*.

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2ª ALTERAÇÃO E CONSOLIDAÇÃO DO ESTATUTO SOCIAL DO COLÉGIO BRASILEIRO DE MÉDICOS VETERINÁRIOS HIGIENISTAS DE ALIMENTOS - CBMVHA

CNPJ n° 68.583.376/0001-00

CAPÍTULO I

DA DENOMINAÇÃO, SEDE E OBJETIVOS

Art. 1º O Colégio Brasileiro de Médicos Veterinários Higienistas de Alimentos (CBMVHA) é uma associação sem fins lucrativos, apartidária, com sede na Rua Marechal Marciano, 971, parte, Realengo, Rio de Janeiro, RJ, Brasil, CEP: 21721-012.

Art. 2º - O CBMVHA tem como objetivos:

a) Contribuir para o desenvolvimento técnico-científico da Medicina Veterinária no país;

b) Promover o intercâmbio e a cooperação entre profissionais e pesquisadores em Ciências Veterinárias e especialmente em ciência, higiene e tecnologia de alimentos.

c) Zelar pelo elevado padrão da ética profissional entre os seus associados; e

d) Realizar processo de avaliação, emitir e renovar os títulos de especialista nas seguintes especialidades: Inspeção Higiênico-sanitária de Abate de Mamíferos, Inspeção Higiênico-sanitária de Abate de Aves, Inspeção Higiênico-sanitária de Produtos Cárneos, Inspeção Higiênico-sanitária de Pescado e seus Derivados, Inspeção Higiênico-sanitária de Ovos e seus Derivados, Inspeção Higiênico-sanitária de Leite e seus Derivados, Inspeção Higiênico-sanitária de Produtos das Abelhas e seus Derivados, Tecnologia de Abate de Mamíferos, Tecnologia de Abate de Aves, Tecnologia de Produtos Cárneos, Tecnologia de Pescado e seus Derivados, Tecnologia de Leite e seus Derivados, Tecnologia de Ovos e seus Derivados, Tecnologia de Produtos das Abelhas e seus Derivados, Manejo Pré-abate e Abate Humanitário, Tecnologia e Processamento de Subprodutos de Origem Animal e Saúde Pública, sempre que o colégio estiver credenciado para tal.

Art. 3º O CBMVHA procura alcançar os objetivos mencionados no artigo anterior mediante:

a) Realização de congressos nacionais e internacionais;

b) Oferta de cursos de reciclagem em ciência, higiene e tecnologia de alimentos;

c) Promoção de reuniões técnico-científicas para aproximar os pesquisadores em ciência, higiene e tecnologia de alimentos; e

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d) Premiação de trabalhos científicos de real valor em ciência, higiene e tecnologia de alimentos.

CAPÍTULO II

DO QUADRO

Art. 4º O Quadro Social do CBMVHA é integrado por associados eméritos, associados profissionais e associados estudantes.

§1º Associados eméritos são os associados que tiverem assinado a ata de fundação do Colégio, ex-presidentes do Colégio e aqueles aos quais a Diretoria conferiu a referida titulação por considerar a relevância do (s) trabalho (s) em ciência, higiene e tecnologia de alimentos, com direito a voto na Assembleia Geral.

§2º Associados eméritos são dispensados do pagamento de anuidade.

§3º Associados profissionais são aqueles com registro nos seus respectivos conselhos profissionais, com direito a voto na Assembleia Geral.

§4º Associados estudantes são aqueles matriculados em cursos técnicos, de graduação e pós-graduação, sem direito a voto na Assembleia Geral.

§5º Apenas associados eméritos ou associados profissionais Médicos Veterinários quites com as anuidades poderão se candidatar à Diretoria do Colégio.

Art. 5º São direitos dos associados quites com a tesouraria do Colégio:

a) Receber comunicações de interesse da entidade;

b) Receber descontos em eventos do colégio; e

c) Votar nas assembleias, com exceção dos associados estudantes.

Art. 6º São deveres dos associados do CBMVHA:

a) Contribuir regularmente com o pagamento das anuidades; e

b) Cumprir e fazer cumprir o presente Estatuto, as decisões da Assembleia Geral e da Diretoria.

Art. 7º Serão excluídos do quadro de associados aqueles que deixarem de pagar duas anuidades consecutivas, salvo motivo de força maior, a juízo da Diretoria.

§1º As anuidades deverão ser pagas até o dia 31 de dezembro de cada ano e terão validade por todo o ano subsequente.

§2º Poderão ser excluídos os associados que agirem em desacordo com os objetivos do Colégio, cabendo recurso à diretoria.

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Art. 8º Pessoas jurídicas poderão se associar desde que a atividade desenvolvida coaduna com os objetivos do colégio, mediante pagamento de anuidade equivalente a um salário mínimo nacional.

Parágrafo único. Pessoas jurídicas associadas terão direito a:

I - Voto na Assembleia Geral;

II – Desconto em eventos do colégio; e

III – Inserção da logo e propaganda no site do colégio.

CAPÍTULO III

DA DIRETORIA E DA ASSEMBLEIA GERAL

Art. 9º São órgãos do Colégio Brasileiro de Médicos Veterinários Higienistas de Alimentos:

a) a Diretoria;

b) a Assembleia Geral; e

c) a Comissão Eleitoral.

Art. 10 A Diretoria, compõe-se de Presidência, Secretaria Geral, Tesouraria, Diretoria Científica, Diretoria de Eventos e Diretoria de Comunicação e Relações Institucionais, todos eleitos em Assembleia Geral por período de quatro anos, permitida uma única reeleição consecutiva para o mesmo cargo.

Art. 11 Compete a Diretoria:

a) Executar e fazer executar as deliberações da Assembleia Geral;

b) Promover e preparar as reuniões e eventos científicos;

c) Deliberar sobre a admissão e exclusão de associados;

d) Convocar a Assembleia Geral e a Comissão Eleitoral;

e) Apresentar periodicamente relatórios e balancetes da entidade;

f) Propor o valor de taxas; e

g) Elaborar, aprovar e propor à Assembleia Geral, Regimentos Internos quando estes se fizerem necessários.

Art. 12 Compete à Presidência:

a) Representar o Colégio em juízo e fora dele, quando se fizer necessário;

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b) Convocar e presidir as reuniões da Diretoria e da Assembleia Geral, executando em seguida as resoluções votadas; e

c) Nomear, dissolver Comissões Especiais, assim como, Grupos de Trabalho.

§1º O Presidente será substituído, em suas faltas e impedimentos ou vacância do cargo, pelo Secretário Geral.

§2º Em caso de empate nas deliberações da diretoria, cabe ao presidente o voto de desempate.

Art. 13 Compete à Secretaria Geral:

a) Substituir o Presidente em seus impedimentos;

b) Responder pela Secretaria do Colégio em todas as atribuições próprias, envolvendo, administração e secretariar as reuniões da Diretoria e Assembleia Geral; e

c) Executar as tarefas que lhe forem atribuídas pelo Presidente;

Art. 14 Compete à Tesouraria:

a) Administrar o patrimônio e as finanças do Colégio em conjunto com o Presidente ou o Secretário-geral;

b) Supervisionar a escrituração contábil do Colégio;

c) Elaborar a previsão orçamentária anual;

d) Organizar os balanços a serem apresentados à Assembleia Geral; e

e) Realizar operações bancárias juntamente com o Presidente ou o Secretário Geral.

Art. 15 Compete à Diretoria Científica:

a) Definir os membros e gerenciar as comissões científicas;

b) Definir regras e gerenciar a submissão de trabalhos científicos em congressos e eventos;

c) Providenciar os anais científicos dos congressos;

d) Auxiliar, no que lhe competir, os eventos realizados pela entidade, juntamente com a Diretoria de Eventos; e

e) Manter relação com a academia criando capilaridade juntamente com a Diretoria de Comunicação e Relações institucionais;

Art. 16 Compete à Diretoria de Eventos:

a) Fazer levantamento prévio de possíveis locais para realização de eventos do Colégio;

b) Organizar juntamente com as empresas contratadas os congressos e eventos a serem realizados pelo Colégio; e

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c) Participar da gestão de eventos que vierem a ser realizados em parceria com outras entidades, juntamente com a Diretoria de Comunicação e Relações Institucionais.

Art. 17 Compete à Diretoria de Comunicação e Relações Institucionais:

a) Gerenciar o site e as redes sociais do Colégio;

b) Prospectar patrocinadores para eventos da entidade em parceria com a Diretoria de Eventos; e

c) Manter relação com empresas, órgãos de fomento, governo, academia, Organizações Não Governamentais e outras entidades afins visando apoio ao colégio e seus eventos.

Art. 18 A Assembleia Geral reunir-se-á obrigatoriamente uma vez por ano, para apreciar o relatório e a prestação de contas da Diretoria, podendo ser incluídos na pauta dos trabalhos outros assuntos.

§1º As Assembleias Gerais Ordinárias são de convocação privativa do Presidente do Colégio, enquanto que as Extraordinárias podem ser convocadas a qualquer tempo por ele ou por dois terços dos associados com direito a voto, mas sempre por escrito, através do Secretário Geral, com antecedência mínima de trinta dias e indicando expressamente o objetivo da convocação.

§2º As convocações dos associados para as Assembleias Gerais serão feitas preferencialmente através de e-mails, aplicativos de mensagens e redes sociais.

§3º As assembleias poderão acontecer presencialmente nos congressos ou virtualmente por videoconferência.

Art. 19 A Assembleia Geral é soberana em suas decisões, dela participando os associados quites com direito a voto.

Parágrafo único. A Assembleia Geral reunir-se-á em primeira convocação com a presença mínima de dois terços dos associados quites com direito a voto. Se à hora estabelecida não houver número, reunir-se-á trinta minutos depois, em segunda convocação, com qualquer número de associados, considerando-se sempre vencedoras as deliberações tomadas pela maioria dos associados participantes, em votação a descoberto.

Art. 20 A Comissão Eleitoral será composta por Presidente, Secretário e mais um associado, todos indicados pela Assembleia Geral.

§1º O Presidente da Comissão Eleitoral poderá designar outros auxiliares necessários à comissão, desde que associados ao colégio.

§2º O Secretário da Comissão Eleitoral fornecerá os dados da eleição para inclusão na ata.

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CAPÍTULO IV

DAS ELEIÇÕES

Art. 21 As eleições serão efetuadas por voto secreto, computando-se os votos por chapas registradas pela Secretaria Geral pelo menos trinta dias antes da data da eleição.

§1º A eleição será realizada a cada quatro anos, durante o congresso, salvo em situações de força maior.

§2º Somente poderão se candidatar à diretoria Médicos Veterinários associados e quites com a anuidade.

§3º As eleições serão norteadas por regimento interno de processo eleitoral aprovado em assembleia geral.

CAPÍTULO V

DO PATRIMÔNIO E DAS FINANÇAS DO COLÉGIO

Art. 22 O patrimônio do Colégio será formado pelos bens a ele doados ou legados ou por ele adquiridos, e os recursos financeiros, pela arrecadação das contribuições sociais neste Estatuto bem como por valores procedentes de outras origens.

Parágrafo único. Os associados pessoa física pagam anuidade equivalente a 10% do salário mínimo nacional.

Art. 23 O Colégio perdurará por tempo indeterminado, podendo ser extinto a qualquer tempo, por deliberação da maioria absoluta dos associados participantes da Assembleia Geral Extraordinária especialmente convocada na forma do Art. 18.

Parágrafo único. Em caso de dissolução do Colégio, a Assembleia Geral dará o destino que melhor convier ao patrimônio social e fundos de reserva, pela decisão da maioria absoluta dos sócios, de acordo com os objetivos para que foi fundado o Colégio.

CAPÍTULO VI

DISPOSIÇÕES GERAIS E TRANSITÓRIAS

Art. 24 O presente Estatuto só poderá ser modificado mediante votação em Assembleia Geral especialmente convocada, à qual compareçam dois terços dos associados com direito a voto quites com a anuidade.

Parágrafo Único. Caso não seja possível atingir o quórum, seguir-se-á a regra do Parágrafo Único do Art. 19.

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Art. 25 A alienação de patrimônio, assim como a extinção da Associação, só se efetivará nas condições previstas no Art. 23.

Art. 26 O mandato da Diretoria com a nova composição de cargos terá início imediatamente após a aprovação deste estatuto.

Art. 27 Na falta de disposições expressas neste Estatuto, o processamento das reuniões da Diretoria e Assembleias será suprido pelos usos, costumes e pela legislação específica que rege as Associações da espécie.

Art. 28 O presente Estatuto foi revisto conforme a nova legislação civil (Lei n° 10.406, de 10 de janeiro de 2002) e aprovado pelos associados conforme ata de Assembleia Geral de 08 de novembro de 2025, na qual constam os nomes dos mesmos, bem como os dos membros da Diretoria.

Art. 29 Os casos omissos serão resolvidos pela Diretoria e referendados pela Assembleia Geral, ficando eleito o foro da Comarca da cidade do Rio de Janeiro - RJ.

Art. 30 O presente Estatuto, devidamente adaptado aos termos da Lei n° 10.406/02, que instituiu o Novo Código Civil Brasileiro, entrará em vigor na data de sua aprovação e assentamento na Junta Comercial do Estado do Rio de Janeiro.

Rio de Janeiro, 08 de novembro de 2025.

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Presidente

TABELIONATO DE NOTAS DE ESPUMOSO / RS

TIAGO LUIS PRETTO
Secretário Geral

Tabelionato de Notas e Registro Civil das Pessoas Naturais de Espumoso/RS
Av. Fernando Ferrari, 811 - Centro - Espumoso - RS - Fone: (54) 3383-1809 - tabelionato.espumoso@gmail.com

Reconheço por AUTENTICIDADE a assinatura de TIAGO LUIS PRETTO, indicada com a seta de uso deste Tabelionato. DOU FÉ.

Fernanda Ficagna - Escrevente Autorizada
Espumoso - 10/11/2025 - às 13:16
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Escrevente Autorizado

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ESCREVENTE

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Exhibit C.II - Second Prong - Letters of Support and Resume

March 30, 2026

To the Competent Authority.

I, José de Oliveira Pinto, am writing this letter in support of Hanna Carolina Campos Ferreira, basing my testimony on long-standing technical and academic collaborations at the Federal University of Viçosa (UFV). My perspective on Dr. Ferreira's competencies stems from my career of over twenty-eight years as a Higher-Level Technical Staff Member and Manager of the Large Animal Clinic and Surgery at the Department of Veterinary Medicine of UFV. I hold both master's and doctoral degrees in Veterinary Medicine and, throughout my career, I have been honored on several occasions in recognition of my technical and clinical management in the large animal sector.

I met Dr. Ferreira during her residency in Large Animal Clinic and Surgery, a period during which I directly supervised her performance in surgical procedures, as well as hospital and field care. Subsequently, our collaboration deepened during the doctorate degree, where we worked in mutual assistance on complex experiments. I had the opportunity to follow Dr. Ferreira's methodological rigor in conducting critical research on the pathogenesis and diagnosis of viral diseases in cattle, with a specific focus on Bovine Herpesvirus type 1 (BoHV-1). Her ability to apply advanced techniques, such as cell culture and molecular biology analyses for the detection of viral DNA in biological fluids, provided her research with a technical depth that distinguishes her in the field of veterinary virology.

Dr. Ferreira's specialization transcends academic merit, possessing immediate practical value for the sustainability of livestock production systems and animal health defense. Her work in identifying infection markers and analyzing viral shedding in dairy herds is a cornerstone for the development of management protocols that drastically reduce production losses. In a global context where livestock efficiency is intrinsically linked to food security, Dr. Ferreira's contributions prove to be of national importance. This is evidenced by her role as a Federal Agricultural Health Inspector, in which she applies this scientific knowledge to the inspection of slaughterhouses and meatpacking plants and the conduct of international audits, ensuring that products of animal origin meet strict export requirements, including those for the United States market.

Dr. Ferreira has proven to be an exceptionally well-positioned professional to advance the state of the art in her field. Her career combines a solid scientific foundation with vast practical experience in product inspection and zoonosis control. A milestone of her professional recognition was her selection for the Doctorate Exchange Program at the University of Minnesota. This experience in the United States not only attests to her ability to operate in world-class research centers but also demonstrates that her technical profile is validated by international scientific standards, enabling her to work in the development of veterinary products and the study of infectious agents on a global scale.

Throughout our time working together, I have observed that her leadership manifests concretely in the management of multidisciplinary teams. As a Federal Agricultural Health Inspector, she coordinates inspection assistants and veterinarians, maintaining methodological rigor and sanitary compliance in highly complex environments. Her ability to organize data collection and maintain discipline in audit procedures is what ensures the viability of large-scale animal defense projects. Her scientific output, which includes the

José de Oliveira Pinto

publication of the book "Veterinary Microbiology: Practices", is the direct result of this ability to translate complex science into actionable guidelines for the productive sector.

In view of the foregoing, I express my full support for Dr. Hanna Carolina Campos Ferreira. I am convinced that her technical maturity, combined with her experience in international audits and her focus on preventive methods against animal pathologies, qualifies her as an invaluable professional for the advancement of veterinary medicine and food safety in any jurisdiction that prioritizes scientific excellence and the integrity of the agricultural system.

Sincerely,

José de Oliveira Pinto
Veterinarian, Doctorate in Veterinary Medicine
Former Manager of the Large Animal Clinic and Surgery Sector of Department of Veterinary Medicine
Federal University of Viçosa (UFV)

José de Oliveira Pinto

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 23, 2026.

30 de março de 2026

À Autoridade Competente.

Eu, José de Oliveira Pinto, escrevo esta carta em apoio à Hanna Carolina Campos Ferreira, fundamentando meu depoimento com base em colaborações técnica e acadêmica de longa data na Universidade Federal de Viçosa (UFV). Minha perspectiva sobre as competências da Dra. Ferreira advém de minha trajetória de mais de vinte e oito anos como Técnico de Nível Superior e Gerente da Clínica e Cirurgia de Grandes Animais no Departamento de Medicina Veterinária da UFV. Detenho os títulos de mestre e doutor em Medicina Veterinária e, ao longo de minha carreira, fui homenageado em diversas ocasiões pelo reconhecimento à minha gestão técnica e clínica no setor de grandes animais.

Conheci a Dra. Ferreira durante sua especialização em Clínica e Cirurgia de Grandes Animais, período em que supervisionei diretamente sua atuação em procedimentos cirúrgicos e em atendimentos hospitalares e de campo. Posteriormente, nossa colaboração se aprofundou durante o doutorado, em que atuamos em regime de auxílio mútuo em experimentos complexos. Tive a oportunidade de acompanhar o rigor metodológico da Dra. Ferreira na condução de pesquisas críticas sobre a patogenia e o diagnóstico de doenças virais em bovinos, com foco específico no Herpesvírus Bovino tipo 1 (BoHV-1). Sua habilidade em aplicar técnicas avançadas, como o cultivo celular e análises de biologia molecular para detecção de DNA viral em fluidos biológicos, conferiu à sua pesquisa uma profundidade técnica que a distingue no campo da virologia veterinária.

A especialização da Dra. Ferreira transcende o mérito acadêmico, possuindo valor prático imediato para a sustentabilidade dos sistemas de produção pecuária e para a defesa sanitária animal. Seu trabalho na identificação de marcadores de infecção e na análise da excreção viral em rebanhos leiteiros é um pilar para o desenvolvimento de protocolos de manejo que reduzem drasticamente as perdas produtivas. Em um contexto global, onde a eficiência da pecuária está intrinsecamente ligada à segurança alimentar, as contribuições da Dra. Ferreira mostram-se de importância nacional. Isso é evidenciado por sua atuação como Auditora Fiscal Federal Agropecuária, na qual aplica esse conhecimento científico na fiscalização de abatedouros frigoríficos e na condução de auditorias internacionais, garantindo que os produtos de origem animal atendam aos rigorosos requisitos de exportação, inclusive para o mercado dos Estados Unidos.

A Dra. Ferreira demonstrou ser uma profissional excepcionalmente bem posicionada para avançar o estado da arte em sua área. Sua trajetória combina uma sólida base científica com vasta experiência prática na inspeção de produtos e no controle de zoonoses. Um marco de seu reconhecimento profissional foi sua seleção para o Programa de Doutorado Sanduíche na University of Minnesota. Esta experiência nos Estados Unidos não apenas atesta sua capacidade de operar em centros de pesquisa de excelência mundial, mas também demonstra que seu perfil técnico é validado por padrões científicos internacionais, capacitando-a a atuar no desenvolvimento de produtos de uso veterinário e no estudo de agentes infecciosos em escala global.

Em nossa convivência, observei que sua liderança se manifesta de forma concreta na gestão de equipes multidisciplinares. Como Auditora Fiscal Federal Agropecuária, ela coordena auxiliares de inspeção e médicos veterinários, mantendo o rigor metodológico e a conformidade sanitária em ambientes de alta complexidade. Sua capacidade de organizar coletas de dados e de manter a disciplina nos procedimentos de auditoria é o que garante a viabilidade de projetos de defesa animal em larga escala. Sua produção científica, que inclui

José de Oliveira Pinto

a publicação do livro "Microbiologia Veterinária: Práticas", é o resultado direto dessa habilidade de traduzir ciência complexa em diretrizes aplicáveis ao setor produtivo.

Diante do exposto, manifesto meu pleno apoio à Dra. Hanna Carolina Campos Ferreira. Estou convicto de que sua maturidade técnica, aliada à sua experiência em auditorias internacionais e ao foco em métodos preventivos contra patologias animais, a qualifica como uma profissional de valor inestimável para o avanço da medicina veterinária e da segurança alimentar em qualquer jurisdição que priorize a excelência científica e a integridade do sistema agropecuário.

Atenciosamente,

José de Oliveira Pinto
Médico Veterinário, Doutor em Medicina Veterinária
Ex-Gerente da Clínica e Cirurgia de Grandes Animais do Departamento de Medicina Veterinária
Universidade Federal de Viçosa (UFV)

José de Oliveira Pinto

José de Oliveira Pinto

Since 1995, works as a Veterinarian in the Clinic and Surgery sector of the Veterinary Department at the Federal University of Viçosa. Has experience in Large Animal Internal Medicine, focusing on the following topics: dairy cattle: main diseases, management, vaccines, endo- and ectoparasite control, hoof disorders, mastitis control, metabolic diseases, mineralization, artificial insemination, and calf rearing. In equids: locomotor system, colic treatment, nutrition, digestive system. Master's degree on gastric ulcer in ponies in 2007. Has 20 years of experience in the commercialization of agricultural and livestock products.

Identification
Name
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Name in bibliographic citations
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Professional Address
Federal University of Viçosa, Center for Biological and Health Sciences, Veterinary Department.
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UFV Campus
36570000 - Viçosa, Minas Gerais - Brazil
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Homepage URL: www.ufv.br/dvt

Academic background/degree

2012 - 2016
Doctorate Degree in Animal Science.
Federal University of Viçosa, UFV, Brazil.
Title: Biomolecular kinetics of growth factors and collagen involved in the healing of skin treated with platelet-rich, leukocyte-poor plasma: an experimental model in equids. 2016. Doctoral Dissertation (Doctorate degree in Animal Science) - Federal University of Viçosa. Advisor: Maria Verônica de Souza.

2006-2007
Master's Degree in Veterinary Medicine.
Federal University of Viçosa, UFV, Brazil.
Title: Influence of monophenylbutazone associated or not with omeprazole on the digestive and renal systems in healthy ponies, Year of Completion: 2007.
Advisor: Maria Verônica de Souza.

1996 - 1997
Residency in Veterinary Clinic and Surgery. (Workload: 465 hours).
Federal University of Viçosa, UFV, Brazil.
Title: Use of the tiletamine-zolazepam combination in goats.
Advisor: Luiz Gonzaga Pompermeyer.
1986 - 1991
Bachelor's Degree in Veterinary Medicine.
Federal University of Viçosa, UFV, Brazil.

Continuing Education
2005 - 2005
Physical and Chemical Restraint of Wild Animals. (Workload: 6 hours).
Federal University of Viçosa, UFV, Brazil.
1990 - 1990
University Outreach in the GILBERTO MELO PROGRAM. (Workload: 50 hours).
Federal University of Viçosa, UFV, Brazil.
1990 - 1990
University Outreach in the GILBERTO MELO PROGRAM. (Workload: 62 hours).
Federal University of Viçosa, UFV, Brazil.
1990 - 1990
University Outreach in the GILBERTO MELO PROGRAM. (Workload: 87 hours).
Federal University of Viçosa, UFV, Brazil.
1990 - 1990
University Outreach in the GILBERTO MELO PROGRAM. (Workload: 52 hours).
Federal University of Viçosa, UFV, Brazil.
1990 - 1990
University Outreach in the GILBERTO MELO PROGRAM. (Workload: 69 hours).
Federal University of Viçosa, UFV, Brazil.
1990 - 1990
University Outreach in the GILBERTO MELO PROGRAM. (Workload: 79 hours).
Federal University of Viçosa, UFV, Brazil.
1990 - 1990
University Outreach in the GILBERTO MELO PROGRAM. (Workload: 88 hours).
Federal University of Viçosa, UFV, Brazil.
1988-1990
University Outreach in the GILBERTO MELO PROGRAM.
Federal University of Viçosa, UFV, Brazil.
1989 - 1989
University Outreach in the GILBERTO MELO PROGRAM. (Workload: 52 hours).
Federal University of Viçosa, UFV, Brazil.

Professional Experience

Federal University of Viçosa, UFV, Brazil.
Institutional Affiliation

1995 - Present
Affiliation: Public Servant, Job Title: Higher-Level Technical Staff Member, Workload: 40 hours

Activities

1/1995 - Present
Specialized technical services, Center for Biological and Health Sciences, Veterinary Department.

Service provided
Higher-Level Technical Staff Member - Large Animal Veterinary Clinician.

Viçosa City Hall.
Institutional Affiliation

1991-1994
Affiliation: Public Servant, Job Title: Veterinarian, Workload: 40 hours, Work Schedule: Full-time.
Other Information
Clinic, Surgery, and Reproductive management of dairy cattle on farms in the city of Porto Firme, Viçosa-Minas Gerais area.

Institutional affiliation

1991 - 1994
Affiliation: Public Servant, Job Title: Veterinarian, Workload: 40 hours, Work Schedule: Full-time.

Activities

1/1991 - 12/1994
Specialized technical services.

Service provided
Clinic, Surgery, and Reproductive management of dairy cattle on farms in Porto Firme - Minas Gerais.

Areas of expertise
1.
Major field: Agricultural Sciences / Field: Veterinary Medicine / Subfield: Animal Clinic and Surgery / Specialty: Veterinary Clinic.

Languages
English
Understands Reasonably, Speaks Little, Reads Well, Writes Little.
Portuguese
Understands Well, Speaks Well, Reads Well, Writes Well.

Production

Bibliographic production

Full articles published in journals

1.
RIBEIRO FILHO, José Dantas ; Cláudio Luis Nina Gomes ; Brunna Patrícia Almeida da Fonseca ; PINTO, José de Oliveira . ENTERAL FLUID THERAPY IN RUMINANTS AND EQUIDS. EFFICIENCY AT A LOWER COST. CFMV Journal (Brasília), v. 15, pp. 63-67, 2010.

2.
PINTO, José de Oliveira; SOUZA, Maria Verônica de ; Costa, Paulo Renato dos Santos; Ribeiro Júnior, José Ivo ; MAIA, Leandro ; Monteiro, Gabriel Augusto . Influence of monophenylbutazone associated or not with omeprazole on the digestive and renal systems of healthy ponies. Rural Science (UFSM. Printed) JCR , v. 39, pp. 96-103, 2009.

3.
PINTO, José de Oliveira; SOUZA, Maria Verônica ; COSTA, P. R. S. ; RIBEIRO JUNIOR, J. I. ; MOREIRA, J. C. L. . Exuberant Granulation Tissue with Presence of Candida sp. in the Stomach of Ponies Treated with Omeprazole. Veterinary and Animal Science (UNESP), v. 15, pp. 449-455, 2008.

4.
SOUZA, M.V.; Silva, M.B. ; PINTO, José de Oliveira ; LIMA, M. B. S. ; Crepaldi, J ; LOPES, G. F. M. ; SANTOS, H. B. ; RIBEIRO, R. I. M. A. ; THOMÉ, R.G. . Immunohistochemical Expression of Collagens in the Skin of Horses Treated with Leukocyte-Poor Platelet-rich Plasma.. BioMed Research International JCR , v. 2015, pp. 1-12, 2015.

5.
Assis, M A ; SILVA, T. O. ; Silva, M.B. ; Souza, J E ; PINTO, José de Oliveira ; Samuel Pereira Simonato ; SOUZA, M.V. . Evaluation of equine hoof balance in animals treated at the veterinary hospital. Brazilian Journal of Equine Medicine, v. 59, pp. 24-31, 2015.

6.
SOUZA, M.V.; SILVA, T. O. ; FONSECA, B. P. A. ; Favarato, L.S.C. ; Zandim, Bruna M. ; MAIA, Leandro ; Pinto, José de O. ; SILVA, M. B. ; SANTOS, N. T. . Ultrasonographic monitoring of unexercised equine tendons treated with platelet-rich plasma gel. Classified as B5 - Qualis 2012.. Regional Council of Veterinary Medicine, v. 1, pp. 65-67, 2015.

7.

Souza, J E ; Silva, M.B. ; SILVA, T. O. ; Assis, M A ; PINTO, José de Oliveira ; PAES, F.V. ; SOUZA, M.V. . Monitoring the functioning of the equine digestive system: physical examination through auscultation.. Brazilian Journal of Equine Medicine, v. 1, pp. 26-31, 2015.

8.
SOUZA, MARIA; PINTO, JOSÉ ; VARASCHIN, MARY ; MOREIRA, JOSÉ ; SILVA, THAYNE ; COELHO, POLYANA . Macroscopic and histomorphometric evaluation of different healing stages of skin wounds in horses treated with leukocyte-poor platelet-rich plasma. ACTA VETERINARIA BRASILICA (UFERSA), v. 11, pp. 111-123, 2017.

Published book chapters

1.
SOUZA, Maria Verônica ; PINTO, José de Oliveira . Association between Nonsteroidal Anti-inflammatory Drugs and Gastric Ulceration in Horses and Ponies. Peptic Ulcer Disease. Rijeka: Intech Open Access Publisher, 2011, v. , pp. -.

Abstracts published in conference proceedings

1.
Pablo Costa Magalhães ; SOUZA, Maria Verônica de ; Bruna Mota Zandim ; Luiza Neme Frassy ; PINTO, José de Oliveira . Otitis externa in equids. In: 37th CONBRAVET, 2010, Rio de Janeiro. Food and Bioenergy for Brazil and the World, 2010.

2.
FREITAS, N. P. ; SOUZA, Maria Verônica de ; POMPERMEYER, L. G. ; Ana Cristina Tolomelli da Silva Paes ; MAIA, Leandro ; PINTO, José de Oliveira . Nasal pythiosis in an equid: a case report. In: 11th Annual ABRAVEQ Conference, 2010, SÃO PAULO. ABRAVEQ BRAZILIAN ASSOCIATION OF EQUINE VETERINARIANS, 2010.

3.
Gertrud Elisa Campos Edler ; SOUZA, Maria Verônica de ; MENESES, R. M. ; PINTO, José de Oliveira ; Samuel Rodrigues Alves ; Homero Leite Martins ; Natália Tavares Fregapani . PERIOSTITIS AND OSTEOARTHRITIS IN A MULE: A CASE REPORT. In: RESEARCH SYMPOSIUM IN VETERINARY MEDICINE 2010, 2010, Viçosa. RESEARCH SYMPOSIUM IN VETERINARY MEDICINE 2010, 2010.

4.
Gertrud Elisa Campos Edler ; SOUZA, Maria Verônica de ; PINTO, José de Oliveira ; MENESES, R. M. ; Homero Leite Martins ; Samuel Rodrigues Alves . NECK ABSCESS IN A MULE: A CASE REPORT. In: RESEARCH SYMPOSIUM IN VETERINARY MEDICINE 2010, 2010, Viçosa. RESEARCH SYMPOSIUM IN VETERINARY MEDICINE 2010, 2010.

5.
BORSATTI, P. A. ; LAGO, E. P. ; PINTO, José de Oliveira ; MAIA, Leandro ; MENESES, R. M. ; FREITAS, N. P. ; FAUSTO, G. C. . Abomasal Impaction: A Case Report. In: 18TH UNDERGRADUATE RESEARCH SYMPOSIUM, 2008, Viçosa. Abomasal Impaction: A Case Report, 2008.

6.
FREITAS, N. P. ; BORSATTI, P. A. ; FAUSTO, G. C. ; MAIA, Leandro ; MENESES, R. M. ; PINTO, José de Oliveira ; GALVAO, S. R. . Corneal Ulcer in Cattle: A Case Report. In: 18TH UNDERGRADUATE RESEARCH SYMPOSIUM, 2008, Viçosa. Corneal Ulcer in Cattle: A Case Report, 2008.

7.
FREITAS, N. P. ; MAIA, Leandro ; MENESES, R. M. ; BORSATTI, P. A. ; FAUSTO, G. C. ; POMPERMEYER, L. G. ; PINTO, José de Oliveira . Funiculitis in an Equid: Report of Two Cases. In: 18TH UNDERGRADUATE RESEARCH SYMPOSIUM, 2008, Viçosa. Funiculitis in an Equid: Report of Two Cases, 2008.

8.
FAUSTO, G. C. ; FREITAS, N. P. ; MAIA, Leandro ; BORSATTI, P. A. ; PINTO, José de Oliveira ; MENESES, R. M. ; RIBEIRO FILHO, José Dantas . Ischemia-Reperfusion Injury in the Small Colon of an Equid: A Case Report. In: 18TH - SIMPÓS, 2008, Viçosa. Ischemia-Reperfusion Injury in the Small Colon of an Equid: A Case Report, 2008.

9.
MAIA, Leandro ; RIBEIRO FILHO, José Dantas ; BORSATTI, P. A. ; FREITAS, N. P. ; FAUSTO, G. C. ; PINTO, José de Oliveira ; MENESES, R. M. . Bovine Viral Diarrhea (BVD) and Mucosal Disease (MD) Complex: A Case Report. In: Bovine Viral Diarrhea (BVD) and Mucosal Disease (MD) Complex: A Case Report, 2008, Viçosa. Bovine Viral Diarrhea (BVD) and Mucosal Disease (MD) Complex: A Report, 2008.

10.
PINTO, José de Oliveira; SOUZA, Maria Verônica ; MAIA, Leandro ; MONTEIRO, G. A. . Evaluation of the efficacy of omeprazole in healing gastric ulcers in ponies. In: 16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 2007, Viçosa. Evaluation of the efficacy of omeprazole in healing gastric ulcers in ponies, 2007..

11.
PINTO, José de Oliveira; SOUZA, Maria Verônica ; MAIA, Leandro ; MONTEIRO, G. A. ; CRUZ, A. L. . Aural papilloma in equids: a case report. In: 16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 2007, Viçosa. Aural papilloma in equids: a case report, 2007.

12.
COSTA, A. C. B. ; CRUZ, A. L. ; PINTO, José de Oliveira ; MAIA, Leandro ; RIBEIRO FILHO, José Dantas . Furious Bovine Rabies: A Case Report. In: 16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 2007, Viçosa. Furious Bovine Rabies: A Case Report, 2007.

13.
ALMEIDA, M. M. ; SOUZA, Maria Verônica ; SANTOS, F. C. O. ; PINTO, José de Oliveira ; PESSIN, A. E. . Guttural Pouch Empyema: A Case Report. In: 16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 2007, Viçosa. Guttural Pouch Empyema: A Case Report, 2007.

14.
SANTOS, F. C. O. ; SOUZA, Maria Verônica ; ALMEIDA, M. M. ; PINTO, José de Oliveira ; PESSIN, A. E. . Suspensory Ligament Desmitis. In: 16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 2007, Viçosa. Suspensory Ligament Desmitis, 2007.

15.
CRUZ, A. L. ; COSTA, A. C. B. ; MAIA, Leandro ; PINTO, José de Oliveira ; RIBEIRO FILHO, José Dantas . Keratinizing Squamous Cell Carcinoma in Cattle. In: 16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 2007, Viçosa. Keratinizing Squamous Cell Carcinoma in Cattle, 2007.

16.
MAIA, S. S. ; SOUZA, Maria Verônica ; FARIAS, S. K. ; PINTO, José de Oliveira ; MAIA, Leandro . SESAMOIDITIS IN EQUIDS UNDERGOING GAIT TRAINING: A CASE REPORT. In: 7th SIMPÓS, 2007, Viçosa. SESAMOIDITIS IN EQUIDS UNDERGOING GAIT TRAINING: A CASE REPORT, 2007.

17.
MAIA, Leandro ; SOUZA, Maria Verônica ; PINTO, José de Oliveira ; COSTA, P. R. S. ; MONTEIRO, G. A. ; POMPERMEYER, L. G. . USE OF XYLAZINE AND GUAIFENESIN (GG) IN THE GASTRIC ENDOSCOPIC EVALUATION OF RECUMBENT PONIES. In: 7th SIMPÓS, 2007, Viçosa. GUAIFENESIN (GG) IN THE GASTRIC ENDOSCOPIC EVALUATION OF RECUMBENT PONIES, 2007.

18.
FARIAS, S. K. ; SOUZA, Maria Verônica de ; MAIA, S. S. ; PINTO, José de Oliveira . FRACTURE OF THE DISTAL THIRD OF THE FOURTH METACARPAL BONE IN AN EQUID: A CASE REPORT. In: 7th SIMPÓS, 2007, Viçosa. FRACTURE OF THE DISTAL THIRD OF THE FOURTH METACARPAL BONE IN AN EQUID: A CASE REPORT, 2007.

19.
MAIA, Leandro ; LOPES, Marco Aurélio Ferreira ; BELÉM, Pacífico Antônio Diniz ; RIBEIRO FILHO, José Dantas ; SOUZA, Maria Verônica de ; PINTO, José de Oliveira ; BEVILACQUA, Paula Dias . Prospective Study of Cases Treated at the Large Animal Clinic and Surgery Sector of the Veterinary Hospital of the DVT-UFV.. In: 14th Undergraduate Research Symposium, 4th Graduate Scientific Exhibition, and 2nd University Extension Symposium, 2004, Viçosa - MG. Proceedings of the 14th Undergraduate Research Symposium, 4th Graduate Scientific Exhibition, and 2nd University Extension Symposium. Viçosa - MG: UFV Publisher, 2004. v. 14th.

Articles accepted for publication

1.
Bruna Mota Zandim ; SOUZA, Maria Verônica de ; Pablo Costa Magalhães ; Laércio A. Benjamin ; MAIA, Leandro ; Aécio C. de Oliveira ; Pinto, José de Oliveira ; RIBEIRO JUNIOR, J. I. . Platelet activation: ultrastructure and morphometry. Brazilian Veterinary Research (Printed) JCR , 2011.

Scholarly Presentations
Gertrud Elisa Campos Edler ; SOUZA, Maria Verônica de ; PINTO, José de Oliveira ; MENESES, R. M. ; Homero Leite Martins ; Samuel Rodrigues Alves . Neck abscess in a mule: a case report. 2010. (Presentation/Symposium).

2.
Gertrud Elisa Campos Edler ; SOUZA, Maria Verônica de ; MENESES, R. M. ; PINTO, José de Oliveira ; Samuel Rodrigues Alves ; Homero Leite Martins ; Natália Tavares Fregapani . RESEARCH SYMPOSIUM IN VETERINARY MEDICINE 2010 AND 3rd GRADUATE WEEK IN VETERINARY MEDICINE UFV. 2010. (Presentation/Symposium).

3.
Samuel Rodrigues Alves ; SOUZA, Maria Verônica de ; Gertrud Elisa Campos Edler ; MENESES, R. M. ; Homero Leite Martins ; MAYER, D. M. ; PINTO, José de Oliveira ; Natália Tavares Fregapani . ACADEMIC INTEGRATION SYMPOSIUM, SIA. 2010. (Presentation/Symposium).

4.
ALMEIDA, M. M. ; SOUZA, Maria Verônica de ; SANTOS, F. C. O. ; PINTO, José de Oliveira ; PESSIN, A. E. . Guttural pouch EMPYEMA: a case report. 2007. (Presentation/Symposium).

5.
COSTA, A. C. B. ; CRUZ, A. L. ; PINTO, José de Oliveira ; Monteiro, Gabriel Augusto ; SOUZA, Maria Verônica de ; SANTOS, F. C. O. ; ALMEIDA, M. M. ; PESSIN, A. E. . 16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 6th SIMPÓS-Graduate Scientific Exhibition, and 4th University Extension Symposium. 2007. (Presentation/Symposium).

Other types of technical production

1.
PINTO, José de Oliveira. Main Diseases of Dairy Cattle; Administration of Medications in Animals. 2007. (Short-term course taught/Extension).

2.
PINTO, José de Oliveira; SANTOS, B. M. . Practical Classes for subject VET 347 - Veterinary Hygiene. 2007. (Short-term course taught/Other).

3.
PINTO, José de Oliveira; SOUZA, Maria Verônica . Practical Classes for subject 171 - Digestive and Locomotor Systems of Equids. 2006. (Short-term course taught/Other).

4.
PINTO, José de Oliveira. Practical Class for Subject VET 347 - Veterinary Hygiene. 2005. (Short-term course taught/Other).

5.
DETMAN ; PINTO, José de Oliveira . Digestion and Absorption in Ruminants. 2005. (Short-term course taught/Other).

6.
PINTO, José de Oliveira. BOVINE CLINIC. 2005. (Short-term course taught /Extension).

7.
PINTO, José de Oliveira. Practical Classes for VET 347 - VETERINARY HYGIENE. 2005. (Short-term course taught/Other).

8.
SOUZA, Maria Verônica ; BELÉM, Pacífico Antônio Diniz ; VIANA, J. A. ; PINTO, José de Oliveira . Practical Classes for subject VET 171 - Veterinary Semiology. 2005. (Short-term course taught/Other).

9.
PINTO, José de Oliveira. 1st Milk Technological Clinic. 2004. (Short-term course taught/Extension).

10.
PINTO, José de Oliveira. 2nd Milk Technological Clinic. 2004. (Short-term course taught /Extension).

11.
PINTO, José de Oliveira. Practical Classes for subject VET 347 - Veterinary Hygiene. 2004.

12.
PINTO, José de Oliveira. 3rd Technological Clinic. 2003. (Short-term course taught/Other).

13.
PINTO, José de Oliveira. 3rd Technological Clinic. 2002. (Short-term course taught/Other).

14.
PINTO, José de Oliveira. 3rd Technological Clinic. 2002. (Short-term course taught/Other).

15.
PINTO, José de Oliveira. Administration of Medications and Animal Restraint. 2002. (Short-term course taught/Other).

Other works

1.
PINTO, José de Oliveira. Control of Endo- and Ectoparasites and Transmitted Diseases. 1999. (Lecture).

Examining Committees

Participation in examination committees
Capstone projects

1.

RIBEIRO FILHO, José Dantas; Cláudio Luis Nina Gomes; PINTO, José de Oliveira. Participation in the examining committee of Camila Oliveira Silveira. Effects of electrolytic solutions containing different sources of energy and calcium in equids with mild dehydration. 2010. Capstone Project (Capstone Project in Veterinary Medicine and Surgery) - Federal University of Viçosa.

2.
LAGO, E. P.; BELÉM, Pacífico Antônio; PINTO, José de Oliveira. Participation in the examining committee of Hanna Carolina C. Ferreira. Aspects related to the behavior of dairy cows, with an emphasis on the free-stall housing system. 2010. Capstone Project (Capstone Project in Veterinary Medicine and Surgery) - Federal University of Viçosa.

Events

Participation in events, conferences, exhibitions, and fairs

1.
EqVet Equine Clinic and Surgery Study Group - UFV. NONSTREOIDAL ANTI-INFLAMMATORY DRUGS. 2011. (Seminar).

2.
37th BRAZILIAN VETERINARY CONGRESS CONBRAVET. Otitis Externa in Equids. 2010. (Congress).

3.
Investigation of the vesicular disease outbreak at the UFV Veterinary Hospital in 2010. 2010. (Seminar).

4.
RESEARCH SYMPOSIUM IN VETERINARY MEDICINE 2010 AND 3rd GRADUATE WEEK IN VETERINARY MEDICINE UFV. ULTRASTRUCTURE OF PLATELETS ACTIVATED WITH BOVINE THROMBIN. 2010. (Symposium).

5.
11TH ANNUAL ABRAVEQ CONFERENCE. Clinical and ultrasonographic evaluation of equine tendons treated with platelet-rich plasma after surgically induced injury. 2010. (Congress).

6.

CETEB SCHOOL FOR YOUTH AND ADULTS. PROJECT MANAGEMENT IN THE PUBLIC SECTOR. 2009. (Other).

7.
Equine Lameness Course. 2008. (Workshop).

8.
4TH SIMFOR. 2008. (Symposium).

9.
6TH SIMCORTE. 2008. (Symposium).

10.
1ST MINAS GERAIS EQUID CULTURE SYMPOSIUM. 2007. (Symposium).

11.
16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 6TH SIMPÓS-Graduate Scientific Exhibition, and 4th University Extension Symposium. Suspensory ligament desmitis in an equid: a case report. 2007. (Symposium).

12.
16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 6TH SIMPÓS-Graduate Scientific Exhibition, and 4th University Extension Symposium. Suspensory ligament desmitis in an equid: a case report. 2007. (Symposium).

13.
16TH UNDERGRADUATE RESEARCH SYMPOSIUM, 6TH SIMPÓS-GRADUATE SCIENTIFIC EXHIBITION, AND 4TH UNIVERSITY EXTENSION SYMPOSIUM. Uterine Prolapse in Goats - Report of Two Clinical Cases. 2007. (Symposium).

14.
3RD SYMPOSIUM ON STRATEGIC PASTURE MANAGEMENT. 2006. (Symposium).

15.
Equine Dentistry. 2006. (Workshop).

16.
5TH SIMCORTE. 2006. (Symposium).

17.
4th Lecture Cycle in Veterinary Medicine. 2005. (Other).

18.
Practical Short Course on Large Animal Restraint. 2005. (Other).

19.
Topics in Experimental Statistics. 2005. (Workshop).

20.
Merial Technological Dissemination Course. 2004. (Meeting).

21.
2nd Symposium on Strategic Pasture Management. 2004. (Symposium)).

22.
4TH SIMCORTE - Beef Cattle Production Symposium. 2004. (Symposium).

23.
1st Lecture Cycle on Assisted Reproduction in Goats. 2002. (Other).

24.
3RD SIMCORTE - Beef Cattle Production Symposium. 2002. (Symposium).

25.
Symposium on Strategic Pasture Management. 2002. (Symposium).

26.
2ND SIMCORTE - Beef Cattle Production Symposium. 2001. (Symposium).

27.

Course on Mechanical Milking in the Third Millennium. 2000. (Other).

28.
Technical Lecture on Dairy Cattle: Feeding super cows and preventing nutritionally related problems. 2000. (Other).

29.
Course on Equine Exercise Physiology. 1999. (Other).

30.
1ST SIMCORTE - Beef Cattle Production Symposium. 1999. (Symposium).

31.
Course on Hoof Problems in Cattle. 1998. (Other).

32.
Course on Mammary Gland Health, Pathophysiology, Clinic-Pathology, Mastitis Control, and Milk Production Systems in the USA. 1998. (Workshop).

33.
Course on Milking Technology. 1998. (Other).

34.
1ST SIMLEITE - Symposium on Milk Production in Brazil and Short Course on Pasture Establishment and Management. 1998. (Symposium).

35.
3rd International Symposium on Intensive Milk Production. 1997. (Symposium).

36.
Seminar on Beef Cattle Crossbreeding. 1997. (Seminar).

37.
Training and Professional Development. 1996. (Other).

38.
Feedlot Management Course. 1995. (Other).

39.
Forage Crop Science Course. 1995. (Other).

40.
10th Veterinary Medicine Studies Week - Rabbit Production. 11th Veterinary Medicine Studies Week 1989. (Other).

41.
10th Veterinary Medicine Studies Week. 1988. (Other).

42.
INTELECTOM - Business Training - Intellectual Development Methodology. 1987. (Other).

Other relevant information
English Courses: Number One - 1986: Dynamic Course in Basic English. Belo Horizonte, June 30, 1986. ICBEU - 2002: 130 hours - Michigan English Course. Viçosa, June 06, 2002. Information Technology Courses: TD Informática - 1995: Introduction to Microcomputing and Windows - 20 hours. December 11 to 22, 1995. TD Informática - 1996: Introduction to Word for Windows - 20 hours. January 02 to 15, 1996. TD Informática - 1996: Excel - 24 hours. August 28 to October 21, 1996. HOMENET - 1998: Internet - 10 hours. July 06 to 09, 1998. UFV - Human Resources Directorate - 1999: Basic PowerPoint Course - 16 hours. April 05 to 14, 1999. (08/11/2005)

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



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Desde de 1995, é Médico Veterinário no setor de Clínica e Cirurgia do Departamento de Veterinária da Universidade Federal de Viçosa. Tem experiência na área de Clínica Médica Veterinária, atuando nos seguintes temas: gado leiteiro: principais doenças, manejo, vacinas, controle de endo e ectoparasitas, afecções de casco, controle de mastite, doenças metabólicas, mineralização, inseminação artificial e criação de bezerras. Em equinos: sistema locomotor, tratamento de cólica, nutrição, sistema digestório. Mestrado com úlcera gástrica em pôneis 2007. Experiência de 20 anos em comercialização de produtos agropecuários.

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Formação acadêmica/titulação

2012 - 2016
Doutorado em Medicina Veterinária.
Universidade Federal de Viçosa, UFV, Brasil.
Título: Cinética biomolecular de fatores de crescimento e colágeno envolvidos na cicatrização de pele tratada com plasma rico em plaquetas e pobre em leucócitos: modelo experimental em equinos. 2016. Tese (Doutorado em Medicina Veterinária) - Universidade Federal de Viçosa, . Orientador: Maria Verônica de Souza.

2006 - 2007
Mestrado em Medicina Veterinária.
Universidade Federal de Viçosa, UFV, Brasil.
Título: Influência da monofenilbutazona associada ou não ao omeprazol sobre o sistema digestório e renal em pôneis hígidos, Ano de Obtenção: 2007.
Orientador: Maria Verônica de Souza.

1996 - 1997
Especialização em Clínica e Cirurgia Veterinária. (Carga Horária: 465h).
Universidade Federal de Viçosa, UFV, Brasil.
Título: Uso da associção tiletemina-zolazepan em caprinos.
Orientador: Luiz Gonzaga Pompermeyer.
1986 - 1991
Graduação em Medicina Veterinária.
Universidade Federal de Viçosa, UFV, Brasil.

Formação Complementar
2005 - 2005
Contenção Físico-Química de Animais Silvestres. (Carga horária: 6h).
Universidade Federal de Viçosa, UFV, Brasil.
1990 - 1990
Extensão universitária em PROGRAMA GILBERTO MELO. (Carga horária: 50h).
Universidade Federal de Viçosa, UFV, Brasil.
1990 - 1990
Extensão universitária em PROGRAMA GILBERTO MELO. (Carga horária: 62h).
Universidade Federal de Viçosa, UFV, Brasil.
1990 - 1990
Extensão universitária em PROGRAMA GILBERTO MELO. (Carga horária: 87h).
Universidade Federal de Viçosa, UFV, Brasil.
1990 - 1990
Extensão universitária em PROGRAMA GILBERTO MELO. (Carga horária: 52h).
Universidade Federal de Viçosa, UFV, Brasil.
1990 - 1990
Extensão universitária em PROGRAMA GILBERTO MELO. (Carga horária: 69h).
Universidade Federal de Viçosa, UFV, Brasil.
1990 - 1990
Extensão universitária em PROGRAMA GILBERTO MELO. (Carga horária: 79h).
Universidade Federal de Viçosa, UFV, Brasil.
1990 - 1990
Extensão universitária em PROGRAMA GILBERTO MELO. (Carga horária: 88h).
Universidade Federal de Viçosa, UFV, Brasil.
1988 - 1990
Extensão universitária em PROGRAMA GILBERTO MELO.
Universidade Federal de Viçosa, UFV, Brasil.
1989 - 1989
Extensão universitária em PROGRAMA GILBERTO MELO. (Carga horária: 52h).
Universidade Federal de Viçosa, UFV, Brasil.

Atuação Profissional

Universidade Federal de Viçosa, UFV, Brasil.
Vínculo institucional

1995 - Atual
Vínculo: Servidor Público, Enquadramento Funcional: Técnico de Nível Superior, Carga horária: 40

Atividades

1/1995 - Atual
Serviços técnicos especializados , Centro de Ciências Biológicas e da Saúde, Departamento de Veterinária.

Serviço realizado
Técnico de Nível Superior - Clínico Veterinário de Grandes Animais.

Prefeitura Municipal de Viçosa.
Vínculo institucional

1991 - 1994
Vínculo: Servidor Público, Enquadramento Funcional: Medico Veterinário, Carga horária: 40, Regime: Dedicação exclusiva.
Outras informações
Clínica, Cirurgia e Manejo reprodutivo de bovinos leiteiros fazendas do município de Porto Firme, região de Viçosa-MG.

Vínculo institucional

1991 - 1994
Vínculo: Servidor Público, Enquadramento Funcional: Médico Veterinário, Carga horária: 40, Regime: Dedicação exclusiva.

Atividades

1/1991 - 12/1994
Serviços técnicos especializados .

Serviço realizado
Clínica, Cirurgia e Manejo reprodutivo de bovinos de leite em fazendas de Porto Firme - MG.

Áreas de atuação
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Grande área: Ciências Agrárias / Área: Medicina Veterinária / Subárea: Clínica e Cirurgia Animal/ Especialidade: Clínica Veterinária.

Idiomas
Inglês
Compreende Razoavelmente, Fala Pouco, Lê Bem, Escreve Pouco.
Português
Compreende Bem, Fala Bem, Lê Bem, Escreve Bem.

Produções

Produção bibliográfica

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FREITAS, N. P. ; MAIA, Leandro ; MENESES, R. M. ; BORSATTI, P. A. ; FAUSTO, G. C. ; POMPERMEYER, L. G. ; PINTO, José de Oliveira . Funiculite em Equino: Relato de dois Casos. In: XVIII SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, 2008, Viçosa. Funiculite em Equino: Relato de dois Casos, 2008.

8.
FAUSTO, G. C. ; FREITAS, N. P. ; MAIA, Leandro ; BORSATTI, P. A. ; PINTO, José de Oliveira ; MENESES, R. M. ; RIBEIRO FILHO, José Dantas . Lesão de Isquemia e Reperfusão em Cólon Menor de Eqüino: Relato de Caso. In: XVIII - SIMPÓS, 2008, Viçosa. Lesão de Isquemia e Reperfusão em Cólon Menor de Eqüino: Relato de Caso, 2008.

9.
MAIA, Leandro ; RIBEIRO FILHO, José Dantas ; BORSATTI, P. A. ; FREITAS, N. P. ; FAUSTO, G. C. ; PINTO, José de Oliveira ; MENESES, R. M. . Complexo Diarréia Viral Bovina (DVB) e Doença das Mucosas (DM): Relato de Caso. In: Complexo Diarréia Viral Bovina (DVB) e Doença das Mucosas (DM): Relato de Caso, 2008, Viçosa. Complexo Diarréia Viral Bovina (DVB) e Doença das Mucosas (DM): Relato, 2008.

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PINTO, José de Oliveira; SOUZA, Maria Verônica ; MAIA, Leandro ; MONTEIRO, G. A. ; CRUZ, A. L. . Papiloma auricular em eqüinos: relato de caso. In: XVI SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, 2007, Viçosa. Papiloma auricular em eqüinos: relato de caso, 2007.

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COSTA, A. C. B. ; CRUZ, A. L. ; PINTO, José de Oliveira ; MAIA, Leandro ; RIBEIRO FILHO, José Dantas . Raiva Furiosa Bovina: Relato de caso. In: XVI SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, 2007, Viçosa. Raiva Furiosa Bovina: Relato de caso, 2007.

13.
ALMEIDA, M. M. ; SOUZA, Maria Verônica ; SANTOS, F. C. O. ; PINTO, José de Oliveira ; PESSIN, A. E. . Empiema de Bolsa Gutural: Relato de Caso. In: XVI SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, 2007, Viçosa. Empiema de Bolsa Gutural: Relato de Caso, 2007.

14.
SANTOS, F. C. O. ; SOUZA, Maria Verônica ; ALMEIDA, M. M. ; PINTO, José de Oliveira ; PESSIN, A. E. . Desmite do Ligamento Suspensório. In: XVI SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, 2007, Viçosa. Desmite do Ligamento Suspensório, 2007.

15.
CRUZ, A. L. ; COSTA, A. C. B. ; MAIA, Leandro ; PINTO, José de Oliveira ; RIBEIRO FILHO, José Dantas . Carcinoma de Células Escamosas Queratinizantes em Bovinos. In: XVI SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, 2007, Viçosa. Carcinoma de Células Escamosas Queratinizantes em Bovinos, 2007.

16.
MAIA, S. S. ; SOUZA, Maria Verônica ; FARIAS, S. K. ; PINTO, José de Oliveira ; MAIA, Leandro . SESAMOIDITE EM EQUINOS SUBMETIDO A TREINAMENTO DE MARCHA: RELATO DE CASO. In: VII SIMPÓS, 2007, Viçosa. SESAMOIDITE EM EQUINOS SUBMETIDO A TREINAMENTO DE MARCHA: RELATO DE CASO, 2007.

17.
MAIA, Leandro ; SOUZA, Maria Verônica ; PINTO, José de Oliveira ; COSTA, P. R. S. ; MONTEIRO, G. A. ; POMPERMEYER, L. G. . UTILIZAÇÃO DE XILAZINA E ÉTER GLICERIL GUAIACÓLICO (EGG) NA AVALIAÇÃO ENDOSCÓPICA GÁSTRICA DE PÔNEIS EM DECÚBITO. In: VII SIMPÓS, 2007, Viçosa. GUAIACÓLICO (EGG) NA AVALIAÇÃO ENDOSCÓPICA GÁSTRICA DE PÔNEIS EM DECÚBITO, 2007.

18.
FARIAS, S. K. ; SOUZA, Maria Verônica de ; MAIA, S. S. ; PINTO, José de Oliveira . FRATURA DO TERÇO DISTAL DO QUARTO OSSO METACÁRPICO EM EQUINO: RELATO DE CASO. In: VII SIMPÓS, 2007, Viçosa. DO TERÇO DISTAL DO QUARTO OSSO METACÁRPICO EM EQUINO: RELATO DE CASO, 2007.

19.
MAIA, Leandro ; LOPES, Marco Aurélio Ferreira ; BELÉM, Pacífico Antônio Diniz ; RIBEIRO FILHO, José Dantas ; SOUZA, Maria Verônica de ; PINTO, José de Oliveira ; BEVILACQUA, Paula Dias . Estudo Prospectivo dos casos atendidos no setor de Clínica e Cirurgia e Grandes Animais do Hospital Veterinário do DVT-UFV.. In: XIV Simpósio de Iniciação Científica, IV Mostra Científica da Pós-graduação e II Simpósio de Extensão Universitária, 2004, Viçosa - MG. Anais do XIV Simpósio de Iniciação Científica, IV Mostra Científica da Pós-graduação e II Simpósio de Extensão Universitária. Viçosa - MG: Editora UFV, 2004. v. XIV.

Artigos aceitos para publicação

1.
Bruna Mota Zandim ; SOUZA, Maria Verônica de ; Pablo Costa Magalhães ; Laércio A. Benjamin ; MAIA, Leandro ; Aécio C. de Oliveira ; Pinto, José de Oliveira ; RIBEIRO JUNIOR, J. I. . Platelet activation: ultrastructure and morphometry. Pesquisa Veterinária Brasileira (Impresso) JCR, 2011.

Apresentações de Trabalho

1.
Gertrud Elisa Campos Edler ; SOUZA, Maria Verônica de ; PINTO, José de Oliveira ; MENESES, R. M. ; Homero Leite Martins ; Samuel Rodrigues Alves . Abscesso em pescoço de muar: relato de caso. 2010. (Apresentação de Trabalho/Simpósio).

2.
Gertrud Elisa Campos Edler ; SOUZA, Maria Verônica de ; MENESES, R. M. ; PINTO, José de Oliveira ; Samuel Rodrigues Alves ; Homero Leite Martins ; Natália Tavares Fregapani . SIMPÓSIO DE PESQUISA EM MEDICINA VETERINÁRIA 2010 E III SEMANA DA PÓS-GRADUAÇÃO EM MEDICINA VETERINÁRIA UFV. 2010. (Apresentação de Trabalho/ Simpósio).

3.
Samuel Rodrigues Alves ; SOUZA, Maria Verônica de ; Gertrud Elisa Campos Edler ; MENESES, R. M. ; Homero Leite Martins ; MAYER, D. M. ; PINTO, José de Oliveira ; Natália Tavares Fregapani . SIMPÓSIO DE INTEGRAÇÃO ACADÊMICA, SIA. 2010. (Apresentação de Trabalho/Simpósio).

4.
ALMEIDA, M. M. ; SOUZA, Maria Verônica de ; SANTOS, F. C. O. ; PINTO, José de Oliveira ; PESSIN, A. E. . Empiema de bolsa gutural: relato de caso. 2007. (Apresentação de Trabalho/ Simpósio).

5.
COSTA, A. C. B. ; CRUZ, A. L. ; PINTO, José de Oliveira ; Monteiro, Gabriel Augusto ; SOUZA, Maria Verônica de ; SANTOS, F. C. O. ; ALMEIDA, M. M. ; PESSIN, A. E. . XVI SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, VI SIMPÓS-Mostra Científica da Pós-Graduação e IV Simposio de Extensão Universitária. 2007. (Apresentação de Trabalho/Simpósio).

Demais tipos de produção técnica

1.
PINTO, José de Oliveira. Principais Doenças de Bovinos Leiteiros; Aplicação de Medicamentos em Animais. 2007. (Curso de curta duração ministrado/Extensão).

2.
PINTO, José de Oliveira; SANTOS, B. M. . Aulas Práticas da Disciplina VET 347 - Higiene Veterinária. 2007. (Curso de curta duração ministrado/Outra).

3.
PINTO, José de Oliveira; SOUZA, Maria Verônica . Aulas Práticas de Disciplina 171 - Sistemas Digestório e Locomotor de Eqüinos. 2006. (Curso de curta duração ministrado/Outra).

4.
PINTO, José de Oliveira. Aula Prática da Disciplina VET 347- Higiene Veterinária. 2005. (Curso de curta duração ministrado/Outra).

5.
DETMAN ; PINTO, José de Oliveira . Digestão e Absorção de Ruminantes. 2005. (Curso de curta duração ministrado/Outra).

6.
PINTO, José de Oliveira. CLÍNICA DE BOVINOS. 2005. (Curso de curta duração ministrado/ Extensão).

7.
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8.
SOUZA, Maria Verônica ; BELÉM, Pacífico Antônio Diniz ; VIANA, J. A. ; PINTO, José de Oliveira . Aulas Práticas da Disciplina VET 171 - Semiologia Veterinária. 2005. (Curso de curta duração ministrado/Outra).

9.
PINTO, José de Oliveira. I Clínica Tecnológica do Leite. 2004. (Curso de curta duração ministrado/Extensão).

10.
PINTO, José de Oliveira. II Clínica Tecnológica do Leite. 2004. (Curso de curta duração ministrado/Extensão).

11.
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13.
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14.
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15.
PINTO, José de Oliveira. Aplicação de Medicamentos e Contenção Animal. 2002. (Curso de curta duração ministrado/Outra).

Demais trabalhos

1.
PINTO, José de Oliveira. Controle de Endo, Ectoparaitas e Doenças transmitidas. 1999 (Palestra) .

Bancas

Participação em bancas de trabalhos de conclusão
Monografias de cursos de aperfeiçoamento/especialização

1.

RIBEIRO FILHO, José Dantas; Cláudio Luis Nina Gomes; PINTO, José de Oliveira. Participação em banca de Camila Oliveira Silveira. Efeitos de soluções eletrolíticas contendo diferentes fontes de energia e cálcio em equinos com desidratação discreta. 2010. Monografia (Aperfeiçoamento/ Especialização em Clinica e Cirurgia Veterinaria) - Universidade Federal de Viçosa.

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Eventos

Participação em eventos, congressos, exposições e feiras

1.
Grupo de Estudos de Clínica e Cirurgia Equina EqVet - UFV.ANTIINFLAMATÓRIOS NÃO ESTEROIDAIS. 2011. (Seminário).

2.
37 CONGRESSO BRASILEIRO DE VETERINÁRIA COMBRAVET. Otite Externa em Equino. 2010. (Congresso).

3.
Investigação do surto de enfermidades vesicular no Hospital Veterinário da UFV em 2010. 2010. (Seminário).

4.
SIMPÓSIO DE PESQUISA EM MEDICINA VETERINÁRIA 2010E III SEMANA DA PÓS-GRADUAÇÃO EM MEDICINA VETEINÁRIA UFV.ULTRA-ESTRUTURA DE PLAQUETAS ATIVADAS CPM TROMBINA BOVINA. 2010. (Simpósio).

5.
XI CONFERÊNCIA ANUAL DA ABRAVEQ. Avaliação clínica e ultrassonográfica de tendão de equino tratado com plasma rico em plaquetas após lesão induzida cirurgicamente. 2010. (Congresso).

6.

ESCOLCA CETEB DE JOVENS E ADULTOS.GESTÃO DE PROJETOS NO SETOR PÚBLICO. 2009. (Outra).

7.
Curso de Claudicação em Eqüinos. 2008. (Oficina).

8.
IV SIMFOR. 2008. (Simpósio).

9.
VI SIMCORTE. 2008. (Simpósio).

10.
I SIMPÓSIO MINEIRO DE EQÜIDEOCULTURA. 2007. (Simpósio).

11.
XVI SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, VI SIMPÓS-Mostra Científica da Pós-Graduação e IV Simpósio de Extensão Universitária.Desmite de ligamento suspensório em equino: relato de caso. 2007. (Simpósio).

12.
XVI SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, VI SIMPÓS-Mostra Científica da Pós-Graduação e IV SIMPÓSIO DE EXTENSÃO UNIVERSITÁRIA.Desmite do ligamento suspensório em equino: relato de caso.. 2007. (Simpósio).

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XVI SIMPÓSIO DE INICIAÇÃO CIENTÍFICA, VI SIMPÓS-MOSTRA CIENTÍFICA DA PÓS-GRADUAÇÃO E IV SIMPÓSIO DE EXTENSÃO UNIVERSITÁRIA.Prolapso Uterino em cabras - Relato de dois casos clínicos. 2007. (Simpósio).

14.
III SIMPÓSIO SOBRE MANEJO ESTRATÉGICO DA PASTAGEM. 2006. (Simpósio).

15.
Odontologia de Equinos. 2006. (Oficina).

16.
V SIMCORTE. 2006. (Simpósio).

17.
IV Ciclo de Palestra em Medicina Veterinária.IV Ciclo de Palestra em Medicina Veterinária. . 2005. (Outra).

18.
Mini-Curso Prático sobre Contenção de Animais de Grande Porte.Mini-Curso Prático sobre Contenção de Animais de Grande Porte. 2005. (Outra).

19.
Tópicos em Estatística Experimental.Tópicos em Estatística Experimental. . 2005. (Oficina).

20.
Curso de Divulgação Tecnológica Merial.Curso de DivulgaçãoTécnica. 2004. (Encontro).

21.
II Simpósio sobre Manejo Estratégico da Pastagem.II Simpósio sobre Manejo Estratégico da Pastagem. 2004. (Simpósio).

22.
IV SIMCORTE - Simpósio de Produção de gado de Corte.IV SIMCORTE. 2004. (Simpósio).

23.
I Ciclo de Palestra sobre Reprodução ssistida em Caprinos.I Ciclo de Palestra sobre Reprodução Assistida em Caprinos. 2002. (Outra).

24.
III SIMCORTE - Simpósio de Produção de Gado de Corte.III SIMCORTE. 2002. (Simpósio).

25.
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26.
II SIMCORTE - II Simpósio de Produção de Gado de Corte.II SIMCORTE. 2001. (Simpósio).

27.

Curso sobre Ordenha Mecânica no Terceiro Milênio.Curso sobre Ordenha Mecânica no Terceiro Milênio. 2000. (Outra).

28.
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29.
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30.
I SIMCORTE - I Simpósio de Produção de Gado de Corte.I SIMCORTE. 1999. (Simpósio).

31.
Curso Problemas de Casco e Bovinos.Curso Problemas de Casco e Bovinos. 1998. (Outra).

32.
Curso sobre Sanidade da Glânula Mamária, Fisiopatoloia, Clínica - Patologia, Controle de Mastite e Sistemas de Produção de Leite nos EUA..Curso sobre Sanidade da Glândula Mamária, Fisiopatologia, Clínica - Patologia, Controle de Mastite e Sistemas de Produção de Leite nos EUA.. 1998. (Oficina).

33.
Curso sobre Tecnologia de Ordenha.Curso sobre Tecnologia de Ordenha. 1998. (Outra).

34.
I SIMLEITE - SImpósio sobre Produção de Leite no Brasil e Curso de Formação e Manejo de Pastagens.I SIMLEITE. 1998. (Simpósio).

35.
3º Simpósio Internacional sobre Produção Intensiva de Leite.3º Simpósio Internacional sobre Produção Intensiva de Leite. 1997. (Simpósio).

36.
Seminário sobre Cruzamento Industrial em Bovinos.Seminário sobre Cruzamento Industrial em Bovinos. 1997. (Seminário).

37.
Treinamento e Desenvolvimento Profissional.Treinamento e Desenvolvimento Profissional. 1996. (Outra).

38.
Curso de Confinamento.Curso de Confinamento. 1995. (Outra).

39.
Curso de Forragicultura.Curso de Forragicultura. 1995. (Outra).

40.
X Semana de Estudos em Medcina Veterinária - Cunicultura.XI Semana de Estudos em Medicina Veterinária. 1989. (Outra).

41.
X Semana de Estudos em Medicina Veterinária.X Semana de Estudos em Medicina Veterinária. 1988. (Outra).

42.
INTELECTOM - Treinamento Empresarial - Metodologia do Desenvolvimento Intelectual.INTELECTOM - Treinamento Empresarial. 1987. (Outra).

Outras informações relevantes
Cursos de Inglês: Number One - 1986: Dynamic Course in Basic English. Belo horizonte, 30 de junho de 1986. ICBEU - 2002: 130 hora - Michingan English Course. Viçosa, 06 e junho de 2002. Cursos de Informática: TD Informática - 1995: Introdução à Microinformática e Windows - 20 horas. 11 a 22 de dezembro de 1995. TD Informática - 1996: Introdução ao Word for Windows - 20 horas. 02 a 15 de janeiro de 1996. TD Informática - 1996: Excel - 24 horas. 28 de agosto a 21 e outubro de 1996. HOMENET - 1998: Internet - 10 horas. 06 a 09 de julho de 1998. UFV - Diretoria de Recursos Humanos - 1999: Curso Básico de Power Point - 16 horas. 05 a 14 de abril de 1999. (11/08/2005)

Minas Gerais, Brazil
March 6, 2026

To the Competent Authority

My name is Ernani Paulino do Lago, veterinarian graduated from the Federal University of Viçosa, with a master's degree in Animal Science and Pastures at the University of São Paulo and a doctorate degree in Animal Science, focusing on Pathology and Clinical Sciences, at the Federal University of Minas Gerais. Since 1993, I have been working under a full-time, exclusive dedication regime at the Federal University of Viçosa as a professor in the Veterinary Department, engaged in teaching, academic advising, and research in the field of Large Animal Internal Medicine.

In 2007, I met Hanna Carolina Campos Ferreira during her undergraduate studies in Veterinary Medicine at the Federal University of Viçosa, when I taught subjects in the field of Veterinary Clinical Studies. Later, I worked as her advisor during her Specialization in Large Animal Internal Medicine and Surgery at the Federal University of Viçosa (UFV) Veterinary Hospital, co-advisor during her master's and doctoral degrees in Veterinary Medicine, and I also participated on her master's thesis examining committee. This long academic relationship allowed me to closely follow her technical, scientific, and professional evolution throughout different stages of her training.

During this period, I noted her constant involvement in studies on host-virus interaction, primarily in understanding the mechanisms of viral shedding, viremia, and serological response in dairy cows naturally infected with bovine herpesvirus. This line of research is highly relevant to veterinary medicine, as it contributes to advancing the scientific knowledge required to develop prevention and control methods for viral diseases in animals, thereby impacting herd health and livestock production.

In addition to her research work, Hanna demonstrated the ability to transform technical knowledge into consistent academic work, with results disseminated through publications and presentations at scientific conferences. Her participation in leadership activities for the team responsible for managing the animals used in experiments also stands out, promoting interaction among professionals from different sectors of the Veterinary Department and broadening the exchange of knowledge within the university environment. Furthermore, she contributed to strengthening the interaction among faculty members from various sectors of the University and to fostering an institutional partnership with the University of Minnesota. These factors reveal a performance that was not limited to individual research development, but also contributed to academic and institutional integration.

Another aspect that has always impressed me about Hanna is her combination of laboratory knowledge and field experience. This comprehensive training enhanced

her analytical capacity and her aptitude for reaching well-founded conclusions that align with the practical reality of her field. Throughout our professional relationship, she has demonstrated responsibility, strong organizational skills, focus, proactivity, diligence, and integrity in fulfilling her duties, always seeking technical refinement and professional evolution. These qualities, combined with her academic background and cumulative experience in research, teaching, and veterinary practice, make her stand out as an exceptional professional.

I believe it is worth emphasizing that her journey has inspired other students at UFV to pursue advanced studies in graduate programs and international collaboration experiences. This impact is remarkable, as it reveals leadership through example, dedication to the development of peers, and a beneficial impact on the scientific and academic landscape in which she works.

After years of observing her work, I recognize that Hanna Carolina Campos Ferreira possesses a robust scientific foundation, practical experience, an exemplary professional attitude, and the technical aptitude to execute complex tasks in her field. My opinion stems from the continuous oversight of her academic and professional journey, rather than a brief interaction. Thus, I express my support for her professional and academic progress, confident that her performance will bring valuable contributions to projects that demand expertise, responsibility, and scientific discernment.

Sincerely,



Ernani Paulino do Lago
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I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 22, 2026.

Minas Gerais, Brasil
06 de março de 2026

À Autoridade Competente

Meu nome é Ernani Paulino do Lago, médico-veterinário formado pela Universidade Federal de Viçosa, com mestrado em Ciência Animal e Pastagens pela Universidade de São Paulo e doutorado em Ciência Animal, com foco em Patologia e Ciências Clínicas, pela Universidade Federal de Minas Gerais. Desde 1993, trabalho em regime de dedicação exclusiva na Universidade Federal de Viçosa, como professor do Departamento de Veterinária, atuando com ensino, orientação acadêmica e pesquisa na área de Clínica de Grandes Animais.

Em 2007, conheci Hanna Carolina Campos Ferreira durante sua graduação em Medicina Veterinária na Universidade Federal de Viçosa, quando lecionei em disciplinas da área de Clínica Veterinária. Mais tarde, fui seu orientador na Especialização em Clínica e Cirurgia de Grandes Animais no Hospital Veterinário da UFV, coorientador em seu mestrado e doutorado em Medicina Veterinária e participei da banca de defesa de sua dissertação de mestrado. Essa longa convivência acadêmica me permitiu acompanhar de perto sua evolução técnica, científica e profissional em diferentes fases de sua formação.

Nesse período, notei seu envolvimento constante com estudos sobre a interação entre hospedeiro e vírus, principalmente na compreensão dos mecanismos de eliminação viral, viremia e resposta sorológica em vacas leiteiras naturalmente infectadas por herpesvírus bovino. Essa linha de pesquisa é muito relevante para a medicina veterinária, pois contribui para o aprimoramento do conhecimento científico necessário para o desenvolvimento de métodos de prevenção e controle de doenças virais em animais, impactando a sanidade dos rebanhos e a produção animal.

Além de sua atuação em pesquisa, Hanna mostrou habilidade em transformar conhecimento técnico em trabalho acadêmico consistente, com resultados divulgados em publicações e apresentações em congressos científicos. Destaca-se também sua participação em atividades de liderança da equipe responsável pela manutenção dos animais usados em experimentos, promovendo a interação entre profissionais de diferentes setores do Departamento de Veterinária e ampliando a troca de conhecimento no ambiente universitário. Houve ainda contribuição para o fortalecimento da interação entre docentes de vários setores da Universidade e para a aproximação institucional com a Universidade de Minnesota. Esses fatores revelam uma atuação que não se limitou ao desenvolvimento individual de pesquisa, mas que também colaborou para a integração acadêmica e institucional.

Outro ponto que sempre me impressionou em Hanna foi a combinação entre conhecimento laboratorial e experiência de campo. Essa formação mais completa aumentou sua capacidade

de análise e sua aptidão para chegar a conclusões fundamentadas e compatíveis com a realidade prática da área em que atua. Ao longo da nossa convivência profissional, ela demonstrou responsabilidade, organização, foco, proatividade, zelo e seriedade no cumprimento de suas tarefas, sempre buscando aprimoramento técnico e evolução profissional. Essas qualidades, somadas à sua formação acadêmica e à experiência acumulada em pesquisa, ensino e prática veterinária, a destacam como profissional.

Acho válido ressaltar que sua caminhada inspirou outros alunos da UFV a perseguirem estudos avançados em programas de pós e vivências com colaboração global. Esse impacto é notável, pois revela liderança através do exemplo, dedicação ao desenvolvimento de colegas e um impacto benéfico no cenário científico e acadêmico onde atua.

Após anos observando seu trabalho, percebo que Hanna Carolina Campos Ferreira possui uma base científica robusta, vivência prática, postura profissional exemplar e aptidão técnica para executar tarefas complexas em sua área. Minha opinião vem de um acompanhamento contínuo de sua jornada acadêmica e profissional, não apenas de um contato breve. Assim, expresso meu apoio ao seu progresso profissional e acadêmico, confiante de que sua atuação trará contribuições valiosas a projetos que demandem expertise, responsabilidade e discernimento científico.

Atenciosamente,



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Ernani Paulino do Lago

Holds a degree in Veterinary Medicine at the Federal University of Viçosa (1990), a Master's degree in Animal Science and Pastures at the University of São Paulo (1997), and a Doctorate degree in Animal Science - Pathology and Clinical Sciences from the Federal University of Minas Gerais. Currently works as Assistant Professor at the Federal University of Viçosa, focusing primarily on the following topics: dairy cows, metabolic disorders, ketosis, non-esterified fatty acids, and lactation.

Identification

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Academic background/degree
2003 - 2007
Doctorate Program in Animal Science.
Federal University of Minas Gerais, UFMG, Brazil.
Title: EXPERIMENTAL Mascagnia rigida (A. Juss.) Griseb. (Malpighiaceae) POISONING IN SHEEP: PHYTOCHEMICAL AND PHYTOANATOMICAL STUDIES, AND CLINICAL, LABORATORY, AND ECHOCARDIOGRAPHIC ASPECTS, Year of completion: 2007.
Advisor: Marília Martins Melo.
Fellow: Coordination for the Improvement of Higher Education Personnel, CAPES, Brazil.
1995 - 1997
Master's Degree in Animal Science and Pastures.
University of São Paulo, USP, Brazil.
Title: Evaluation of the incidence of ketosis in dairy cows, Year of completion: 1997.
Advisor: Vidal Pedroso de Faria.
Fellow: Coordination for the Improvement of Higher Education Personnel, CAPES, Brazil.
Keywords: Ketosis; Metabolic disorders; Lactation; Dairy cows.
Major field: Agricultural Sciences
Activity sectors: Animal Production, Including Veterinary Services.

1986 - 1990
Bachelor's Degree in Veterinary Medicine
Federal University of Viçosa, UFV, Brazil.

Professional Experience

Federal University of Viçosa, UFV, Brazil.
Institutional Affiliation

1993 - Present
Affiliation: Public Servant, Job Title: Assistant Professor, Workload: 40 hours,
Work Schedule: Full-time.

Activities

2/1993 - Present
Teaching, Veterinary Medicine, Level: Undergraduate course

Subjects Taught
VET 171 Veterinary Semiology
VET 374 Large Animal Internal Medicine

Production

Bibliographic production
Full articles published in journals

1.
LAGO, LUIZ ALBERTO ; MELO, MARILIA MARTINS ; HENEINE, LUIS G. DINIZ ; LAGO, ERNANI PAULINO ; OLIVEIRA, NEIDE J. FARIA ; SILVA JUNIOR, PAULO G. P. . CLINICAL EVALUATION OF CATTLE INOCULATED WITH Crotalus durissus terrificus VENOM DETOXIFIED BY IODINATION AND IODINATION WITH ENCAPSULATION IN LIPOSOMES. Brazilian Animal Science (UFG. Print) JCR , v. 13, pp. 234-239, 2012.

2.
LAGO, E. P.; M. M. Melo ; R. B. Araújo ; E. F. Nascimento ; E. F. Silva ; M. B. Melo . Electrocardiographic and echodopplercardiographic profiles of sheep after ingestion. Brazilian Journal of Veterinary and Animal Sciences JCR , v. 61, pp. 853-862, 2009. Citations: WEB OF SCIENCE 7| SCOPUS 14

3.
LAGO, L. A. ; MARQUES JUNIOR, A. P. ; M. M. Melo ; LAGO, E. P. ; OLIVEIRA, N. J. F. ; ALZAMORA FILHO, F. . Serum biochemical profile of cattle experimentally inoculated with free iodinated and liposome-incorporated iodinated crotalic venom. Brazilian Journal of Veterinary

and Animal Sciences JCR , v. 56, pp. 653-657, 2004. Citations: WEB OF SCIENCE ℠ 3|SciELO12| SCOPUS4

4.
LAGO, E. P.; COSTA, A. P. D. ; PIRES, A. V. ; SUSIN, I. ; FARIA, V. P. ; LAGO, L. A. . Metabolic parameters in dairy cows during the postpartum transition period. Brazilian Journal of Veterinary Science (Print), v. 11, pp. 98-103, 2004.

5.
VERCOSA JUNIOR, D. ; M. M. Melo ; DANTAS-BARROS, A. M. ; GOMES, A. M. ; SILVA JUNIOR, P. G. ; LAGO, E. P. . Hematological profile and spleen weight of mice with Ehrlich tumor in solid form treated with Agaricus blazei. Brazilian Journal of Pharmacognosy (Print) JCR , v. 14, pp. 32-34, 2004. Citations: 3|SciELO 12|SCOPUS 4

6.
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7.
Alex Pauvolid-Corrêa · Larissa Berdine Gomes de Jesus · Vivian Alves Piuzana Barbosa · Yuri Elias Teixeira Oliveira · Marcos Alexandre Nunes da Silva · Milena de Paula Rebello · Gabriel Soares de Freitas · Gabriela de Souza Bem · Ana Alice Pimenta-Pereira · Ana Gabriela Coelho Rabelo · Ewelyn Vitoria Jesus Dias Gonçalves · Mariana Freitas Moreira · Bruno Brito Morente · Mariana de Souza Tomich · Letícia Santos Silva Domingues · Meylling Mayara Linhares Magalhães · Teresa Cristyne Brasil de Souza Cavalheiro · Ernani Paulino do Lago · José Júnior França de Barros · Debora Ferreira Barreto-Vieira. Isolation of Orthopoxvirus vaccinia during an outbreak of vesicular disease in dairy cattle from Viçosa, state of Minas Gerais, southeastern Brazil. Brazilian Journal of Microbiology. São Paulo, SP, 2025.

Articles in Newspapers and Magazines

1.
LAGO, L. A. ; M. M. Melo ; LAGO, E. P. ; SILVA JUNIOR, P. G. ; VERCOSA JUNIOR, D. Crotalic envenomation. Technical Booklet of Veterinary and Animal Science, pp. 80 - 89, May 05, 2004.

Extended abstracts published in conference proceedings

1.
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Buiatrics, 2005, Valdivia, Chile. 12th Latin American Congress of Buiatrics - 7th Chilean Buiatrics Conference, 2005.

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1.
SANTOS, M. M. ; LAGO, E. P. ; FREIRE, A. H. ; MACEDO, D. M. ; MELO NETO, G. B. ; MONTEIRO, L. C. ; SOUTO, P. C. . Pregnancy toxemia in goats: a case report. In: Academic Integration Symposium, 2016, Viçosa. Proceedings of the Academic Integration Symposium - Theme: Hunger and abundance: a Brazilian paradox., 2016.

2.
MELO NETO, G. B. ; LAGO, E. P. ; FREIRE, A. H. ; MACEDO, D. M. ; DANTAS, F. T. R. ; GUIMARAES, J. A. ; MONTEIRO, L. C. ; SANTOS, M. M. ; SOUTO, P. C. . Mastitis in goats: clinical, laboratory, and therapeutic aspects of animals treated at the Veterinary Hospital of the Federal University of Viçosa. In: Academic Integration Symposium, 2016, Viçosa. Proceedings of the Academic Integration Symposium - Theme: Hunger and abundance: a Brazilian paradox., 2016.

3.
SOUTO, P. C. ; LAGO, E. P. ; SANTOS, M. M. ; MACEDO, D. M. ; MONTEIRO, L. C. ; FREIRE, A. H. ; MELO NETO, G. B. ; FONSECA, L. A. ; DANTAS, F. T. R. ; GUIMARAES, J. A. . In vivo rabies diagnosis in equids and ruminants through ocular surface cytology (corneal imprint). In: Academic Integration Symposium, 2016, Viçosa. Proceedings of the Academic Integration Symposium - Theme: Hunger and abundance: a Brazilian paradox., 2016.

4.
FERREIRA, H. C. C. ; LEITE, R. A. ; PINTO, J. O. ; CAMPOS, M. G. ; ROSADO, N. C. L. ; MAGALHAES JUNIOR, M. J. ; SAMPAIO, N. ; LAGO, E. P. ; ALMEIDA, M. R. ; Silva Júnior, A . Viral shedding and immune response of cattle experimentally infected with bovine herpesvirus 1. In: Research Symposium in Veterinary Medicine, 2014, Viçosa. Proceedings of the Research Symposium in Veterinary Medicine - November 12 to 15, 2014., 2014. pp. 99-99.

5.
GUERRA, S. T. ; GUIMARAES, J. A. ; RIBEIRO, B. M. ; DUARTE, M. A. ; PINTO, J. O. ; LAGO, E. P. . Abomasal ulcer in a calf: a case report. In: Research Symposium in Veterinary Medicine, 2014, Viçosa. Proceedings of the Research Symposium in Veterinary Medicine - November 12 to 15, 2014., 2014. pp. 77-77.

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weight of mice with Ehrlich tumor in solid form. In: Ibero-American Congress of Medicinal Plants, 2004, Angra dos Reis, RJ. Biodiversity and Health, 2004.

7.
M. M. Melo ; LAGO, L. A. ; LAGO, E. P. . Cattle intoxication by Thiloa glaucocarpa (Combretaceae). In: 23rd World Buiatrics Congress, 2004, Québec. Poster Abstracts, 2004.

8.
LAGO, E. P.; PIRES, A. V. ; LAGO, L. A. ; M. M. Melo ; SUSIN, I. ; FARIA, V. P. . Incidence of ketosis in cows from a high-production dairy herd. In: 18th Research Meeting of the Veterinary School of UFMG - 1st Teaching and Extension Meeting, 2003, Belo Horizonte, MG. 18th Research Meeting of the Veterinary School of UFMG, 2003.

9.
LAGO, E. P.; COSTA, A. P. D. ; PIRES, A. V. ; SUSIN, I. ; FARIA, V. P. ; LAGO, L. A. ; BELEM, P. A. D. . Plasma levels of glucose, beta-hydroxybutyrate, non-esterified fatty acids, and aspartate aminotransferase in high-production dairy cows during the postpartum period. In: 28th Brazilian Congress of Veterinary Medicine, 2001, Salvador. Proceedings of the 28th Brazilian Congress of Veterinary Medicine. Salvador, 2001. pp. 116-116.

10.
LAGO, E. P.; COSTA, A. P. D. ; PIRES, A. V. ; SUSIN, I. ; FARIA, V. P. ; LAGO, L. A. ; BELEM, P. A. D. . Influence of body weight loss at early lactation on the metabolism of Holstein cows. In: 28th Brazilian Congress of Veterinary Medicine, 2001, Salvador. Proceedings of the 28th Brazilian Congress of Veterinary Medicine. Salvador, 2001. pp. 116-117.

Scholarly Presentations

1.
MELO NETO, G. B. ; LAGO, E. P. ; MACEDO, D. M. ; MONTEIRO, L. C. ; FREIRE, A. H. ; SANTOS, M. M. ; SOUTO, P. C. ; DANTAS, F. T. R. ; GUIMARAES, J. A. . Mastitis in goats: clinical, laboratory, and therapeutic aspects of animals treated at the Veterinary Hospital of the Federal University of Viçosa. 2016. (Presentation/Symposium).

2.
SANTOS, M. M. ; LAGO, E. P. ; MELO NETO, G. B. ; MACEDO, D. M. ; MONTEIRO, L. C. ; SOUTO, P. C. ; FREIRE, A. H. . Pregnancy toxemia in goats: a case report. 2016. (Presentation/Symposium).

3.

SOUTO, P. C. ; LAGO, E. P. ; SANTOS, M. M. ; MACEDO, D. M. ; MONTEIRO, L. C. ; FREIRE, A. H. ; MELO NETO, G. B. ; FONSECA, L. A. ; DANTAS, F. T. R. ; GUIMARAES, J. A. . In vivo rabies diagnosis in equids and ruminants through ocular surface cytology (corneal imprint). 2016. (Presentation/Symposium).

4.
FERREIRA, H. C. C. ; LEITE, R. A. ; PINTO, J. O. ; CAMPOS, M. G. ; ROSADO, N. C. L. ; MAGALHAES JUNIOR, M. J. ; SAMPAIO, N. ; LAGO, E. P. ; ALMEIDA, M. R. ; Silva Júnior, A . Viral shedding and immune response of cattle experimentally infected with bovine herpesvirus 1. 2014. (Presentation/Symposium).

5.
GUERRA, S. T. ; GUIMARAES, J. A. ; RIBEIRO, B. M. ; DUARTE, M. A. ; PINTO, J. O. ; LAGO, E. P. . Abomasal ulcer in a calf: a case report. 2014. (Presentation/Symposium).

6.
MARTINS, H. L. ; HAGE, M. C. F. N. S. ; LAGO, E. P. ; EDLER, G. E. C. ; ALVES, S. R. ; MENESES, R. M. . Thoracic ultrasound in cattle with respiratory and cardiac disorders. 2010. (Paper Presentation/Symposium).

7.
FERREIRA, H. C. C. ; LAGO, E. P. ; BELEM, P. A. D. ; DONNER, A. C. ; SILVEIRA, C. O. ; LAGO, L. A. ; BAPTISTA FILHO, L. C. F. ; ANDRADE, R. B. . Prepubic tendon rupture in a cow as a consequence of dropsy due to hydroallantois. A case report. 2009. (Presentation/Symposium).

8.
Meylling Mayara Linhares Magalhães, Larissa Berdine Gomes De Jesus, Gabriel Soares De Freitas, Gabriela Souza Bem, Vivian Alves Piuzana Barbosa, Milena de Paula Rebello, Marcos Alexandre Nunes Da Silva, Ernani Paulino Do Lago, José Júnior França De Barros, Debora Ferreira Barreto Vieira, Alex Pauvolid-Corrêa. Bovine vaccinia by vaccinia virus in dairy cattle in Viçosa, Minas Gerais. Conference Presentation at the 59th MEDTROP - Congress of the Brazilian Society of Tropical Medicine. 2024.

Examining Committees

Participation in examining committees
Master's Degree

1.
Silva Júnior, A; LAGO, E. P.; Oliveira, L L; Araújo, J V. Examining committee of Hanna Carolina Campos Ferreira. BOVINE HERPESVIRUS (BoHV-1 AND/OR BoHV-5): SHEDDING

PATHWAYS, VIREMIA, AND SEROLOGY OF NATURALLY INFECTED DAIRY COWS. 2012. Master's Thesis (Master's Degree in Veterinary Medicine) - Federal University of Viçosa.

2.
RIBEIRO FILHO, J. D.; BARIONI, G.; LAGO, E. P.; BORGES, A. P. B.; GUIMARAES, J. D.. Examining committee of Marcel Ferreira Bastos Avanza. Electrolytic solution associated or not with glucose, maltodextrin, and magnesium sulfate administered enterally in healthy and experimentally dehydrated horses. 2007. Master's Thesis (Master's Degree in Veterinary Medicine) - Federal University of Viçosa.

Doctoral Dissertation

1.
CAMPOS, J. M. S.; VALADARES FILHO, S. C.; DETMANN, E.; RENNO, L. N.; LAGO, E. P.. Examining committee of José Carlos Peixoto Modesto da Silva. Concentrate and rumen-undegradable protein levels in the diet of lactating cows. 2009. Doctoral Dissertation (Doctorate degree in Animal Science) - Federal University of Viçosa.

Capstone Projects

1.
LAGO, E. P.; Nero, L A; FERREIRA, H. C. C.. Examining committee of Gertrud Elisa Campos Edler. Occurrence of ketosis in dairy herds in the micro-region of Viçosa - MG and association of body condition score at calving with the physicochemical composition of milk at early lactation. 2012. Capstone Project (Capstone Project in Veterinary Medicine and Surgery) - Federal University of Viçosa.

2.
LAGO, E. P.; BELEM, P. A. D.; PINTO, J. O.. Examining committee of Hanna Carolina Campos Ferreira. Aspects related to the behavior of dairy cows, with an emphasis on the free-stall housing system. 2010. Capstone Project (Capstone Project in Veterinary Medicine and Surgery) - Federal University of Viçosa.

3.
LAGO, E. P.. Examining committee of Marcel Monteze de Almeida. Evaluation of balance and growth of the equine hoof supplemented with biotin and its relationships with zinc levels. 2008. Capstone Project (Capstone Project in Veterinary Medicine) - Federal University of Viçosa.

Academic Search Committees

Public examinations

1.
Marlene Isabel Vargas Viloria; BELEM, P. A. D.; LAGO, E. P.; RIBEIRO FILHO, J. D.; Luiz Gonzaga Pompermayer. Academic Search Committee for Adjunct Professor - Large Animal Internal Medicine. 2009. Federal University of Viçosa.

Course evaluation

1.
LAGO, E. P.; Brunna Patrícia Almeida da Fonseca; Lukyia Silva Campos Favarato. Chair of the Examining committee for the Selection of Candidates for the "Lato Sensu" Graduate Studies Residency Program in Veterinary Medicine. 2011. Federal University of Viçosa.

Other participations

1.
LAGO, E. P.. Full Member of the Biodiversity Sub-Committee. 2011. Federal University of Viçosa.

2.
LAGO, E. P.. Peer-reviewer of papers for the Federal Council of Veterinary Medicine. 2010. Federal Council of Veterinary Medicine.

3.
LAGO, E. P.. Alternate Member of the COMAM Waste Management Sub-Committee. 2009. Federal University of Viçosa.

4.
GUIMARAES, J. D.; HAGE, M. C. F. N. S.; Tarcízio Antônio Rego de Paula; Brunna Patrícia Almeida da Fonseca; LAGO, E. P.. Extension Committee of the Veterinary Department. 2009. Federal University of Viçosa.

5.
Marlene Isabel Vargas Viloria; LAGO, E. P.; Maria Aparecida Scatamburlo Moreira. Evaluation Committee for the Probationary Period of Professor Brunna Fonseca. 2009. Federal University of Viçosa.

6.
ERNANI PAULINO DO LAGO. Member of the Coordinating Committee for the Veterinary Medicine Program at the Federal University of Viçosa, with a four-year mandate starting on 08/29/2025.

Events

Participation in events, conferences, exhibitions, and fairs

1.
Challenges in the diagnosis of animal leptospirosis. 2016. (Seminar).

2.
Technical Assistance Plan for the Suçuarana Project in Serra do Brigadeiro. Main Cattle Diseases in the Region of the Serra do Brigadeiro State Park. 2011. (Meeting).

3.
Continuing Education for Professors at the Federal University of Viçosa. 2009. (Other).

4.
2nd Unileite - Univiçosa. Lameness in Dairy Herds. 2009. (Other).

5.
78th Farmer's Week. Main Diseases of Dairy Cattle. 2007. (Congress).

6.
14th Academic Week of the Veterinary Medicine Program. Care techniques for newborn goats. 2006. (Meeting).

7.
2nd Minas Gerais Symposium of Buiatrics. 2005. (Symposium).

8.
1st Latin American Symposium on Toxic Plants. Preliminary phytochemical screening of Thiloa glaucocarpa Eichl. 2004. (Seminar).

9.
1st Latin American Symposium on Toxic Plants. Experimental hematological, serum biochemical, and anatomohistopathological study of rabbits treated with Thiloa glaucocarpa Eichl. 2004. (Symposium).

10.
1st Minas Gerais Symposium of Buiatrics. 2004. (Symposium).

11.

Special Topics in Parasitic Diseases. 2003. (Other).

Advising

Concluded academic advising and supervision

Master's thesis

1.
Hanna Carolina Campos Ferreira. BOVINE HERPESVIRUS (BoHV-1 AND/OR BoHV-5): SHEDDING PATHWAYS, VIREMIA, AND SEROLOGY OF NATURALLY INFECTED DAIRY COWS. 2012. Master's Thesis (Master's Degree in Veterinary Medicine) - Federal University of Viçosa. Co-advisor: Ernani Paulino do Lago.

Capstone Projects

1.
Gertrud Elisa Campos Edler. Occurrence of ketosis in dairy herds in the micro-region of Viçosa - MG and association of body condition score at calving with the physicochemical composition of milk at early lactation. 2012. Capstone Project. (Capstone Project in Veterinary Medicine and Surgery) - Federal University of Viçosa. Advisor: Ernani Paulino do Lago.

2.
Hanna Carolina Campos Ferreira. Aspects related to the behavior of dairy cows, with an emphasis on the free-stall housing system. 2009. Capstone Project. (Capstone Project in Veterinary Medicine) - Federal University of Viçosa. Advisor: Ernani Paulino do Lago.

3.
Letícia Souza Silva Andrade. Bovine Spongiform Encephalopathy. 2021. Capstone Project. "Lato Sensu" Graduate Program in "Sanitary Defense and Technology and Inspection of Products of Animal Origin with an Emphasis on Legislation" offered by UNIMAIS – UNIMAIS – EDUCAMAIS COLLEGE, with the support of Ifope Soluções e Treinamentos Ltda – ME, via distance learning (EAD). Co-advisor: Ernani Paulino do Lago.

Other Relevant Information
- Participation in the steering committee for the electoral process to nominate the new head of the Veterinary Department at the Federal University of Viçosa - 2007- Head of the Large Animal Internal Medicine and Surgery sector at the Veterinary Hospital of the Veterinary Department at the Federal University of Viçosa - since 2010

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 28, 2026.

Ernani Paulino do Lago

Possui graduação em Medicina Veterinária pela Universidade Federal de Viçosa (1990), Mestrado em Ciência Animal e Pastagens pela Universidade de São Paulo (1997) e Doutorado em Ciência Animal - Patologia e Ciências Clínicas pela Universidade Federal de Minas Gerais. Atualmente é Professor Adjunto da Universidade Federal de Viçosa, atuando principalmente nos seguintes temas: vacas leiteiras, distúrbio metabólico, cetose, ácidos graxos não-esterificados e lactação.

Identificação

Nome: Ernani Paulino do Lago

Nome em citações bibliográficas: LAGO, E. P.;LAGO, ERNANI PAULINO

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Formação acadêmica/titulação
2003 - 2007
Doutorado em Pós-Graduação em Ciência Animal.
Universidade Federal de Minas Gerais, UFMG, Brasil.
Título: INTOXICAÇÃO EXPERIMENTAL EM OVINOS POR Mascagnia rigida (A. Juss.) Griseb. (Malpighiaceae): ESTUDOS FITOQUÍMICO, FITOANATÔMICO E ASPECTOS CLÍNICOS, LABORATORIAIS E ECOCARDIOGRÁFICOS, Ano de obtenção: 2007.
Orientador: Marília Martins Melo.
Bolsista do(a): Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, CAPES, Brasil.
1995 - 1997
Mestrado em Ciência Animal e Pastagens.
Universidade de São Paulo, USP, Brasil.
Título: Avaliação da incidência de cetose em vacas leiteiras, Ano de Obtenção: 1997.
Orientador: Vidal Pedroso de Faria.
Bolsista do(a): Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, CAPES, Brasil.
Palavras-chave: Cetose; Distúrbio metabólico; Lactação; Vaca leiteira.
Grande área: Ciências Agrárias
Setores de atividade: Produção Animal, Inclusive Serviços Veterinários.

1986 - 1990
Graduação em Medicina Veterinária.
Universidade Federal de Viçosa, UFV, Brasil.

Atuação Profissional

Universidade Federal de Viçosa, UFV, Brasil.
Vínculo institucional

1993 - Atual
Vínculo: Servidor Público, Enquadramento Funcional: professor adjunto, Carga horária: 40, Regime: Dedicação exclusiva.

Atividades

2/1993 - Atual
Ensino, Medicina Veterinária, Nível: Graduação

Disciplinas ministradas
VET 171 Semiologia Veterinária
VET 374 Clínica de Grandes Animais

Produções

Produção bibliográfica
Artigos completos publicados em periódicos

1.
LAGO, LUIZ ALBERTO ; MELO, MARILIA MARTINS ; HENEINE, LUIS G. DINIZ ; LAGO, ERNANI PAULINO ; OLIVEIRA, NEIDE J. FARIA ; SILVA JUNIOR, PAULO G. P. . AVALIAÇÃO CLÍNICA DE BOVINOS INOCULADOS COM VENENO DE Crotalus durissus terrificus DETOXIFICADO POR IODAÇÃO E IODAÇÃO COM ENCAPSULAÇÃO EM LIPOSOMAS. Ciência Animal Brasileira (UFG. Impresso) JCR, v. 13, p. 234-239, 2012.

2.
LAGO, E. P.; M. M. Melo ; R. B. Araújo ; E. F. Nascimento ; E. F. Silva ; M. B. Melo . Perfis eletrocardiográfico e ecodopplercardiográfico de ovinos após ingestão. Arquivo Brasileiro de Medicina Veterinária e Zootecnia JCR, v. 61, p. 853-862, 2009. Citações: WEB OF SCIENCE ℠ 7| SCOPUS 14

3.
LAGO, L. A. ; MARQUES JUNIOR, A. P. ; M. M. Melo ; LAGO, E. P. ; OLIVEIRA, N. J. F. ; ALZAMORA FILHO, F. . Perfil bioquímico sorológico de bovinos inoculados experimentalmente com veneno crotálico iodado livre e iodado incorporado em lipossomas. Arquivo

Brasileiro de Medicina Veterinária e Zootecnia JCR, v. 56, p. 653-657, 2004. Citações: WEB OF SCIENCE ℠ 3|SciELO12|SCOPUS4

4.
LAGO, E. P.; COSTA, A. P. D. ; PIRES, A. V. ; SUSIN, I. ; FARIA, V. P. ; LAGO, L. A. . Parâmetros metabólicos em vacas leiteiras durante o período de transição pós-parto. Revista Brasileira de Ciência Veterinária (Impresso), v. 11, p. 98-103, 2004.

5.
VERCOSA JUNIOR, D. ; M. M. Melo ; DANTAS-BARROS, A. M. ; GOMES, A. M. ; SILVA JUNIOR, P. G. ; LAGO, E. P. . Quadro hematológico e peso do baço de camundongos com tumor de Ehrlich na forma sólida tratados com Agaricus blazei. Revista Brasileira de Farmacognosia (Impresso) JCR, v. 14, p. 32-34, 2004. Citações:SciELO12|SCOPUS4

6.
LAGO, E. P.; PIRES, A. V. ; SUSIN, I. ; FARIA, V. P. ; LAGO, L. A. . Efeito da condição corporal ao parto sobre alguns parâmetros do metabolismo energético, produção e incidência de doenças no pós-parto de vaca leiteiras. Revista Brasileira de Zootecnia / Brazilian Journal of Animal Science JCR, Viçosa, v. 30, p. 1544-1549, 2001.

7.
Alex Pauvolid-Corrêa · Larissa Berdine Gomes de Jesus · Vivian Alves Piuzana Barbosa · Yuri Elias Teixeira Oliveira · Marcos Alexandre Nunes da Silva · Milena de Paula Rebello · Gabriel Soares de Freitas · Gabriela de Souza Bem · Ana Alice Pimenta-Pereira · Ana Gabriela Coelho Rabelo · Ewelyn Vitoria Jesus Dias Gonçalves · Mariana Freitas Moreira · Bruno Brito Morente · Mariana de Souza Tomich · Letícia Santos Silva Domingues · Meylling Mayara Linhares Magalhães · Teresa Cristyne Brasil de Souza Cavalheiro · Ernani Paulino do Lago · José Júnior França de Barros · Debora Ferreira Barreto-Vieira. Isolation of Orthopoxvirus vaccinia during an outbreak of vesicular disease in dairy cattle from Viçosa, state of Minas Gerais, southeast Brazil. Brazilian Journal of Microbiology. São Paulo, SP, 2025.

Textos em jornais de notícias/revistas

1.
LAGO, L. A. ; M. M. Melo ; LAGO, E. P. ; SILVA JUNIOR, P. G. ; VERCOSA JUNIOR, D. . Envenenamento crotálico. Caderno Técnico de Veterinária e Zootecnia, p. 80 - 89, 05 maio 2004.

Resumos expandidos publicados em anais de congressos

1.
M. M. Melo ; COSTA, M. E. R. ; CUNHA, M. P. ; RIBEIRO, E. L. ; BARBOSA, E. ; LAGO, E. P. . Ovine blood profile after Mascagnia rigida intoxication. In: XII Congresso Latinoamericano de

Buiatria, 2005, Valdivia, Chile. XII Congresso Latinoamericano de Buiatría - VII Jornadas Chilenas de Buiatria, 2005.

Resumos publicados em anais de congressos

1.
SANTOS, M. M. ; LAGO, E. P. ; FREIRE, A. H. ; MACEDO, D. M. ; MELO NETO, G. B. ; MONTEIRO, L. C. ; SOUTO, P. C. . Toxemia da prenhez em cabra: relato de caso. In: Simpósio de Integração Acadêmica, 2016, Viçosa. Anais do Simpósio de Integração Acadêmica - Tema: Fome e abundância: um paradoxo Brasileiro., 2016.

2.
MELO NETO, G. B. ; LAGO, E. P. ; FREIRE, A. H. ; MACEDO, D. M. ; DANTAS, F. T. R. ; GUIMARAES, J. A. ; MONTEIRO, L. C. ; SANTOS, M. M. ; SOUTO, P. C. . Mastite em caprinos: aspectos clínicos, laboratoriais e terapêuticos de animais atendidos no Hospital Veterinário da Universidade Federal de Viçosa. In: Simpósio de Integração Acadêmica, 2016, Viçosa. Anais do Simpósio de Integração Acadêmica - Tema: Fome e abundância: um paradoxo Brasileiro., 2016.

3.
SOUTO, P. C. ; LAGO, E. P. ; SANTOS, M. M. ; MACEDO, D. M. ; MONTEIRO, L. C. ; FREIRE, A. H. ; MELO NETO, G. B. ; FONSECA, L. A. ; DANTAS, F. T. R. ; GUIMARAES, J. A. . Diagnóstico da raiva in vivo em equídeos e ruminantes através da citologia da superfície ocular (imprint de córnea). In: Simpósio de Integração Acadêmica, 2016, Viçosa. Anais do Simpósio de Integração Acadêmica - Tema: Fome e abundância: um paradoxo Brasileiro., 2016.

4.
FERREIRA, H. C. C. ; LEITE, R. A. ; PINTO, J. O. ; CAMPOS, M. G. ; ROSADO, N. C. L. ; MAGALHAES JUNIOR, M. J. ; SAMPAIO, N. ; LAGO, E. P. ; ALMEIDA, M. R. ; Silva Júnior, A . Eliminação viral e resposta imune de bovinos experimentalmente infectados por bovine herpesvírus 1. In: Simpósio de Pesquisa em Medicina Veterinária, 2014, Viçosa. Anais do Simpósio de Pesquisa em Medicina Veterinária - 12 a 15 de Novembro de 2014., 2014. p. 99-99.

5.
GUERRA, S. T. ; GUIMARAES, J. A. ; RIBEIRO, B. M. ; DUARTE, M. A. ; PINTO, J. O. ; LAGO, E. P. . Úlcera de abomaso em bezerro: relato de caso. In: Simpósio de Pesquisa em Medicina Veterinária, 2014, Viçosa. Anais do Simpósio de Pesquisa em Medicina Veterinária - 12 a 15 de Novembro de 2014., 2014. p. 77-77.

6.
VERCOSA JUNIOR, D. ; M. M. Melo ; DANTAS-BARROS, A. M. ; GOMES, A. M. ; SILVA JUNIOR, P. G. ; LAGO, E. P. . Atividade de Agaricus blazei sobre o quadro hematológico e peso do

baço de camundongos com tumor de Ehrlich na forma sólida. In: Congresso Íbero-americano de Plantas Medicinais, 2004, Angra dos Reis, RJ. Biodiversidade e Saúde, 2004.

7.
M. M. Melo ; LAGO, L. A. ; LAGO, E. P. . Cattle intoxication by Thiloa glaucocarpa (Combretaceae). In: XXIII World Buiatrics Congress, 2004, Québec. Poster Abstracts, 2004.

8.
LAGO, E. P.; PIRES, A. V. ; LAGO, L. A. ; M. M. Melo ; SUSIN, I. ; FARIA, V. P. . Incidência de cetose em vacas de um rebanho leiteiro de alta produção. In: XVIII Encontro de Pesquisa da Escola de Veterinária da UFMG - I Encontro de Ensino e Extensão, 2003, Belo Horizonte, MG. XVIII Encontro de Pesquisa da Escola de Veterinária da UFMG, 2003.

9.
LAGO, E. P.; COSTA, A. P. D. ; PIRES, A. V. ; SUSIN, I. ; FARIA, V. P. ; LAGO, L. A. ; BELEM, P. A. D. . Teores plasmáticos de glicose, beta-hidroxibutirato, ácidosgraxos nõ esterificados e aspartato aminotransferase em vacas leiteiras de alta produção no período pós-parto.. In: XXVIII Congresso Brasileiro de Medicina Veterinária, 2001, Salvador. Anais do XXVIII Congresso Brasileiro de Medicina Veterinária. Salvador, 2001. p. 116-116.

10.
LAGO, E. P.; COSTA, A. P. D. ; PIRES, A. V. ; SUSIN, I. ; FARIA, V. P. ; LAGO, L. A. ; BELEM, P. A. D. . Influência da perda de peso corporal no inicio da lactação sobre o metabolismo de vacas da raça holandesa.. In: XXVIII Congresso Brasileiro de Medicina Veterinária., 2001, Salvador. Anais do XXVIII Congresso Brasileiro de Medicina Veterinária.. Salvador, 2001. p. 116-117.

Apresentações de Trabalho

1.
MELO NETO, G. B. ; LAGO, E. P. ; MACEDO, D. M. ; MONTEIRO, L. C. ; FREIRE, A. H. ; SANTOS, M. M. ; SOUTO, P. C. ; DANTAS, F. T. R. ; GUIMARAES, J. A. . Mastite em caprinos: aspectos clínicos, laboratoriais e terapêuticos de animais atendidos no Hospital Veterinário da Universidade Federal de Viçosa. 2016. (Apresentação de Trabalho/Simpósio).

2.
SANTOS, M. M. ; LAGO, E. P. ; MELO NETO, G. B. ; MACEDO, D. M. ; MONTEIRO, L. C. ; SOUTO, P. C. ; FREIRE, A. H. . Toxemia da prenhez em cabra: relato de caso. 2016. (Apresentação de Trabalho/Simpósio).

3.

SOUTO, P. C. ; LAGO, E. P. ; SANTOS, M. M. ; MACEDO, D. M. ; MONTEIRO, L. C. ; FREIRE, A. H. ; MELO NETO, G. B. ; FONSECA, L. A. ; DANTAS, F. T. R. ; GUIMARAES, J. A. . Diagnóstico da raiva in vivo em equídeos e ruminantes através da citologia da superfície ocular (imprint de córnea). 2016. (Apresentação de Trabalho/Simpósio).

4.
FERREIRA, H. C. C. ; LEITE, R. A. ; PINTO, J. O. ; CAMPOS, M. G. ; ROSADO, N. C. L. ; MAGALHAES JUNIOR, M. J. ; SAMPAIO, N. ; LAGO, E. P. ; ALMEIDA, M. R. ; Silva Júnior, A . Eliminação viral e resposta imune de bovinos experimentalmente infectados por bovine herpesvírus 1. 2014. (Apresentação de Trabalho/Simpósio).

5.
GUERRA, S. T. ; GUIMARAES, J. A. ; RIBEIRO, B. M. ; DUARTE, M. A. ; PINTO, J. O. ; LAGO, E. P. . Úlcera de abomaso em bezerro: relato de caso. 2014. (Apresentação de Trabalho/ Simpósio).

6.
MARTINS, H. L. ; HAGE, M. C. F. N. S. ; LAGO, E. P. ; EDLER, G. E. C. ; ALVES, S. R. ; MENESES, R. M. . Ultrassonografia torácica em bovino com distúrbios respiratórios e cardíacos. 2010. (Apresentação de Trabalho/Simpósio).

7.
FERREIRA, H. C. C. ; LAGO, E. P. ; BELEM, P. A. D. ; DONNER, A. C. ; SILVEIRA, C. O. ; LAGO, L. A. ; BAPTISTA FILHO, L. C. F. ; ANDRADE, R. B. . Ruptura de tendão pré-púbico em vaca como consequência à hidropsia por hidroalantóoide. Relato de caso. 2009. (Apresentação de Trabalho/Simpósio).

8.
Meylling Mayara Linhares Magalhães, Larissa Berdine Gomes De Jesus, Gabriel Soares De Freitas, Gabriela Souza Bem, Vivian Alves Piuzana Barbosa, Milena de Paula Rebello, Marcos Alexandre Nunes Da Silva, Ernani Paulino Do Lago, José Júnior França De Barros, Debora Ferreira Barreto Vieira, Alex Pauvolid-Corrêa. Varíola bovina por vírus vaccínia em gado de leite em Viçosa, Minas Gerais. Apresentação de Trabalho no 59º MEDTROP - Congresso da Sociedade Brasileira de Medicina Tropical. 2024.

Bancas

Participação em bancas de trabalhos de conclusão
Mestrado

1.
Silva Júnior, A; LAGO, E. P.; Oliveira, L L; Araújo, J V. Participação em banca de Hanna Carolina Campos Ferreira. HERPESVÍRUS BOVINO (BoHV-1 E/OU BoHV-5): VIAS DE ELIMINAÇÃO,

VIREMIA E SOROLOGIA DE VACAS LEITEIRAS NATURALMENTE INFECTADAS. 2012. Dissertação (Mestrado em Medicina Veterinária) - Universidade Federal de Viçosa.

2.
RIBEIRO FILHO, J. D.; BARIONI, G.; LAGO, E. P.; BORGES, A. P. B.; GUIMARAES, J. D.. Participação em banca de Marcel Ferreira Bastos Avanza. Solução eletrolítica associada ou não à glicose, maltodextrina e sulfato de magnésio administrada por via enteral em equinos hígidos e desidratados experimentalmente. 2007. Dissertação (Mestrado em Medicina Veterinária) - Universidade Federal de Viçosa.

Teses de doutorado

1.
CAMPOS, J. M. S.; VALADARES FILHO, S. C.; DETMANN, E.; RENNO, L. N.; LAGO, E. P.. Participação em banca de José Carlos Peixoto Modesto da Silva. Níveis de concentrado e de proteína não degradável no rúmen na dieta de vacas em lactação. 2009. Tese (Doutorado em Programa de Pós-gradução em Zootecnia) - Universidade Federal de Viçosa.

Monografias de cursos de aperfeiçoamento/especialização

1.
LAGO, E. P.; Nero, L A; FERREIRA, H. C. C.. Participação em banca de Gertrud Elisa Campos Edler. Ocorrência de cetose em rebanhos leiteiros na microrregião de Viçosa - MG e associação da condição corporal ao parto à composição físico-química do leite no início da lactação. 2012. Monografia (Aperfeiçoamento/Especialização em Clinica e Cirurgia Veterinaria) - Universidade Federal de Viçosa.

2.
LAGO, E. P.; BELEM, P. A. D.; PINTO, J. O.. Participação em banca de Hanna Carolina Campos Ferreira. Aspectos relacionados ao comportamento de vacas leiteiras, com ênfase no sistema de estabulação livre (free-stall). 2010. Monografia (Aperfeiçoamento/Especialização em Clinica e Cirurgia Veterinaria) - Universidade Federal de Viçosa.

3.
LAGO, E. P.. Participação em banca de Marcel Monteze de Almeida. Avaliação do equilíbrio e crescimento do casco de equinos suplementados com biotina e suas relações com os teores de zinco. 2008. Monografia (Aperfeiçoamento/Especialização em Medicina Veterinária) - Universidade Federal de Viçosa.

Participação em bancas de comissões julgadoras
Concurso público

1.
Marlene Isabel Vargas Viloria; BELEM, P. A. D.; LAGO, E. P.; RIBEIRO FILHO, J. D.; Luiz Gonzaga Pompermayer. Concurso Público para Professor Substituto - Clínica Médica Veterinária de Grandes Animais. 2009. Universidade Federal de Viçosa.

Avaliação de cursos

1.
LAGO, E. P.; Brunna Patrícia Almeida da Fonseca; Lukyia Silva Campos Favarato. Presidência da Comissão Examinadora de Seleção de Candidatos ao Curso de Pós-Graduação "Lato Sensu" de Residência em Medicina Veterinária. 2011. Universidade Federal de Viçosa.

Outras participações

1.
LAGO, E. P.. Membro-efetivo da Subcomissão de Biodiversidade. 2011. Universidade Federal de Viçosa.

2.
LAGO, E. P.. Membro-revisor de trabalhos do Conselho Federal de Medicina Veterinária. 2010. Conselho Federal de Medicina Veterinária.

3.
LAGO, E. P.. Membro-suplente da Subcomissão de Gestão de Resíduos da COMAM. 2009. Universidade Federal de Viçosa.

4.
GUIMARAES, J. D.; HAGE, M. C. F. N. S.; Tarcízio Antônio Rego de Paula; Brunna Patrícia Almeida da Fonseca; LAGO, E. P.. Comissão de Extensão do Departamento de Veterinária. 2009. Universidade Federal de Viçosa.

5.
Marlene Isabel Vargas Viloria; LAGO, E. P.; Maria Aparecida Scatamburlo Moreira. Comissão de Avaliação do Estágio Probatório da professora Brunna Fonseca. 2009. Universidade Federal de Viçosa.

6.
ERNANI PAULINO DO LAGO. Membro da Comissão Coordenadora do Curso de Medicina Veterinária da Universidade Federal de Viçosa com mandato de quatro anos, a partir de 29/08/2025.

Eventos

Participação em eventos, congressos, exposições e feiras

1.
Desafios no diagnóstico da leptospirose animal. 2016. (Seminário).

2.
Plano de Assistência Técnica do Projeto Suçuarana na Serra do Brigadeiro.Principais Doenças de Bovinos da região do Parque Estadual da Serra do Brigadeiro. 2011. (Encontro).

3.
Formação Continuada de Professores na Universidade Federal de Viçosa. 2009. (Outra).

4.
II Unileite - Univiçosa.Claudicação em Rebanho Leiteiro. 2009. (Outra).

5.
78ª Semana do Fazendeiro. Principais Doenças de Bovinos Leiteiros. 2007. (Congresso).

6.
14ª Semana Acadêmica do curso de Medicina Veterinária.Técnicas de cuidados para caprinos recém-nascidos. 2006. (Encontro).

7.
II Simpósio Mineiro de Buiatria. 2005. (Simpósio).

8.
I Simpósio Latino-Americano de Plantas Tóxicas.Triagem fitoquímica preliminar da Thiloa Gloucocarpa Eichl. 2004. (Seminário).

9.
I Simpósio Latino-Americano de Plantas Tóxicas.Estudo hematológico, bioquímico sérico e anatomo-histopatológico experimental de coelhos tratados com Thiloa Glaucocarpa Eichl. 2004. (Simpósio).

10.
I Simpósio Mineiro de Buiatria. 2004. (Simpósio).

11.

Tópicos Especiais em Doenças Parasitárias. 2003. (Outra).

Orientações

Orientações e supervisões concluídas
Dissertação de mestrado

1.
Hanna Carolina Campos Ferreira. HERPESVÍRUS BOVINO (BoHV-1 E/OU BoHV-5): VIAS DE ELIMINAÇÃO, VIREMIA E SOROLOGIA DE VACAS LEITEIRAS NATURALMENTE INFECTADAS. 2012. Dissertação (Mestrado em Medicina Veterinária) - Universidade Federal de Viçosa, . Coorientador: Ernani Paulino do Lago.

Monografia de conclusão de curso de aperfeiçoamento/especialização

1.
Gertrud Elisa Campos Edler. Ocorrência de cetose em rebanhos leiteiros na microrregião de Viçosa - MG e associação da condição corporal ao parto à composição físico-química do leite no início da lactação. 2012. Monografia. (Aperfeiçoamento/Especialização em Clinica e Cirurgia Veterinaria) - Universidade Federal de Viçosa. Orientador: Ernani Paulino do Lago.

2.
Hanna Carolina Campos Ferreira. Aspectos relacionados ao comportamento de vacas leiteiras, com ênfase no sistema de estabulação livre (free-stall). 2009. Monografia. (Aperfeiçoamento/ Especialização em Medicina Veterinária) - Universidade Federal de Viçosa. Orientador: Ernani Paulino do Lago.

3.
Letícia Souza Silva Andrade. Encefalopatia Espongiforme Bovina. 2021. TCC. Pós-graduação lato sensu em “Defesa Sanitária e Tecnologia e Inspeção de Produtos de Origem Animal com Ênfase em Legislação” oferecido pela UNIMAIS – FACULDADE EDUCAMAIS, com o apoio do Ifope Soluções e Treinamentos Ltda – ME, na modalidade EAD. Coorientador: Ernani Paulino do Lago.

Outras informações relevantes
- Participação da comissão condutora dos trabalhos do processo eleitoral para indicação da nova chefia do Departamento de Veterinária da Universidade Federal de Viçosa - 2007 - Responsável pelo setor de Clínica e Cirurgia de Grandes Animais do Hospital Veterinário do Departamento de Veterinária da Universidade Federal de Viçosa - a partir de 2010

March 6th, 2026

marcelo@hmposto.com.br
+55 (77) 99941-6892

To Whom It May Concern,

I am Marcelo Andrade Botelho Mesquita, and I currently serve as the Administrative Director and Managing Partner at HM Posto de Combustível LTDA. My professional background is rooted in Business Administration, having earned my Bachelor's degree from the State University of Montes Claros (Universidade Estadual de Montes Claros – UNIMONTES) and a Master's degree in Administration from the Federal University of Lavras (Universidade Federal de Lavras – UFLA). Throughout my career, I have also contributed to academia as a substitute professor at the University of the State of Bahia (Universidade do Estado da Bahia – UNEB) and as a designated professor at UNIMONTES, where I taught courses in Human Resources and Marketing. My experience in both the private sector and higher education has provided me with a comprehensive perspective on professional excellence and the importance of specialized technical leadership in sectors vital to the economy.

I became professionally acquainted with Ms. Hanna Carolina Campos Ferreira's work when I recommended her to teach in the Veterinary Medicine program at the Guanambi Faculty (Faculdade Guanambi). At that time, I observed her professional reputation and the high regard in which she was held within the veterinary community. Since then, I have followed her career progression, particularly her role as a federal official at the Ministry of Agriculture and Pecuária (Ministério da Agricultura e Pecuária – MAPA). In this capacity, Ms. Campos Ferreira performs critical functions related to the inspection and oversight of products of animal origin, ensuring that food safety standards are strictly maintained for public consumption.

One of the most significant aspects of Ms. Campos Ferreira's professional trajectory is her ability to bridge the gap between academic research and practical field application. Her doctoral research included a program at the University of Minnesota in the United States, an initiative that fostered a vital partnership between Brazilian and American institutions. This international collaboration allowed her to exchange technical methodologies and enhance her expertise in bovine diseases. By unifying clinical field observations with advanced laboratory analysis, Ms. Campos Ferreira has demonstrated a unique capacity to develop prevention strategies for animal diseases that are grounded in real-world data.

The veterinary medicine sector relies heavily on proactive professionals who can effectively prevent zoonoses, diseases that can be transmitted

from animals to humans. Ms. Campos Ferreira's technical competence in sanitary inspection and specialized knowledge of infectious diseases are essential to maintaining the integrity of the food supply chain. Her work directly impacts public health by mitigating biological risks before products reach the consumer. Consequently, her professional maturity and her history of successful international technical exchanges suggest that she possesses the necessary qualifications to continue advancing animal health and food safety standards. Based on her demonstrated expertise and her commitment to professional excellence, I fully support her continued professional development and her future contributions to the field.

Sincerely,

Marcelo Andrade Botelho Mesquita
Managing Partner
HM Posto de Combustível LTDA.



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Marcelo Andrade Botelho Mesquita

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ID Lattes: **6222390377541919**
Last updated on 10/14/2024

Holds a Bachelor's Degree in Business Administration from the State University of Montes Claros (2004) and a Master's Degree in Business Administration from the Federal University of Lavras (2007). **(Text provided by the author)**

Identification

Name

Marcelo Andrade Botelho Mesquita

Name in bibliographic citations

MESQUITA, M. A. B.

Lattes iD

http://lattes.cnpq.br/6222390377541919

Country of Nationality

Brazil

Address

Professional Address

Sociedade Comercial Mercolub LTDA.
Rua Deocreciano Andrade, 391
São Francisco
46430000 - Guanambi, Bahia - Brazil
Phone: (77) 34513499

Academic background/degree

2006 - 2007

Master's Degree in Business Administration Federal University of Lavras, UFLA, Brazil. Title: Relationships between attributes, benefits, and values in the purchase decision of premium gasoline , Year of completion: 2007.
Advisor: Ricardo de Souza Sette.

Fellow: National Council for Scientific and Technological Development, CNPq, Brazil.
Keywords: Means-End Chain Theory; Consumer behavior; Premium gasoline; Laddering.
Major area: Applied Social Sciences

2001 - 2004

Bachelor's Degree in Business Administration.
State University of Montes Claros, UNIMONTES, Brazil.
Title: Performance evaluation as a factor for human development in the company Sociedade Comercial Mercolub Ltda.
Advisor: Maria de Fátima Pinho Godinho.

Professional Experience

State University of Bahia, UNEB, Brazil.

Institutional Affiliation

2009 - 2010

Employment Type: Temporary Contract, Job Title: Adjunct Professor, Workload: 20 hours

Other Information

Professor of Marketing I, Research Seminar, and Operations Research subjects in the 4th, 7th, and 8th Semesters, respectively, of the Business Administration Program.

State University of Montes Claros, UNIMONTES, Brazil.

Institutional Affiliation

2008 - 2008

Employment Type: Public Servant, Job Title: Designated professor, Workload: 40 hours

Other Information

Worked as Professor of the Human Resources subject in the 5th Semester of the Business Administration and Accounting Sciences programs at the aforementioned University.

Sociedade Comercial Mercolub LTDA, MERCOLUB, Brazil.

Institutional Affiliation

2001 - 2019

Employment Type: Partner, Job Title: Administrative Director, Workload: 44 hours

HM POSTO DE COMBUSTIVEL LTDA, HM POSTO, Brazil.

Institutional Affiliation

2019 - Present

Employment Type: MANAGING PARTNER, Job Title: MANAGING PARTNER, Workload: 60 hours, Work Schedule: Full-time.

Areas of expertise

1.

Major field: Applied Social Sciences / Field: Administration / Subfield: Business Administration / Specialty: Marketing.

2.

Major field: Applied Social Sciences / Field: Administration / Subfield: Business Administration / Specialty: Operations Research.

3.

Major field: Applied Social Sciences / Field: Administration / Subfield: Business Administration / Specialty: Human Resources Management.

Languages

English

Understands Well, Speaks Well, Reads Well, Writes Well.

Production

Bibliographic production

Full articles published in journals

Order By

Chronological order

1.

MESQUITA, M. A. B.. Values of the additive: consumer behavior of premium gasoline from the perspective of the means-end chains theory. GEPROS. Production, Operations and Systems Management, v. 17, pp. 603-616, 2010.

2.

MESQUITA, M. A. B. ; MELO, F. D. M. . Attitudes of successful entrepreneurs: a case study at the 72nd SEBRAE Entrepreneur Fair. FACEF Research, v. 10, pp. 88-101, 2007.

Full papers published in conference proceedings

1.

ROLIM, R. C. ; OLIVEIRA, M. D. ; SILVA, A. T. B. da ; **MESQUITA, M. A. B.** Satisfaction with the undergraduate program: a study among business administration students at the Federal University of Lavras. In: National Meeting of the National Association of Graduate Studies and Research in Administration, 2007, Rio de Janeiro. National Meeting of the National Association of Graduate Studies and Research in Business Administration, 2007. v. 31.

Abstracts published in conference proceedings

1.

MESQUITA, M. A. B.. Profile of successful entrepreneurs: a study with participants of the 72nd SEBRAE Entrepreneur Fair. In: 2nd Forum of Research, Teaching, Extension and Management, 2008, Montes Claros. 2nd University and Diversity Forum, 2008.

Examining Committees

Participation in examining committees

Undergraduate Thesis

1.

WANDENKOLK, A. C. L.; CORREIA, I. V.; BRASILEIRO, R. L.; **MESQUITA, M. A. B.**. Participation in the examining committee of Ana Carolina Lima Wandenkolk. Information systems for micro and small enterprises. 2010. Undergraduate Thesis (Bachelor's Degree in Business Administration) - State University of Bahia.

2.

AZEVEDO, C. S. F.; CASTRO, M. R.; CUNHA, R. S.; **MESQUITA, M. A. B.**. Participation in the examining committee of Celeida Silva Fernandes de Azevedo. Self-service areas of bank branches in the municipality of Caetité: Client satisfaction levels. 2010. Undergraduate Thesis (Bachelor's in Business Administration) - State University of Bahia.

Advising

Concluded academic advising and supervision

Undergraduate Thesis

1.

MOREIRA, A. F.; CARVALHO, G. S.; RODRIGUES, M. A.. Recruitment and selection in the footwear retail sector of Guanambi. 2010. Undergraduate Thesis (Bachelor's in Business Administration) - State University of Bahia. Advisor: Marcelo Andrade Botelho Mesquita.

Other relevant information

Cultural Exchange. Youth Exchange Program of Rotary International. South Africa. Period: 01/14/1999 to 01/12/2000.

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I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 28, 2026.



Marcelo Andrade Botelho Mesquita

Endereço para acessar este CV: http://lattes.cnpq.br/6222390377541919
ID Lattes: **6222390377541919**
Ultima atualização do currículo em 14/10/2024

Possui graduação em Administração pela Universidade Estadual de Montes Claros (2004) e Mestrado em Administração pela Universidade Federal de Lavras (2007). **(Texto informado pelo autor)**

Identificação

Nome

Marcelo Andrade Botelho Mesquita

Nome em citações bibliográficas

MESQUITA, M. A. B.

Lattes iD

http://lattes.cnpq.br/6222390377541919

País de Nacionalidade

Brasil

Endereço

Endereço Profissional

Sociedade Comercial Mercolub LTDA.
Rua Deocreciano Andrade, 391
São Francisco
46430000 - Guanambi, BA - Brasil
Telefone: (77) 34513499

Formação acadêmica/titulação

2006 - 2007

Mestrado em Administração.
Universidade Federal de Lavras, UFLA, Brasil.
Título: Relações entre atributos, benefícios e valores na decisão de compra de gasolina aditivada , Ano de Obtenção: 2007.
Orientador: Ricardo de Souza Sette.

Bolsista do(a): Conselho Nacional de Desenvolvimento Científico e Tecnológico, CNPq, Brasil.
Palavras-chave: Teoria da Cadeia de Meios e Fins; Comportamento do consumidor; Gasolina aditivada; Laddering.
Grande área: Ciências Sociais Aplicadas

2001 - 2004

Graduação em Administração.
Universidade Estadual de Montes Claros, UNIMONTES, Brasil.
Título: Avaliação de desempenho como fator de desenvolvimento humano na empresa Sociedade Comercial Mercolub Ltda..
Orientador: Maria de Fátima Pinho Godinho.

Atuação Profissional

Universidade do Estado da Bahia, UNEB, Brasil.

Vínculo institucional

2009 - 2010

Vínculo: Contrato Temporário, Enquadramento Funcional: Professor Substituto, Carga horária: 20

Outras informações

Professor das disciplinas Marketing I, Seminário de Pesquisa e Pesquisa Operacional respectivamente no 4º, 7º e 8º Período do Curso de Administração de Empresas.

Universidade Estadual de Montes Claros, UNIMONTES, Brasil.

Vínculo institucional

2008 - 2008

Vínculo: Servidor Público, Enquadramento Funcional: Professor designado, Carga horária: 40

Outras informações

Atuou como professor da Disciplina Recursos Humanos no 5º período dos cursos de Administração e Ciências Contábeis da referida Universidade.

Sociedade Comercial Mercolub LTDA, MERCOLUB, Brasil.

Vínculo institucional

2001 - 2019

Vínculo: Sócio, Enquadramento Funcional: Diretoria Administrativa, Carga horária: 44

HM POSTO DE COMBUSTIVEL LTDA, HM POSTO, Brasil.

Vínculo institucional

2019 - Atual

Vínculo: SOCIO ADMINISTRADOR, Enquadramento Funcional: SOCIO ADMINISTRADOR, Carga horária: 60, Regime: Dedicação exclusiva.

Áreas de atuação

1.

Grande área: Ciências Sociais Aplicadas / Área: Administração / Subárea: Administração de Empresas/Especialidade: Mercadologia.

2.

Grande área: Ciências Sociais Aplicadas / Área: Administração / Subárea: Administração de Empresas/Especialidade: Pesquisa Operacional.

3.

Grande área: Ciências Sociais Aplicadas / Área: Administração / Subárea: Administração de Empresas/Especialidade: Administração de Recursos Humanos.

Idiomas

Inglês

Compreende Bem, Fala Bem, Lê Bem, Escreve Bem.

Produções

Produção bibliográfica

Artigos completos publicados em periódicos

Ordenar por

Ordem Cronológica

1.

MESQUITA, M. A. B.. Valores do aditivo: o comportamento do consumidor de gasolina aditivada na perspectiva da teoria das cadeias meios-fins. GEPROS. Gestão da Produção, Operações e Sistemas, v. 17, p. 603-616, 2010.

2.

MESQUITA, M. A. B.; MELO, F. D. M. . Atitudes de empreendedores de sucesso: um estudo de caso na 72 feira do empreendedor do SEBRAE. FACEF Pesquisa, v. 10, p. 88-101, 2007.

Trabalhos completos publicados em anais de congressos

1.

ROLIM, R. C. ; OLIVEIRA, M. D. ; SILVA, A. T B. da ; **MESQUITA, M. A. B.** . Satisfação com o curso de graduação: um estudo junto aos estudantes de administração da Universidade Federal de Lavras. In: Encontro Nacional da Associação Nacional de Pós-graduação e Pesquisa em Administração, 2007, Rio de Janeiro. Encontro Nacional da Associação Nacional de Pós-graduação e Pesquisa em Administração, 2007. v. xxxi.

Resumos expandidos publicados em anais de congressos

1.

MESQUITA, M. A. B.. Perfil de empreendedores de sucesso: um estudo com participantes da 72ª Feira do Empreendedor do SEBRAE. In: 2º Fórum de Pesquisa, Ensino, Extensão e Gestão, 2008, Montes Claros. 2º Fórum Universidade e Diversidade, 2008.

Bancas

Participação em bancas de trabalhos de conclusão

Trabalhos de conclusão de curso de graduação

1.

WANDENKOLK, A. C. L.; CORREIA, I. V.; BRASILEIRO, R. L.; **MESQUITA, M. A. B.**. Participação em banca de Ana Carolina Lima Wandenkolk.Os sistemas de informação para as micro e pequenas empresas. 2010. Trabalho de Conclusão de Curso (Graduação em Administração) - Universidade do Estado da Bahia.

2.

AZEVEDO, C. S. F.; CASTRO, M. R.; CUNHA, R. S.; **MESQUITA, M. A. B.**. Participação em banca de Celeida Silva Fernandes de Azevedo.Salas de Auto-atendimento das agências bancárias do município de Caetité: Níveis de Satisfação dos clientes. 2010. Trabalho de Conclusão de Curso (Graduação em Administração) - Universidade do Estado da Bahia.

Orientações

Orientações e supervisões concluídas

Trabalho de conclusão de curso de graduação

1.

MOREIRA, A. F.; CARVALHO, G. S.; RODRIGUES, M. A.. Recrutamento e seleção no comércio calçadista de Guanambi. 2010. Trabalho de Conclusão de Curso. (Graduação em Administração) - Universidade do Estado da Bahia. Orientador: Marcelo Andrade Botelho Mesquita.

Outras informações relevantes

Intercâmbio Cultural Programa de Intercâmbio de Jovens do Rotary Internacional. África da Sul. Período: 14/01/1999 a 12/01 de 2000.

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SFA-MG	MG	STATE	PERMANENT ACTIVE	UTRAMCL-MG	MG

EMPLOYEE NAME	SIAPE REGISTRATION NO.	UNIQUE ID
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

POSITION/JOB	CLASS	REFERENCE/GRADE/LEVEL	ROLE
FEDERAL AGRICULTURAL TAX AUDITOR	C	III	FEX 0102 **

DEPENDENT – F.A.	DEPENDENT – TAX INCOME	A.T.S.(%)	CPF	PAYMENT MONTH/YEAR
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SALARY PAYMENT ACCOUNT			ACCOUNT FOR OTHER TRANSACTIONS		
BANK	BRANCH	SALARY ACCOUNT	BANK	BRANCH	ACCOUNT
001	009237	0000000578819	001	009237	0000000578819

RETIREMENT PAYMENT PARAMETERS

LEGAL BASIS	GRUP	POSITION	CLASS	REFERENCE/GRADE/LEVEL
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TYPE	DESCRIPTION	PERIOD	AMOUNT
EARNINGS	FOOD ALLOWANCE		1,175.00
	SUBSIDY (AT)		19,475.11
	PER CAPITA – SUPPLEMENTARY HEALTH INSURANCE		139.66
	FCE – EXECUTIVE COMMISSIONED ROLE		664.20
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Translator's note:
UPAG - Paying Unit
SFA-MG - Federal Superintendence of Agriculture in Minas Gerais.
UORG - Organizational Unit
UTRAMCL-MG - Regional Technical Unit of Agriculture, Livestock, and Supply – Minas Gerais
SIAPE - Integrated Human Resources Administration System
F.A. - FAMILY ALLOWANCE
ANFFASI - National Association of Federal Agricultural Auditors
FGTS - Severance Indemnity Fund
Sigepe - Personnel Management System of the Federal Executive Branch
SERPRO - Federal Data Processing Service

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 17, 2026

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SFA-MG	MG	EST	ATIVO PERMANENTE	UTRAMCL-MG	MG

NOME DO SERVIDOR	MAT. SIAPE	IDENT. ÚNICA
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

CARGO/EMPREGO	CLASSE	REF/PADRAO/NIVEL	FUNÇÃO
AUDITOR FISCAL FEDERAL AGROPEC	C	III	FEX 0102 **

DEPENDENTE S.F.	DEPENDENTE IR	A.T.S.(%)	CPF	MÊS/ANO PAGAMENTO
00	00	00	06741091637	DEZ 2025

CONTA PARA RECEBIMENTO DE SALÁRIO			CONTA PARA OUTRAS OPERAÇÕES		
BANCO	AGÊNCIA	CONTA SALÁRIO	BANCO	AGÊNCIA	CONTA
001	009237	0000000578819	001	009237	0000000578819

PARÂMETROS PARA PAGAMENTO DE APOSENTADORIA

FUNDAMENTO LEGAL	GRUPO	CARGO	CLASSE	REF/PAD/NIV
**********	***	***	*	***

TIPO	DISCRIMINAÇÃO	PRAZO	VALOR
RENDIMENTOS	AUXÍLIO-ALIMENTACÃO		1.175,00
	SUBSIDIO AT		19.475,11
	PER CAPITA - SAUDE SUPLEMENTAR		139,66
	FCE-FUNÇÃO COMISSIONADA EXECUT		664,20
DESCONTOS	MENSALIDADE SINDICAL - ANFFASI		201,39
	CONT. PLANO SEGURIDADE SOCIAL		951,62
	IMPOSTO DE RENDA RETIDO FONTE		4.367,88

Eduque-se financeiramente: Portal do Servidor/Gestão de Pessoas/Capacitação/Educação Financeira.

BASE CÁLCULO DO TETO	BASE CÁLCULO DO I.R.	DEPÓSITO FGTS	BRUTO	DESCONTO	LÍQUIDO
0,00	19.187,69	0,00	21.453,97	5.520,89	15.933,08

Autenticação Nº F2EC.AFCF.7E37.0BF1.E59C.8F65

Data de emissão: 28/05/2026 19:24:19

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To clarify any questions about your payment, contact your paying unit immediately.

PAYSLIP– REGULAR PAYROLL

MINISTRY OF AGRICULTURE AND LIVESTOCK

UPAG ACRONYM	STATE	LEGAL REGISTRATION	EMPLOYMENT STATUS	UORG ACRONYM	STATE
SFA-MG	MG	STATE	PERMANENT ACTIVE	UTRAMCL-MG	MG

EMPLOYEE NAME	SIAPE REGISTRATION NO.	UNIQUE ID
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

POSITION/JOB	CLASS	REFERENCE/GRADE/LEVEL	ROLE
FEDERAL AGRICULTURAL TAX AUDITOR	C	III	FEX 0102 **

DEPENDENT – F.A.	DEPENDENT – TAX INCOME	A.T.S.(%)	CPF	PAYMENT MONTH/YEAR
00	00	00	06741091637	JAN 2026

SALARY PAYMENT ACCOUNT			ACCOUNT FOR OTHER TRANSACTIONS		
BANK	BRANCH	SALARY ACCOUNT	BANK	BRANCH	ACCOUNT
001	009237	0000000578819	001	009237	0000000578819

RETIREMENT PAYMENT PARAMETERS

LEGAL BASIS	GRUP	POSITION	CLASS	REFERENCE/GRADE/LEVEL
**********	***	***	*	***

TYPE	DESCRIPTION	PERIOD	AMOUNT
EARNINGS	FOOD ALLOWANCE		1,175.00
	SUBSIDY (AT)		19,475.11
	PER CAPITA – SUPPLEMENTARY HEALTH INSURANCE		139.66
	FCE – EXECUTIVE COMMISSIONED ROLE		723.98
DEDUCTIONS	UNION MEMBERSHIP FEE – ANFFASI		201.99
	SOCIAL SECURITY CONTRIBUTION		988.07
	INCOME TAX WITHHELD AT SOURCE		4,374.30

Educate yourself financially: Civil Servant Portal / People Management / Training / Financial Education.

PAY CAP CALCULATION BASE	INCOME TAX CALCULATION BASIS	FGTS DEPOSIT	GROSS	DEDUCTIONS	NET
0.00	19,211.02	0.00	21,513.75	5.564.36	15,949.39

Authentication No. 310E.D1B5.1EEE.F512.4D01.8A7C

Date of Issue: 02/02/2026 12:16:54 AM

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Translator's note:
UPAG - Paying Unit
SFA-MG - Federal Superintendence of Agriculture in Minas Gerais.
UORG - Organizational Unit
UTRAMCL-MG - Regional Technical Unit of Agriculture, Livestock, and Supply – Minas Gerais
SIAPE - Integrated Human Resources Administration System
F.A. - FAMILY ALLOWANCE
ANFFASI - National Association of Federal Agricultural Auditors
FGTS - Severance Indemnity Fund
Sigepe - Personnel Management System of the Federal Executive Branch
SERPRO - Federal Data Processing Service

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 17, 2026

Para esclarecer dúvidas sobre seu pagamento, procure imediatamente sua unidade pagadora.

COMPROVANTE DE RENDIMENTOS - FOLHA NORMAL

MINISTERIO DA AGRICULTURA E PECUARIA

SIGLA DA UPAG	UF	REG. JURÍDICO	SITUAÇÃO FUNCIONAL	SIGLA DA UORG	UF
SFA-MG	MG	EST	ATIVO PERMANENTE	UTRAMCL-MG	MG

NOME DO SERVIDOR	MAT. SIAPE	IDENT. ÚNICA
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

CARGO/EMPREGO	CLASSE	REF/PADRAO/NIVEL	FUNÇÃO
AUDITOR FISCAL FEDERAL AGROPEC	C	III	FEX 0102 **

DEPENDENTE S.F.	DEPENDENTE IR	A.T.S.(%)	CPF	MÊS/ANO PAGAMENTO
00	00	00	06741091637	JAN 2026

CONTA PARA RECEBIMENTO DE SALÁRIO			CONTA PARA OUTRAS OPERAÇÕES		
BANCO	AGÊNCIA	CONTA SALÁRIO	BANCO	AGÊNCIA	CONTA
001	009237	0000000578819	001	009237	0000000578819

PARÂMETROS PARA PAGAMENTO DE APOSENTADORIA

FUNDAMENTO LEGAL	GRUPO	CARGO	CLASSE	REF/PAD/NIV
**********	***	***	*	***

TIPO	DISCRIMINAÇÃO	PRAZO	VALOR
RENDIMENTOS	AUXÍLIO-ALIMENTACÃO		1.175,00
	SUBSIDIO AT		19.475,11
	PER CAPITA - SAUDE SUPLEMENTAR		139,66
	FCE-FUNÇÃO COMISSIONADA EXECUT		723,98
DESCONTOS	MENSALIDADE SINDICAL - ANFFASI		201,99
	CONT. PLANO SEGURIDADE SOCIAL		988,07
	IMPOSTO DE RENDA RETIDO FONTE		4.374,30

Eduque-se financeiramente: Portal do Servidor/Gestão de Pessoas/Capacitação/Educação Financeira.

BASE CÁLCULO DO TETO	BASE CÁLCULO DO I.R.	DEPÓSITO FGTS	BRUTO	DESCONTO	LÍQUIDO
0,00	19.211,02	0,00	21.513,75	5.564,36	15.949,39

Autenticação Nº 7648.9431.81A8.C674.C5DD.B5A9

Data de emissão: 02/02/2026 00:16:54

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To clarify any questions about your payment, contact your paying unit immediately.

PAYSLIP– REGULAR PAYROLL

MINISTRY OF AGRICULTURE AND LIVESTOCK

UPAG ACRONYM	STATE	LEGAL REGISTRATION	EMPLOYMENT STATUS	UORG ACRONYM	STATE
SFA-MG	MG	STATE	PERMANENT ACTIVE	UTRAMCL-MG	MG

EMPLOYEE NAME	SIAPE REGISTRATION NO.	UNIQUE ID
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

POSITION/JOB	CLASS	REFERENCE/GRADE/LEVEL	ROLE
FEDERAL AGRICULTURAL TAX AUDITOR	C	III	FEX 0102 **

DEPENDENT – F.A.	DEPENDENT – TAX INCOME	A.T.S.(%)	CPF	PAYMENT MONTH/YEAR
00	00	00	06741091637	FEB 2026

SALARY PAYMENT ACCOUNT			ACCOUNT FOR OTHER TRANSACTIONS		
BANK	BRANCH	SALARY ACCOUNT	BANK	BRANCH	ACCOUNT
001	009237	0000000578819	001	009237	0000000578819

RETIREMENT PAYMENT PARAMETERS

LEGAL BASIS	GRUP	POSITION	CLASS	REFERENCE/GRADE/LEVEL
**********	***	***	*	***

TYPE	DESCRIPTION	PERIOD	AMOUNT
EARNINGS	FOOD ALLOWANCE		1,175.00
	SUBSIDY (AT)		19,475.11
	PER CAPITA – SUPPLEMENTARY HEALTH INSURANCE		139.66
	FCE – EXECUTIVE COMMISSIONED ROLE		723.98
DEDUCTIONS	UNION MEMBERSHIP FEE – ANFFASI		201.99
	SOCIAL SECURITY CONTRIBUTION		988.07
	INCOME TAX WITHHELD AT SOURCE		4,374.30

Educate yourself financially: Civil Servant Portal / People Management / Training / Financial Education.

PAY CAP CALCULATION BASE	INCOME TAX CALCULATION BASIS	FGTS DEPOSIT	GROSS	DEDUCTIONS	NET
0.00	19,211.02	0.00	21,513.75	5,564,36	15,949.39

Authentication No. 3A27.2C69.A226.2513.2B87.AA87

Date of Issue: 05/28/2026 7:23:57 PM

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Translator's note:
UPAG - Paying Unit
SFA-MG - Federal Superintendence of Agriculture in Minas Gerais.
UORG - Organizational Unit
UTRAMCL-MG - Regional Technical Unit of Agriculture, Livestock, and Supply – Minas Gerais
SIAPE - Integrated Human Resources Administration System
F.A. - FAMILY ALLOWANCE
ANFFASI - National Association of Federal Agricultural Auditors
FGTS - Severance Indemnity Fund
Sigepe - Personnel Management System of the Federal Executive Branch
SERPRO - Federal Data Processing Service

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Marina Viana

Date: September 17, 2026

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COMPROVANTE DE RENDIMENTOS - FOLHA NORMAL

MINISTERIO DA AGRICULTURA E PECUARIA

SIGLA DA UPAG	UF	REG. JURÍDICO	SITUAÇÃO FUNCIONAL	SIGLA DA UORG	UF
SFA-MG	MG	EST	ATIVO PERMANENTE	UTRAMCL-MG	MG

NOME DO SERVIDOR	MAT. SIAPE	IDENT. ÚNICA
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

CARGO/EMPREGO	CLASSE	REF/PADRAO/NIVEL	FUNÇÃO
AUDITOR FISCAL FEDERAL AGROPEC	C	III	FEX 0102 **

DEPENDENTE S.F.	DEPENDENTE IR	A.T.S.(%)	CPF	MÊS/ANO PAGAMENTO
00	00	00	06741091637	FEV 2026

CONTA PARA RECEBIMENTO DE SALÁRIO			CONTA PARA OUTRAS OPERAÇÕES		
BANCO	AGÊNCIA	CONTA SALÁRIO	BANCO	AGÊNCIA	CONTA
001	009237	0000000578819	001	009237	0000000578819

PARÂMETROS PARA PAGAMENTO DE APOSENTADORIA

FUNDAMENTO LEGAL	GRUPO	CARGO	CLASSE	REF/PAD/NIV
**********	***	***	*	***

TIPO	DISCRIMINAÇÃO	PRAZO	VALOR
RENDIMENTOS	AUXÍLIO-ALIMENTACÃO		1.175,00
	SUBSIDIO AT		19.475,11
	PER CAPITA - SAUDE SUPLEMENTAR		139,66
	FCE-FUNÇÃO COMISSIONADA EXECUT		723,98
DESCONTOS	MENSALIDADE SINDICAL - ANFFASI		201,99
	CONT. PLANO SEGURIDADE SOCIAL		988,07
	IMPOSTO DE RENDA RETIDO FONTE		4.374,30

Eduque-se financeiramente: Portal do Servidor/Gestão de Pessoas/Capacitação/Educação Financeira.

BASE CÁLCULO DO TETO	BASE CÁLCULO DO I.R.	DEPÓSITO FGTS	BRUTO	DESCONTO	LÍQUIDO
0,00	19.211,02	0,00	21.513,75	5.564,36	15.949,39

Autenticação Nº 3A27.2C69.A226.2513.2B87.AA87
Data de emissão: 28/05/2026 19:23:57

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To clarify any questions about your payment, contact your paying unit immediately.

PAYSLIP– REGULAR PAYROLL

MINISTRY OF AGRICULTURE AND LIVESTOCK

UPAG ACRONYM	STATE	LEGAL REGISTRATION	EMPLOYMENT STATUS	UORG ACRONYM	STATE
SFA-MG	MG	STATE	PERMANENT ACTIVE	UTRAMCL-MG	MG

EMPLOYEE NAME	SIAPE REGISTRATION NO.	UNIQUE ID
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

POSITION/JOB	CLASS	REFERENCE/GRADE/LEVEL	ROLE
FEDERAL AGRICULTURAL TAX AUDITOR	C	III	FEX 0102 **

DEPENDENT – F.A.	DEPENDENT – TAX INCOME	A.T.S.(%)	CPF	PAYMENT MONTH/YEAR
00	00	00	06741091637	APR 2026

SALARY PAYMENT ACCOUNT			ACCOUNT FOR OTHER TRANSACTIONS		
BANK	BRANCH	SALARY ACCOUNT	BANK	BRANCH	ACCOUNT
001	009237	0000000578819	001	009237	0000000578819

RETIREMENT PAYMENT PARAMETERS

LEGAL BASIS	GRUP	POSITION	CLASS	REFERENCE/GRADE/LEVEL
**********	***	***	*	***

TYPE	DESCRIPTION	PERIOD	AMOUNT
EARNINGS	FOOD ALLOWANCE		1,192,00
	FOOD ALLOWANCE	001	17.00
	SUBSIDY (AT)		20,906.98
	PER CAPITA – SUPPLEMENTARY HEALTH INSURANCE		144.71
DEDUCTIONS	FCE – EXECUTIVE COMMISSIONED ROLE		723.98
	UNION MEMBERSHIP FEE – ANFFASI		216.30
	SOCIAL SECURITY CONTRIBUTION		988,07
	INCOME TAX WITHHELD AT SOURCE		4,768.06

Educate yourself financially: Civil Servant Portal / People Management / Training / Financial Education.

PAY CAP CALCULATION BASE	INCOME TAX CALCULATION BASIS	FGTS DEPOSIT	GROSS	DEDUCTIONS	NET
0.00	20,642.89	0.00	22,984.67	5,972.43	17,012.24

Authentication No. EE80.BADE.F300.D75C.8A6D.E3A2

Date of Issue: 05/28/2026 7:23:23 PM

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SFA-MG - Federal Superintendence of Agriculture in Minas Gerais.
UORG - Organizational Unit
UTRAMCL-MG - Regional Technical Unit of Agriculture, Livestock, and Supply – Minas Gerais
SIAPE - Integrated Human Resources Administration System
F.A. - FAMILY ALLOWANCE
ANFFASI - National Association of Federal Agricultural Auditors
FGTS - Severance Indemnity Fund
Sigepe - Personnel Management System of the Federal Executive Branch
SERPRO - Federal Data Processing Service

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Marina Viana

Date: September 17, 2026

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COMPROVANTE DE RENDIMENTOS - FOLHA NORMAL

MINISTERIO DA AGRICULTURA E PECUARIA

SIGLA DA UPAG	UF	REG. JURÍDICO	SITUAÇÃO FUNCIONAL	SIGLA DA UORG	UF
SFA-MG	MG	EST	ATIVO PERMANENTE	UTRAMCL-MG	MG

NOME DO SERVIDOR	MAT. SIAPE	IDENT. ÚNICA
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

CARGO/EMPREGO	CLASSE	REF/PADRAO/NIVEL	FUNÇÃO
AUDITOR FISCAL FEDERAL AGROPEC	C	III	FEX 0102 **

DEPENDENTE S.F.	DEPENDENTE IR	A.T.S.(%)	CPF	MÊS/ANO PAGAMENTO
00	00	00	06741091637	ABR 2026

CONTA PARA RECEBIMENTO DE SALÁRIO			CONTA PARA OUTRAS OPERAÇÕES		
BANCO	AGÊNCIA	CONTA SALÁRIO	BANCO	AGÊNCIA	CONTA
001	009237	0000000578819	001	009237	0000000578819

PARÂMETROS PARA PAGAMENTO DE APOSENTADORIA

FUNDAMENTO LEGAL	GRUPO	CARGO	CLASSE	REF/PAD/NIV
**********	***	***	*	***

TIPO	DISCRIMINAÇÃO	PRAZO	VALOR
RENDIMENTOS	AUXÍLIO-ALIMENTACÃO		1.192,00
	AUXÍLIO-ALIMENTACÃO	001	17,00
	SUBSIDIO AT		20.906,98
	PER CAPITA - SAUDE SUPLEMENTAR		144,71
	FCE-FUNÇÃO COMISSIONADA EXECUT		723,98
DESCONTOS	MENSALIDADE SINDICAL - ANFFASI		216,30
	CONT. PLANO SEGURIDADE SOCIAL		988,07
	IMPOSTO DE RENDA RETIDO FONTE		4.768,06

Eduque-se financeiramente: Portal do Servidor/Gestão de Pessoas/Capacitação/Educação Financeira.

BASE CÁLCULO DO TETO	BASE CÁLCULO DO I.R.	DEPÓSITO FGTS	BRUTO	DESCONTO	LÍQUIDO
0,00	20.642,89	0,00	22.984,67	5.972,43	17.012,24

Autenticação Nº EE80.BADE.F300.D75C.8A6D.E3A2

Data de emissão: 28/05/2026 19:23:23

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To clarify any questions about your payment, contact your paying unit immediately.

PAYSLIP– REGULAR PAYROLL

MINISTRY OF AGRICULTURE AND LIVESTOCK

UPAG ACRONYM	STATE	LEGAL REGISTRATION	EMPLOYMENT STATUS	UORG ACRONYM	STATE
SFA-MG	MG	STATE	PERMANENT ACTIVE	UTRAMCL-MG	MG

EMPLOYEE NAME	SIAPE REGISTRATION NO.	UNIQUE ID
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

POSITION/JOB	CLASS	REFERENCE/GRADE/LEVEL	ROLE
FEDERAL AGRICULTURAL TAX AUDITOR	C	III	FEX 0102 **

DEPENDENT – F.A.	DEPENDENT – TAX INCOME	A.T.S.(%)	CPF	PAYMENT MONTH/YEAR
00	00	00	06741091637	MAY 2026

SALARY PAYMENT ACCOUNT			ACCOUNT FOR OTHER TRANSACTIONS		
BANK	BRANCH	SALARY ACCOUNT	BANK	BRANCH	ACCOUNT
001	009237	0000000578819	001	009237	0000000578819

RETIREMENT PAYMENT PARAMETERS

LEGAL BASIS	GRUP	POSITION	CLASS	REFERENCE/GRADE/LEVEL
**********	***	***	*	***

TYPE	DESCRIPTION	PERIOD	AMOUNT
EARNINGS	FOOD ALLOWANCE		1,192,00
	SUBSIDY (AT)		20,906.98
	PER CAPITA – SUPPLEMENTARY HEALTH INSURANCE		144.71
	FCE – EXECUTIVE COMMISSIONED ROLE		723.98
DEDUCTIONS	UNION MEMBERSHIP FEE – ANFFASI		216.30
	SOCIAL SECURITY CONTRIBUTION		988.07
	INCOME TAX WITHHELD AT SOURCE		4,768.06

Educate yourself financially: Civil Servant Portal / People Management / Training / Financial Education.

PAY CAP CALCULATION BASE	INCOME TAX CALCULATION BASIS	FGTS DEPOSIT	GROSS	DEDUCTIONS	NET
0.00	20,642.89	0.00	22,967.67	5,972.43	16,995.24

Authentication No. 3A27.2C69.A226.2513.2B87.AA87

Date of Issue: 05/28/2026 7:23:57 PM

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SFA-MG - Federal Superintendence of Agriculture in Minas Gerais.
UORG - Organizational Unit
UTRAMCL-MG - Regional Technical Unit of Agriculture, Livestock, and Supply – Minas Gerais
SIAPE - Integrated Human Resources Administration System
F.A. - FAMILY ALLOWANCE
ANFFASI - National Association of Federal Agricultural Auditors
FGTS - Severance Indemnity Fund
Sigepe - Personnel Management System of the Federal Executive Branch
SERPRO - Federal Data Processing Service

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: September 17, 2026

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COMPROVANTE DE RENDIMENTOS - FOLHA NORMAL

MINISTERIO DA AGRICULTURA E PECUARIA

SIGLA DA UPAG	UF	REG. JURÍDICO	SITUAÇÃO FUNCIONAL	SIGLA DA UORG	UF
SFA-MG	MG	EST	ATIVO PERMANENTE	UTRAMCL-MG	MG

NOME DO SERVIDOR	MAT. SIAPE	IDENT. ÚNICA
HANNA CAROLINA CAMPOS FERREIRA	1159674	031596746

CARGO/EMPREGO	CLASSE	REF/PADRAO/NIVEL	FUNÇÃO
AUDITOR FISCAL FEDERAL AGROPEC	C	III	FEX 0102 **

DEPENDENTE S.F.	DEPENDENTE IR	A.T.S.(%)	CPF	MÊS/ANO PAGAMENTO
00	00	00	06741091637	MAI 2026

CONTA PARA RECEBIMENTO DE SALÁRIO			CONTA PARA OUTRAS OPERAÇÕES		
BANCO	AGÊNCIA	CONTA SALÁRIO	BANCO	AGÊNCIA	CONTA
001	009237	0000000578819	001	009237	0000000578819

PARÂMETROS PARA PAGAMENTO DE APOSENTADORIA

FUNDAMENTO LEGAL	GRUPO	CARGO	CLASSE	REF/PAD/NIV
**********	***	***	*	***

TIPO	DISCRIMINAÇÃO	PRAZO	VALOR
RENDIMENTOS	AUXÍLIO-ALIMENTACÃO		1.192,00
	SUBSIDIO AT		20.906,98
	PER CAPITA - SAUDE SUPLEMENTAR		144,71
	FCE-FUNÇÃO COMISSIONADA EXECUT		723,98
DESCONTOS	MENSALIDADE SINDICAL - ANFFASI		216,30
	CONT. PLANO SEGURIDADE SOCIAL		988,07
	IMPOSTO DE RENDA RETIDO FONTE		4.768,06

Eduque-se financeiramente: Portal do Servidor/Gestão de Pessoas/Capacitação/Educação Financeira.

BASE CÁLCULO DO TETO	BASE CÁLCULO DO I.R.	DEPÓSITO FGTS	BRUTO	DESCONTO	LÍQUIDO
0,00	20.642,89	0,00	22.967,67	5.972,43	16.995,24

Autenticação Nº 310E.D1B5.1EEE.F512.4D01.8A7C

Data de emissão: 28/05/2026 19:22:51

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NAME: HANNA CAROLINA CAMPOS FERREIRA
CPF: 067.410.916-37 **INCOME TAX - INDIVIDUAL**
ANNUAL ADJUSTMENT DECLARATION **TAX YEAR 2024** **CALENDAR YEAR 2023**

TAXPAYER IDENTIFICATION

Name:	HANNA CAROLINA CAMPOS FERREIRA	CPF:	067.410.916-37
Date of Birth:	09/25/1984	Voter ID:	145125740221

Do you have a spouse or partner? No

Were you a resident abroad and became a resident in Brazil in 2023? No

Have your registration details changed? No

Is one of the declarants a person with a serious illness or a physical or mental disability? No

Address:	RUA MATA MACHADO	Number:	113
Unit:		Neighborhood/District:	CENTRO
City:	JANUARIA	State:	MG
ZIP Code:	39480-000	Area Code/Phone:	(31) 99642-4522
E-mail:	HANNACCF@GMAIL.COM	Area Code/Mobile:	(31) 99642-4522

Occupation Type: 21 - Member or civil servant of the federal direct administration
Main Occupation: 228 - Veterinarian, pathologist (veterinary) and animal scientist
Type of Declaration: Original Annual Adjustment Declaration
Receipt Number of the last declaration filed in the 2023 tax year: 39.71.86.78.77-86

DEPENDENTS

No Information

ALIMONY RECIPIENTS

No Information

TAXABLE INCOME RECEIVED FROM LEGAL ENTITY BY THE TAXPAYER

(Values in Reais)

NAME OF THE PAYING SOURCE	INCOME RECEIVED FROM LEGAL ENTITY	OFFICIAL SOCIAL SECURITY CONTRIBUTION	WITHHELD TAX	13th SALARY	INCOME TAX WITHHELD ON 13th SALARY
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY CNPJ/CPF: 00.396.895/0026-83	200.191,46	10.475,91	40.760,81	12.793,87	3.632,20
TOTAL	200.191,46	10.475,91	40.760,81	12.793,87	3.632,20

TAXABLE INCOME RECEIVED FROM LEGAL ENTITY BY DEPENDENTS

No Information

TAXABLE INCOME RECEIVED FROM INDIVIDUALS AND ABROAD BY THE TAXPAYER

No Information

TAXABLE INCOME RECEIVED FROM INDIVIDUALS AND ABROAD BY DEPENDENTS

No Information

EXEMPT AND NON-TAXABLE INCOME

(Values in Reais)

99. Others 8.609,71

Beneficiary	CPF	CPF/CNPJ of the Paying Source	Name of the Paying Source	Description	Amount
Taxpayer	067.410.916-37	00.396.895/0026-83	MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY	OTHERS (CAPES SCHOLARSHIP, PASEP, HOUSING ALLOWANCE...)	7.096,00
Taxpayer	067.410.916-37	32.754.734/0001-52	FII QUASAR AGRO	0703 – REAL ESTATE INVESTMENT FUND (FII)	160,27
Taxpayer	067.410.916-37	17.329.029/0001-14	FII RBFF11	0703 REAL ESTATE INVESTMENT FUND (FII)	187,24
Taxpayer	067.410.916-37	34.027.774/0001-28	FII RFOF11	0703 - REAL ESTATE INVESTMENT FUND (FII)	180,60
Taxpayer	067.410.916-37	29.216.463/0001-77	FII MOGNO FUNDO DE FUNDOS	0703 - REAL ESTATE INVESTMENT FUND (FII)	137,75
Taxpayer	067.410.916-37	59.281.253/0001-23	RENDIMENTO DO FII RBRF11	0703 - REAL ESTATE INVESTMENT FUND (FII)	180,60
Taxpayer	067.410.916-37	34.197.727/0001-22	FII MORE REAL ESTATE FOF	0703 - REAL ESTATE INVESTMENT FUND (FII)	141,96
Taxpayer	067.410.916-37	59.281.253/0001-23	RENDIMENTO DO FII RBRF11	0703 - REAL ESTATE INVESTMENT FUND (FII)	144,80
Taxpayer	067.410.916-37	22.610.500/0001-88	RENDIMENTO DO FII XPPR11	0703 - REAL ESTATE INVESTMENT FUND (FII)	40,00
Taxpayer	067.410.916-37	02.332.886/0001-04	XP INVESTIMENTOS CCTVM S/A	0703 - REAL ESTATE INVESTMENT FUND (FII)	200,42
Taxpayer	067.410.916-37	32.903.702/0001-71	SANTANDER RENDA DE ALUGUEIS	0703 - REAL ESTATE INVESTMENT FUND (FII)	140,07

TOTAL 8.609,71

INCOME SUBJECT TO EXCLUSIVE/DEFINITIVE TAXATION

(Values in Reais)

01. 13th salary 12.793,87

06. Income from financial investments 1.820,45

Beneficiary	CPF	CNPJ of the Paying Source	Name of the Paying Source	Amount
Taxpayer	067.410.916-37	02.332.886/0001-04	XP INVESTIMENTOS CCTVM S/A	1.820,45

TOTAL 14.614,32

TAXABLE INCOME RECEIVED FROM LEGAL ENTITY BY THE TAXPAYER (TAX WITH SUSPENDED EXIGIBILITY)

No Information

TAXABLE INCOME RECEIVED FROM LEGAL ENTITY BY THE DEPENDENTS (TAX WITH SUSPENDED EXIGIBILITY)

No Information

TAXABLE INCOME FROM LEGAL ENTITY RECEIVED CUMULATIVELY BY THE TAXPAYER

No Information

TAXABLE INCOME FROM LEGAL ENTITY RECEIVED CUMULATIVELY BY THE DEPENDENTS

No Information

TAX PAID / WITHHELD

(Values in Reais)

01. Complementary Tax:	0,00
02. Tax paid abroad by the taxpayer and dependents	0,00
Tax due with income abroad	0,00
Tax due without income abroad	0,00
Difference to be considered for tax calculation (legal limit)	0,00
03. Income Tax Withheld at Source (Law 11.033/2004):	0,00
04. Income Tax Withheld at Source for the Taxpayer	40.760,81
05. Income Tax Withheld at Source for the Dependents	0,00
06. Taxpayer's Carnê-Leão*	0,00
07. Dependent's Carnê-Leão	0,00

* CARNÊ-LEÃO - Income tax that must be paid monthly, mandatorily, by individuals residing in Brazil who receive income from another individual or from abroad

PAYMENTS MADE

(Values in Reais)

CODE	BENEFICIARY NAME	BENEFICIARY CPF/CNPJ	AMOUNT PAID	NON-DEDUCTIBLE PORTION
Taxpayer				
12	MARIA DA GLORIA SOARES DE MELO	032.764.826-06	6.400,00	0,00
Description: PSYCHOTHERAPY SESSIONS.				
21	VIVIANE SANTOS DIAS NOGUEIRA	16.953.074/0001-82	460,00	0,00
Description: PHYSICAL THERAPY SERVICES				
21	CLINICA PSIQUIATRICA SILVEIRA JUNIOR LTDA - ME	12.238.097/0001-54	600,00	0,00
Description: MEDICAL SERVICES.				
21	CUIDAR E FLORESCER SERVICOS MEDICOS LTDA	42.235.079/0001-80	500,00	0,00
Description: CLINICAL SERVICES.				
21	LABORATORIO SANTA CLARA LIMITADA	18.878.108/0010-38	105,00	0,00
Description: LABORATORY TESTS.				
21	SAYONARA GUEDES NOVAIS EIRELI - ME	30.269.701/0001-91	660,00	0,00
Description: MEDICAL CONSULTATION				

PAYMENTS MADE

(Values in Reais)

CODE	BENEFICIARY NAME	BENEFICIARY CPF/CNPJ	AMOUNT PAID	NON-DEDUCTIBLE PORTION
21	CLINICA PROTESE DENTARIA ESPECIALIZADA LTDA	08.043.687/0001-54	250,00	0,00
Description: DENTAL TREATMENT				
21	LABORATORIO FERREIRA E LAFETA LTDA	28.860.241/0001-20	44,50	0,00
Description: MEDICAL TESTS				
21	MATER CLINICAS & IMAGENS SERVICOS MEDICOS LTDA	21.331.232/0001-00	400,00	0,00
Description: MEDICAL CONSULTATION				
21	INSTITUTO DA OBESIDADE BRUNA MOCELLIN	33.935.965/0001-25	140,00	0,00
Description: MEDICAL CONSULTATION				
21	CLINICA CASTRO E AZEVEDO LTDA	02.200.001/0001-05	280,00	0,00
Description: MEDICAL CONSULTATION				
21	VO2 GABRIEL FAGUNDES S/S LTDA	14.514.223/0001-81	2.395,00	0,00
Description: PHYSICAL THERAPY SERVICES				
26	QUALICORP ADMINISTRADORA DE BENEFICIOS S/A	07.658.098/0001-18	4.437,24	0,00
Description:				

DONATIONS MADE

No Information

STATEMENTS OF ASSETS AND RIGHTS

(Values in Reais)

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
01	13	ACQUISITION OF LOT - AL PIRAMIDE EMPREENDIMENTOS IMOBILIARIOS LTDA	0,00	86.093,52

105 - Brazil

Municipal Registration (IPTU):

Address: TERRASALPHA MONTES CLAROS
No.: LT 15
Unit: BLOCK Y1
Neighborhood:
City: MONTES CLAROS
State: MG ZIP Code: 3940000
Total Area: 332,5 m²
Acquisition Date: 04/23/2023
Registered at the Registry Office: Yes
Name of the Registry Office: 2nd REAL ESTATE REGISTRY OFFICE
Registration: 97966

STATEMENTS OF ASSETS AND RIGHTS (Values in Reais)

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
02	01	FOX 1.6 CONNECT VOLKSWAGEN VEHICLE	59.839,00	57.427,00

105 - Brazil

RENAVAM (National Registry of Motor Vehicles): 01229854174

04	02	TREASURY DIRECT	17.691,11	17.691,11

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ: 02.332.886/0001-04

04	02	BB CDB (Certificate of Deposit) DI PARCERIA	8.000,00	8.000,00

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ: 00.000.000/0001-91

04	02	CDB FROM: BANCO CNH CAPITAL S/A 12/14/2022; OMNI S/A CREDITO 07/16/2023; PERNAMBUCANAS FINCANCIADORA S/A 08/24/2023; BANCO ORIGINAL S/A 09/15/2023; BANCO BMG S/A 12/10/2023; BANCO AGIBANK S/A 12/10/2023, 07/15/2024 AND 07/15/2025; VIA CERTA FINANCIADORA S/A 10/14/2024; WILL FINANCEIRA 10/17/2024; BANCO DIGIMAIS S/A 07/15/2025; BANCO PAN 11/16/2025; BANCO ORIGINAL 07/15/2026; BANCO MASTER S/A 10/14/2026 AND 12/09/2026.	31.000,00	30.000,00

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ: 02.332.886/0001-04

06	01	CHECKING ACCOUNT	38.969,54	1.169,17

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ: 00.000.000/0001-91

Bank: 001 Branch: 0923 Account: 57881-9

STATEMENTS OF ASSETS AND RIGHTS (Values in Reais)

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
06	99	XP ACCOUNT BALANCE	8.919,89	4.119,60

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ: 02.332.886/0001-04

07	03	QUASAR AGRO - FI MOB: 26 SHARES OF THE QAGR11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 49,73 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82)	1.518,38	1.518,38

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 32.754.734/0001-52
Exchange-Traded: No

07	03	RIO BRAVO FUNDO DE FII - 26 SHARES OF THE RBFF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 62,63 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.870,85	1.870,85

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 17.329.029/0001-14
Exchange-Traded: No

07	03	FII RB CAP - 21 SHARES OF THE RFOF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 76,26 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.601,42	1.601,42

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 34.027.774/0001-28
Exchange-Traded: No

STATEMENTS OF ASSETS AND RIGHTS (Values in Reais)

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	03	FI IMOBILIA UNICA - 19 SHARES OF THE MGFF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 68,08 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.470,04	1.470,04

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 29.216.463/0001-77
Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	03	BTG PACTUAL CORPORATE OFFICE FUND FII - 22 SHARES OF THE BRCR11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 82,76 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.820,72	1.820,72

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 59.281.253/0001-23
Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	03	MORE REAL ESTATE FOF FII FUNDO UNICA - 17 SHARES OF THE MORE11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 85,46 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.672,23	1.672,23

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 34.197.727/0001-22
Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	03	FII RBR ALPHA MULTIESTRATEGIA REAL ESTATE - 20 SHARES OF THE RBRF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 78,13 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.562,60	1.562,60

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 59.281.253/0001-23
Exchange-Traded: No

STATEMENTS OF ASSETS AND RIGHTS (Values in Reais)

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	03	XP PROPERTIES FII - 25 SHARES OF THE XPPR11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 64,89 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.622,25	1.622,25

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 22.610.500/0001-88
Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	03	XP SELECTION REAL ESTATE INVESTMENT FUND - 22 SHARES OF THE XPSF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 77,70 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.709,40	1.709,40

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 02.332.886/0001-04
Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	03	SANTANDER RENTAL INCOME - 21 SHARES OF THE SARE11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 73,61 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.545,81	1.545,81

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 32.903.702/0001-71
Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	09	ISHARES BOVA CI - 75 SHARES OF THE ETF BOVA11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 115,31 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	9.530,06	9.530,06

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 10.406.511/0001-61
Exchange-Traded: No

STATEMENTS OF ASSETS AND RIGHTS

(Values in Reais)

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	09	ISHARES S&P 500 - 47 SHARES OF THE ETF IVVB11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 281,33 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	16.609,97	16.609,97

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 19.909.560/0001-91
Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023
07	09	ISHARES SMAL CI - 50 SHARES OF THE ETF SMAL11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 309,68 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82)	7.196,58	7.196,58

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ do Fundo: 10.406.600/0001-08
Exchange-Traded: No

TOTAL	214.149,85	254.230,71

ENCUMBRANCES AND REAL LIABILITIES

(Values in Reais)

CODE	DISCLOSURE	STATUS ON 12/31/2022	STATUS ON 12/31/2023	AMOUNT PAID IN 2023
16	ACQUISITION OF LOT - AL PIRAMIDE EMPREENDIMENTOS IMOBILIARIOS LTDA	0,00	158.396,88	86.093,52
TOTAL		0,00	158.396,88	86.093,52

DONATIONS TO POLITICAL PARTIES AND CANDIDATES FOR ELECTIVE OFFICES

No Information

STATEMENT OF RURAL ACTIVITY - BRAZIL

IDENTIFICATION DATA OF THE EXPLORED PROPERTY - BRAZIL

No Information

INCOME AND EXPENSES - BRAZIL

No Information

CALCULATION OF THE RESULT - BRAZIL

No Information

LIVESTOCK ACTIVITY - BRAZIL

No Information

ASSETS OF RURAL ACTIVITY - BRAZIL

No Information

DEBTS RELATED TO RURAL ACTIVITY - BRAZIL

No Information

STATEMENT OF RURAL ACTIVITY - ABROAD

IDENTIFICATION DATA OF THE EXPLORED PROPERTY - ABROAD

No Information

INCOME AND EXPENSES - ABROAD

No Information

CALCULATION OF THE RESULT - ABROAD

No Information

LIVESTOCK ACTIVITY - ABROAD

No Information

ASSETS OF RURAL ACTIVITY - ABROAD

No Information

DEBTS RELATED TO RURAL ACTIVITY - ABROAD

No Information

STATEMENT OF CAPITAL GAINS CALCULATION

No Information

VARIABLE INCOME - COMMON OPERATIONS/DAY TRADE - TAXPAYER

NET GAINS OR LOSSES - JAN

No Information

NET GAINS OR LOSSES - FEB

No Information

NET GAINS OR LOSSES - MAR

No Information

NET GAINS OR LOSSES - APR

No Information

NET GAINS OR LOSSES - MAY

No Information

NET GAINS OR LOSSES - JUN

No Information

NET GAINS OR LOSSES - JUL

No Information

NET GAINS OR LOSSES - AUG

No Information

NET GAINS OR LOSSES - SEP

No Information

NET GAINS OR LOSSES - OCT

No Information

NET GAINS OR LOSSES - NOV

No Information

NET GAINS OR LOSSES - DEC

No Information

VARIABLE INCOME - COMMON OPERATIONS/DAY TRADE - DEPENDENTS

No Information

REAL ESTATE INVESTMENT FUNDS OR IN AGRO-INDUSTRIAL PRODUCTION CHAINS - TAXPAYER

No Information

REAL ESTATE INVESTMENT FUNDS OR IN AGRO-INDUSTRIAL PRODUCTION CHAINS - DEPENDENTS

No Information

DONATIONS DIRECTLY IN THE DECLARATION – ECA (STATUTE OF THE CHILD AND ADOLESCENT)

No Information

DONATIONS DIRECTLY IN THE DECLARATION - ELDERLY

No Information

NAME: HANNA CAROLINA CAMPOS FERREIRA
CPF: 067.410.916-37 **INCOME TAX - INDIVIDUAL**
ANNUAL ADJUSTMENT DECLARATION **TAX YEAR 2024** **CALENDAR YEAR 2023**

SUMMARY — TAXATION USING THE LEGAL DEDUCTION

TAXABLE INCOME

Received from Legal Entity by the taxpayer	200.191,46
Received from Legal Entity by dependents	0,00
Received from Individual/Abroad by the taxpayer	0,00
Received from Individual/Abroad by Dependents	0,00
Received Cumulatively by the taxpayer	0,00
Received Cumulatively by dependents	0,00
Taxable Income from Rural Activity	0,00
TOTAL	200.191,46

DEDUCTIONS

Contributions to the official and closed complementary pension systems referred to in § 15 of Article 40 of the CF (Federal Constitution)/1988 (up to the sponsor limit)	10.475,91
Contribution to the official pension system (Income received cumulatively)	0,00
Contribution to the complementary pension system, including the amount for the closed systems referred to in Article 40, § 15, of the CF (Federal Constitution)/1988, which exceeds the sponsor's limit	0,00
Dependents	0,00
Education Expenses	0,00
Medical Expenses	16.671,74
Judicial Alimony	0,00
Alimony by Public Deed	0,00
Judicial Alimony (Income received cumulatively)	0,00
Cash book	0,00
TOTAL	27.147,65

TAX DUE

Tax Base	173.043,81
Tax Due	37.029,91
Incentive Deduction	0,00
Tax Due I	37.029,91
Tax Due RRA (on received accumulated income)	0,00
Effective Tax Rate (%)	18,49
Total Tax Due	37.029,91

TAX PAID

Tax Withheld at Source by the Taxpayer	40.760,81
Tax Withheld at Source by Dependents	0,00
Taxpayer's Carnê-Leão	0,00
Dependents' Carnê-Leão	0,00
Complementary Tax	0,00
Tax Paid Abroad	0,00
Tax Withheld at Source (Law No. 11.033/2004)	0,00
Tax Withheld RRA	0,00
Total Tax Paid	40.760,81

TAX TO BE REFUNDED	3.730,90
BALANCE OF TAX PAYABLE	0,00

INSTALLMENT PLAN

Installment Amount	0,00
Number of Installments	0

BANKING INFORMATION

Account Type	Checking Account
Bank	001
Branch (without verification digit)	923
Account for credit	57881 9

ASSET EVOLUTION

Assets and Rights on 12/31/2022	214.149,85
Assets and Rights on 12/31/2023	254.230,71
Encumbrances and Real Liabilities on 12/31/2022	0,00
Encumbrances and Real Liabilities on 12/31/2023	158.396,88

OTHER INFORMATION

Exempt and non-taxable income	8.609,71
Income subject to exclusive/definitive taxation	14.614,32
Taxable income - tax with suspended liability	0,00
Judicial Deposits of Tax	0,00
Tax Paid on Capital Gains	0,00
Tax Paid on Capital Gains Foreign Currency - Assets, Rights, and Financial Investments	0,00
Total tax withheld at source (Law No. 11.033/2004), as per the data provided by the taxpayer	0,00
Tax Paid on Variable Income	0,00
Donations to Political Parties and Candidates for Elective Office	0,00
Tax Payable on Capital Gain - Foreign Currency in Cash	0,00
Deferred Tax on Capital Gains	0,00
Tax Due on Capital Gains	0,00
Tax Due on Net Income from Variable Income	0,00
Tax Due on Capital Gains in Foreign Currency - Assets, Rights, and Financial Investments	0,00

I, André Vinícius Inacio Penna Mello, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 23, 2026.

NOME: HANNA CAROLINA CAMPOS FERREIRA
CPF: 067.410.916-37 **IMPOSTO SOBRE A RENDA - PESSOA FÍSICA**
DECLARAÇÃO DE AJUSTE ANUAL **EXERCÍCIO 2024** **ANO-CALENDÁRIO 2023**

IDENTIFICAÇÃO DO CONTRIBUINTE

Nome:	HANNA CAROLINA CAMPOS FERREIRA	CPF:	067.410.916-37
Data de Nascimento:	25/09/1984	Título Eleitoral:	145125740221

Possui cônjuge ou companheiro(a)? Não

Era residente no exterior e passou a ser residente no Brasil em 2023? Não

Houve alteração de dados cadastrais? Não

Um dos declarantes é pessoa com doença grave ou portadora de deficiência física ou mental? Não

Endereço:	RUA MATA MACHADO	Número:	113
Complemento:		Bairro/Distrito:	CENTRO
Município:	JANUARIA	UF:	MG
CEP:	39480-000	DDD/Telefone:	(31) 99642-4522
E-mail:	HANNACCF@GMAIL.COM	DDD/Celular:	(31) 99642-4522

Natureza da Ocupação: 21 - Membro ou servidor público da administração direta federal

Ocupação Principal: 228 - Veterinário, patologista (veterinário) e zootecnista

Tipo de declaração: Declaração de Ajuste Anual Original

Nº do recibo da última declaração entregue do exercício de 2023: 39.71.86.78.77-86

PROTEGIDA POR SIGILO FISCAL

DEPENDENTES

Sem Informações

ALIMENTANDOS

Sem Informações

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA JURÍDICA PELO TITULAR

(Valores em Reais)

NOME DA FONTE PAGADORA	REND. RECEBIDOS DE PES. JURÍDICA	CONTR. PREVID. OFICIAL	IMPOSTO RETIDO NA FONTE	13º SALÁRIO	IRRF SOBRE 13º SALÁRIO
MINISTERIO DA AGRICULTURA, PECUARIA E ABASTECIMENTO CNPJ/CPF: 00.396.895/0026-83	200.191,46	10.475,91	40.760,81	12.793,87	3.632,20
TOTAL	200.191,46	10.475,91	40.760,81	12.793,87	3.632,20

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA JURÍDICA PELOS DEPENDENTES

Sem Informações

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA FÍSICA E DO EXTERIOR PELO TITULAR

Sem Informações

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA FÍSICA E DO EXTERIOR PELOS DEPENDENTES

Sem Informações

RENDIMENTOS ISENTOS E NÃO TRIBUTÁVEIS

(Valores em Reais)

99. Outros 8.609,71

Beneficiário	CPF	CPF/CNPJ da Fonte Pagadora	Nome da Fonte Pagadora	Descrição	Valor
Titular	067.410.916-37	00.396.895/0026-83	MINISTERIO DA AGRICULTURA, PECUARIA E ABASTECIMENTO	OUTROS (BOLSA CAPES, PASEP, AUXILIO MORADIA...)	7.096,00
Titular	067.410.916-37	32.754.734/0001-52	FII QUASAR AGRO	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	160,27
Titular	067.410.916-37	17.329.029/0001-14	FII RBFF11	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	187,24
Titular	067.410.916-37	34.027.774/0001-28	FII RFOF11	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	180,60
Titular	067.410.916-37	29.216.463/0001-77	FII MOGNO FUNDO DE FUNDOS	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	137,75
Titular	067.410.916-37	59.281.253/0001-23	RENDIMENTO DO FII RBRF11	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	180,60
Titular	067.410.916-37	34.197.727/0001-22	FII MORE REAL ESTATE FOF	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	141,96
Titular	067.410.916-37	59.281.253/0001-23	RENDIMENTO DO FII RBRF11	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	144,80
Titular	067.410.916-37	22.610.500/0001-88	RENDIMENTO DO FII XPPR11	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	40,00
Titular	067.410.916-37	02.332.886/0001-04	XP INVESTIMENTOS CCTVM S/A	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	200,42
Titular	067.410.916-37	32.903.702/0001-71	SANTANDER RENDA DE ALUGUEIS	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII)	140,07

TOTAL 8.609,71

RENDIMENTOS SUJEITOS À TRIBUTAÇÃO EXCLUSIVA / DEFINITIVA

(Valores em Reais)

01. 13º salário 12.793,87

06. Rendimentos de aplicações financeiras 1.820,45

Beneficiário	CPF	CNPJ da Fonte Pagadora	Nome da Fonte Pagadora	Valor
Titular	067.410.916-37	02.332.886/0001-04	XP INVESTIMENTOS CCTVM S/A	1.820,45

TOTAL 14.614,32

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA JURÍDICA PELO TITULAR (IMPOSTO COM EXIGIBILIDADE SUSPENSA)

PROTEGIDA POR SIGILO FISCAL

Sem Informações

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA JURÍDICA PELOS DEPENDENTES (IMPOSTO COM EXIGIBILIDADE SUSPENSA)

Sem Informações

RENDIMENTOS TRIBUTÁVEIS DE PESSOA JURÍDICA RECEBIDOS ACUMULADAMENTE PELO TITULAR

Sem Informações

RENDIMENTOS TRIBUTÁVEIS DE PESSOA JURÍDICA RECEBIDOS ACUMULADAMENTE PELOS DEPENDENTES

Sem Informações

IMPOSTO PAGO / RETIDO

(Valores em Reais)

01. Imposto complementar	0,00
02. Imposto pago no exterior pelo titular e pelos dependentes	0,00
Imposto devido com os rendimentos no exterior	0,00
Imposto devido sem os rendimentos no exterior	0,00
Diferença a ser considerada para cálculo do imposto (limite legal)	0,00
03. Imposto sobre a renda na fonte (Lei 11.033/2004)	0,00
04. Imposto retido na fonte do titular	40.760,81
05. Imposto retido na fonte dos dependentes	0,00
06. Carnê-Leão do titular	0,00
07. Carnê-Leão dos dependentes	0,00

PAGAMENTOS EFETUADOS

(Valores em Reais)

CÓD.	NOME DO BENEFICIÁRIO	CPF/CNPJ DO BENEFICIÁRIO	VALOR PAGO	PARC. NÃO DEDUTÍVEL
Titular				
12	MARIA DA GLORIA SOARES DE MELO	032.764.826-06	6.400,00	0,00
Descrição: SESSOES DE PSICOTERAPIA.				
21	VIVIANE SANTOS DIAS NOGUEIRA	16.953.074/0001-82	460,00	0,00
Descrição: SERVICOS FISIOTERAPICOS				
21	CLINICA PSIQUIATRICA SILVEIRA JUNIOR LTDA - ME	12.238.097/0001-54	600,00	0,00
Descrição: ATENDIMENTO MEDICO.				
21	CUIDAR E FLORESCER SERVICOS MEDICOS LTDA	42.235.079/0001-80	500,00	0,00
Descrição: ATENDIMENTO CLINICO.				
21	LABORATORIO SANTA CLARA LIMITADA	18.878.108/0010-38	105,00	0,00
Descrição: EXAMES LABORATORIAIS.				
21	SAYONARA GUEDES NOVAIS EIRELI - ME	30.269.701/0001-91	660,00	0,00
Descrição: CONSULTA MEDICA				

PROTEGIDA POR SIGILO FISCAL

PAGAMENTOS EFETUADOS

(Valores em Reais)

CÓD.	NOME DO BENEFICIÁRIO	CPF/CNPJ DO BENEFICIÁRIO	VALOR PAGO	PARC. NÃO DEDUTÍVEL
21	CLINICA PROTESE DENTARIA ESPECIALIZADA LTDA	08.043.687/0001-54	250,00	0,00
Descrição: TRATAMENTO DENTARIO				
21	LABORATORIO FERREIRA E LAFETA LTDA	28.860.241/0001-20	44,50	0,00
Descrição: REALIZACAO DE EXAMES				
21	MATER CLINICAS & IMAGENS SERVICOS MEDICOS LTDA	21.331.232/0001-00	400,00	0,00
Descrição: CONSULTA MEDICA				
21	INSTITUTO DA OBESIDADE BRUNA MOCELLIN	33.935.965/0001-25	140,00	0,00
Descrição: CONSULTA MEDICA				
21	CLINICA CASTRO E AZEVEDO LTDA	02.200.001/0001-05	280,00	0,00
Descrição: CONSULTA MEDICA				
21	VO2 GABRIEL FAGUNDES S/S LTDA	14.514.223/0001-81	2.395,00	0,00
Descrição: SERVICOS DE FISIOTERAPIA				
26	QUALICORP ADMINISTRADORA DE BENEFICIOS S/A	07.658.098/0001-18	4.437,24	0,00
Descrição:				

DOAÇÕES EFETUADAS

Sem Informações

DECLARAÇÃO DE BENS E DIREITOS

(Valores em Reais)

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2022	SITUAÇÃO EM 31/12/2023
01	13	AQUISICAO DE LOTE - AL PIRAMIDE EMPREENDIMENTOS IMOBILIARIOS LTDA	0,00	86.093,52

105 - Brasil

Inscrição Municipal (IPTU):

Logradouro: TERRASALPHA MONTES CLAROS
Nº: LT 15
Comp.: QUADRA Y1
Bairro:
Município: MONTES CLAROS
UF: MG CEP: 3940000
Área Total: 332,5 m²
Data de Aquisição: 23/04/2023
Registrado no Cartório: Sim
Nome Cartório: OFICIO DO 2o REGISTRO DE IMOVEIS
Matrícula: 97966

PROTEGIDA POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS

(Valores em Reais)

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2022	SITUAÇÃO EM 31/12/2023
02	01	VEICULO FOX 1.6 CONNECT VOLKSWAGEN 105 - Brasil RENAVAM: 01229854174	59.839,00	57.427,00
04	02	TESOURO DIRETO 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ: 02.332.886/0001-04	17.691,11	17.691,11
04	02	BB CDB DI PARCERIA 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ: 00.000.000/0001-91	8.000,00	8.000,00
04	02	CDB DE: BANCO CNH CAPITAL S/A 14/12/2022; OMNI S/A CREDITO 16/07/2023; PERNAMBUCANAS FINCANCIADORA S/A 24/08/2023; BANCO ORIGINAL S/A 15/09/2023; BANCO BMG S/A 10/12/2023; BANCO AGIBANK S/A 10/12/2023, 15/07/2024 E 15/07/2025; VIA CERTA FINANCIADORA S/A 14/10/2024; WILL FINANCEIRA 17/10/2024; BANCO DIGIMAIS S/A 15/07/2025; BANCO PAN 16/11/2025; BANCO ORIGINAL 15/07/2026; BANCO MASTER S/A 14/10/2026 E 09/12/2026. 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ: 02.332.886/0001-04	31.000,00	30.000,00
06	01	CONTA CORRENTE 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ: 00.000.000/0001-91 Banco: 001 Agência: 0923 Conta: 57881-9	38.969,54	1.169,17

PROTEGIDO POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS (Valores em Reais)

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2022	SITUAÇÃO EM 31/12/2023
06	99	SALDO EM CONTA XP 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ: 02.332.886/0001-04	8.919,89	4.119,60
07	03	QUASAR AGRO - FI MOB: 26 COTAS DO FII QAGR11 AO CUSTO UNITARIO DE R$ 49,73 CUSTODIADO NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82) 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 32.754.734/0001-52 Negociados em Bolsa: Não	1.518,38	1.518,38
07	03	RIO BRAVO FUNDO DE FII - 26 COTAS DO FII RBFF11 AO CUSTO UNITARIO DE R$ 62,63 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 17.329.029/0001-14 Negociados em Bolsa: Não	1.870,85	1.870,85
07	03	FII RB CAP - 21 COTAS DO FII RFOF11 AO CUSTO UNITARIO DE R$ 76,26 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 34.027.774/0001-28 Negociados em Bolsa: Não	1.601,42	1.601,42

PROTEGIDA POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS (Valores em Reais)

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2022	SITUAÇÃO EM 31/12/2023
07	03	FI IMOBILIA UNICA - 19 COTAS DO FII MGFF11 AO CUSTO UNITARIO DE R$ 68,08 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 29.216.463/0001-77 Negociados em Bolsa: Não	1.470,04	1.470,04
07	03	BTG PACTUAL CORPORATE OFFICE FUND FII - 22 COTAS DO FII BRCR11 AO CUSTO UNITARIO DE R$ 82,76 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 59.281.253/0001-23 Negociados em Bolsa: Não	1.820,72	1.820,72
07	03	MORE REAL ESTATE FOF FII FUNDO UNICA - 17 COTAS DO FII MORE11 AO CUSTO UNITARIO DE R$ 85,46 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 34.197.727/0001-22 Negociados em Bolsa: Não	1.672,23	1.672,23
07	03	FII RBR ALPHA MULTIESTRATEGIA REAL ESTATE - 20 COTAS DO FII RBRF11 AO CUSTO UNITARIO DE R$ 78,13 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 59.281.253/0001-23 Negociados em Bolsa: Não	1.562,60	1.562,60

PROTEGIDO POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS (Valores em Reais)

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2022	SITUAÇÃO EM 31/12/2023
07	03	XP PROPERTIES FII - 25 COTAS DO FII XPPR11 AO CUSTO UNITARIO DE R$ 64,89 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 22.610.500/0001-88 Negociados em Bolsa: Não	1.622,25	1.622,25
07	03	XP SELECTION FUNDO DE FUNDOS DE INVESTIMENTO IMOBILIARIO - 22 COTAS DO FII XPSF11 AO CUSTO UNITARIO DE R$ 77,70 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 02.332.886/0001-04 Negociados em Bolsa: Não	1.709,40	1.709,40
07	03	SANTANDER RENDA DE ALUGUEIS - 21 COTAS DO FII SARE11 AO CUSTO UNITARIO DE R$ 73,61 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 32.903.702/0001-71 Negociados em Bolsa: Não	1.545,81	1.545,81
07	09	ISHARES BOVA CI - 75 COTAS DO ETF BOVA11 AO CUSTO UNITARIO DE R$ 115,31 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 10.406.511/0001-61 Negociados em Bolsa: Não	9.530,06	9.530,06

PROTEGIDA POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS

(Valores em Reais)

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2022	SITUAÇÃO EM 31/12/2023
07	09	ISHARES S&P 500 - 47 COTAS DO ETF IVVB11 AO CUSTO UNITARIO DE R$ 281,33 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	16.609,97	16.609,97

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ do Fundo: 19.909.560/0001-91
Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2022	SITUAÇÃO EM 31/12/2023
07	09	ISHARES SMAL CI - 50 COTAS DO ETF SMAL11 AO CUSTO UNITARIO DE R$ 309,68 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82)	7.196,58	7.196,58

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ do Fundo: 10.406.600/0001-08
Negociados em Bolsa: Não

TOTAL	214.149,85	254.230,71

DÍVIDAS E ÔNUS REAIS

(Valores em Reais)

CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2022	SITUAÇÃO EM 31/12/2023	VALOR PAGO EM 2023
16	AQUISICAO DE LOTE - AL PIRAMIDE EMPREENDIMENTOS IMOBILIARIOS LTDA	0,00	158.396,88	86.093,52
TOTAL		0,00	158.396,88	86.093,52

DOAÇÕES A PARTIDOS POLÍTICOS E CANDIDATOS A CARGOS ELETIVOS

Sem Informações

PROTEGIDA POR SIGILO FISCAL

DEMONSTRATIVO DE ATIVIDADE RURAL - BRASIL

DADOS E IDENTIFICAÇÃO DO IMÓVEL EXPLORADO - BRASIL

Sem Informações

RECEITAS E DESPESAS - BRASIL

Sem Informações

APURAÇÃO DO RESULTADO - BRASIL

Sem Informações

MOVIMENTAÇÃO DO REBANHO - BRASIL

Sem Informações

BENS DA ATIVIDADE RURAL - BRASIL

Sem Informações

DÍVIDAS VINCULADAS À ATIVIDADE RURAL - BRASIL

Sem Informações

PROTEGIDA POR SIGILO FISCAL

DEMONSTRATIVO DE ATIVIDADE RURAL - EXTERIOR

DADOS E IDENTIFICAÇÃO DO IMÓVEL EXPLORADO - EXTERIOR

Sem Informações

RECEITAS E DESPESAS - EXTERIOR

Sem Informações

APURAÇÃO DO RESULTADO - EXTERIOR

Sem Informações

MOVIMENTAÇÃO DO REBANHO - EXTERIOR

Sem Informações

BENS DA ATIVIDADE RURAL - EXTERIOR

Sem Informações

DÍVIDAS VINCULADAS À ATIVIDADE RURAL - EXTERIOR

Sem Informações

DEMONSTRATIVO DA APURAÇÃO DOS GANHOS DE CAPITAL

Sem Informações

PROTEGIDA POR SIGILO FISCAL

RENDA VARIÁVEL - OPERAÇÕES COMUNS/DAYTRADE - TITULAR

GANHOS LÍQUIDOS OU PERDAS - JAN

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - FEV

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - MAR

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - ABR

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - MAI

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - JUN

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - JUL

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - AGO

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - SET

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - OUT

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - NOV

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - DEZ

Sem Informações

RENDA VARIÁVEL - OPERAÇÕES COMUNS/DAYTRADE - DEPENDENTES

Sem Informações

FUNDOS DE INVESTIMENTO IMOBILIÁRIO OU NAS CADEIAS PRODUTIVAS AGROINDUSTRIAIS - TITULAR

Sem Informações

FUNDOS DE INVESTIMENTO IMOBILIÁRIO OU NAS CADEIAS PRODUTIVAS AGROINDUSTRIAIS - DEPENDENTES

Sem Informações

DOAÇÕES DIRETAMENTE NA DECLARAÇÃO - ECA

Sem Informações

DOAÇÕES DIRETAMENTE NA DECLARAÇÃO - IDOSO

Sem Informações

PROTEGIDA POR SIGILO FISCAL

NOME: HANNA CAROLINA CAMPOS FERREIRA
CPF: 067.410.916-37 **IMPOSTO SOBRE A RENDA - PESSOA FÍSICA**
DECLARAÇÃO DE AJUSTE ANUAL **EXERCÍCIO 2024** **ANO-CALENDÁRIO 2023**

RESUMO **TRIBUTAÇÃO UTILIZANDO AS DEDUÇÕES LEGAIS**

RENDIMENTOS TRIBUTÁVEIS

Recebidos de Pessoa Jurídica pelo titular	200.191,46
Recebidos de Pessoa Jurídica pelos dependentes	0,00
Recebidos de Pessoa Física/Exterior pelo titular	0,00
Recebidos de Pessoa Física/Exterior pelos dependentes	0,00
Recebidos acumuladamente pelo titular	0,00
Recebidos acumuladamente pelos dependentes	0,00
Resultado tributável da Atividade Rural	0,00
TOTAL	200.191,46

DEDUÇÕES

Contribuições às previdências oficial e complementar fechada de que trata o § 15 do art. 40 da CF/1988 (até o limite do patrocinador)	10.475,91
Contribuição à previdência oficial (Rendimentos recebidos acumuladamente)	0,00
Contribuição à prev. complementar, inclusive o valor para as fechadas de que trata o § 15 do art. 40 da CF/1988 que exceder o limite do patrocinador	0,00
Dependentes	0,00
Despesas com instrução	0,00
Despesas médicas	16.671,74
Pensão alimentícia judicial	0,00
Pensão alimentícia por escritura pública	0,00
Pensão alimentícia judicial (Rendimentos recebidos acumuladamente)	0,00
Livro caixa	0,00
TOTAL	27.147,65

IMPOSTO DEVIDO

Base de cálculo do imposto	173.043,81
Imposto devido	37.029,91
Dedução de incentivo	0,00
Imposto devido I	37.029,91
Imposto devido RRA	0,00
Aliquota efetiva (%)	18,49
Total do imposto devido	37.029,91

IMPOSTO PAGO

Imposto retido na fonte do titular	40.760,81
Imp. retido na fonte dos dependentes	0,00
Carnê-Leão do titular	0,00
Carnê-Leão dos dependentes	0,00
Imposto complementar	0,00
Imposto pago no exterior	0,00
Imposto retido na fonte (Lei nº 11.033/2004)	0,00
Imposto retido RRA	0,00
Total do imposto pago	40.760,81

IMPOSTO A RESTITUIR	3.730,90
SALDO DE IMPOSTO A PAGAR	0,00

PARCELAMENTO

Valor da quota	0,00
Número de Quotas	0

INFORMAÇÕES BANCÁRIAS

Tipo de Conta	Conta Corrente
Banco	001
Agência (sem DV)	923
Conta para crédito	57881 9

PROTEGIDA POR SIGILO FISCAL

EVOLUÇÃO PATRIMONIAL

Bens e direitos em 31/12/2022	214.149,85
Bens e direitos em 31/12/2023	254.230,71
Dívidas e ônus reais em 31/12/2022	0,00
Dívidas e ônus reais em 31/12/2023	158.396,88

OUTRAS INFORMAÇÕES

Rendimentos isentos e não tributáveis	8.609,71
Rendimentos sujeitos à tributação exclusiva/definitiva	14.614,32
Rendimentos tributáveis - imposto com exigibilidade suspensa	0,00
Depósitos judiciais do imposto	0,00
Imposto pago sobre Ganhos de Capital	0,00
Imposto pago Ganhos de Capital Moeda Estrangeira - Bens, direitos e Aplicações Financeiras	0,00
Total do imposto retido na fonte (Lei nº11.033/2004), conforme dados informados pelo contribuinte	0,00
Imposto pago sobre Renda Variável	0,00
Doações a Partidos Políticos e Candidatos a Cargos Eletivos	0,00
Imposto a pagar sobre o Ganho de Capital - Moeda Estrangeira em Espécie	0,00
Imposto diferido dos Ganhos de Capital	0,00
Imposto devido sobre Ganhos de Capital	0,00
Imposto devido sobre ganhos líquidos em Renda Variável	0,00
Imposto devido sobre Ganhos de Capital Moeda Estrangeira - Bens, direitos e aplic. financeiras	0,00

PROTEGIDA POR SIGILO FISCAL

NAME: HANNA CAROLINA CAMPOS FERREIRA
CPF: 067.410.916-37 **INCOME TAX - INDIVIDUAL**
ANNUAL ADJUSTMENT DECLARATION **TAX YEAR 2025** **CALENDAR YEAR 2024**

TAXPAYER IDENTIFICATION

Name:	HANNA CAROLINA CAMPOS FERREIRA	CPF:	067.410.916-37
Date of Birth:	09/25/1984		

Do you have a spouse or partner? No

Were you a resident abroad and became a resident in Brazil in 2024? No

Have your registration details changed? Yes

Is one of the declarants a person with a serious illness or a physical or mental disability? No

Address:	RUA MATA MACHADO	Number:	113
Unit:		Neighborhood/District:	CENTRO
City:	JANUARIA	State:	MG
ZIP Code:	39480-000	Area Code/Phone:	
E-mail:	HANNACCF@GMAIL.COM	Area Code/Mobile:	(31) 99642-4522

Occupation Type: 21 - Member or civil servant of the federal direct administration

Main Occupation: 228 - Veterinarian, pathologist (veterinary) and animal scientist

Type of Declaration: Amended Declaration

Receipt Number of the last declaration filed in the 2025 tax year: 08.66.30.49.53-65

DEPENDENTS

No Information

ALIMONY RECIPIENTS

No Information

TAXABLE INCOME RECEIVED FROM LEGAL ENTITY BY THE TAXPAYER

(Values in Reais)

NAME OF THE PAYING SOURCE	INCOME RECEIVED FROM LEGAL ENTITY	OFFICIAL SOCIAL SECURITY CONTRIBUTION	WITHHELD TAX	13th SALARY	INCOME TAX WITHHELD ON 13th SALARY
MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY CNPJ/CPF: 00.396.895/0026-83	214.818,61	10.874,30	44.264,44	13.089,48	3.729,10
TOTAL	214.818,61	10.874,30	44.264,44	13.089,48	3.729,10

TAXABLE INCOME RECEIVED FROM LEGAL ENTITY BY DEPENDENTS

No Information

TAXABLE INCOME RECEIVED FROM INDIVIDUALS AND ABROAD BY THE TAXPAYER

No Information

TAXABLE INCOME RECEIVED FROM INDIVIDUALS AND ABROAD BY DEPENDENTS

No Information

EXEMPT AND NON-TAXABLE INCOME

(Values in Reais)

12. Income from savings accounts, mortgage bonds, agribusiness, and real estate letters of credit (LCA and LCI), and certificates of agribusiness and real estate receivables (CRA and CRI) 76,30

Beneficiary	CPF	CNPJ of the Paying Source	Name of the Paying	Amount
Taxpayer	067.410.916-37	Source 00.000.000/0001-91	BANCO DO BRASIL	76,30

99. Others 13.797,26

Beneficiary	CPF	CPF/CNPJ of the Paying Source	Name of the Paying Source	Description	Amount
Taxpayer	067.410.916-37	00.396.895/0026-83	MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY	OTHERS (CAPES SCHOLARSHIP, PASEP, HOUSING ALLOWANCE...)	10.632,00
Taxpayer	067.410.916-37	00.396.895/0026-83	MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY	HEALTHCARE REIMBURSEMENT	1.408,17
Taxpayer	067.410.916-37	34.027.774/0001-28	FII RFOF11 (34.027.774/0001-28)	0703 REAL ESTATE INVESTMENT FUND (FII) - LAW 8.668/	181,65
Taxpayer	067.410.916-37	29.216.463/0001-77	FII MGFF11 (29216463000177)	0703 - REAL ESTATE INVESTMENT (FII) - LAW 8.668/	529,00
Taxpayer	067.410.916-37	17.329.029/0001-14	FII RBFF11 (17329029000114)	0703 - REAL ESTATE INVESTMENT (FII) - LAW 8.668/	189,10
Taxpayer	067.410.916-37	22.610.500/0001-88	XP PROPERTIES FII (22610500000188)	0703 - REAL ESTATE INVESTMENT (FII) - LAW 8.668/	21,75
Taxpayer	067.410.916-37	35.507.457/0001-71	RVBI11 (35.507.457/0001-71)	0703 - REAL ESTATE INVESTMENT (FII) - LAW 8.668/	128,25
Taxpayer	067.410.916-37	59.281.253/0001-23	FII BRCR11 (59281253000123)	0703 - REAL ESTATE INVESTMENT (FII) - LAW 8.668/	126,06
Taxpayer	067.410.916-37	59.281.253/0001-23	FII BRCR11 (59281253000123)	0703 - REAL ESTATE INVESTMENT (FII) - LAW 8.668/	150,64
Taxpayer	067.410.916-37	32.754.734/0001-52	FII QAGR11 (32754734000152)	0703 - REAL ESTATE INVESTMENT (FII) - LAW 8.668/	163,43
Taxpayer	067.410.916-37	32.903.702/0001-71	FII SARE11 (32903702000171)	0703 - REAL ESTATE INVESTMENT (FII) - LAW 8.668/	75,81
Taxpayer	067.410.916-37	02.332.886/0001-04	XP INVESTIMENTOS CCTVM S/A	0703 - REAL ESTATE INVESTMENT (FII) - LAW	191,40

8.668/

TOTAL	13.873,56

INCOME SUBJECT TO EXCLUSIVE/DEFINITIVE TAXATION

(Values in Reais)

01. 13th salary	13.089,48
06. Income from financial investments	2.733,57

Beneficiary	CPF	CNPJ of the Paying Source	Name of the Paying Source	Amount
Taxpayer	067.410.916-37	02.332.886/0001-04	XP INVESTIMENTOS CCTVM S/A	2.184,46
Taxpayer	067.410.916-37	34.197.727/0001-22	MORE11 (34.197.727/0001-22)	481,02
Taxpayer	067.410.916-37	59.281.253/0001-23	FII BRCR11 (59281253000123)	68,09

TOTAL	15.823,05

TAXABLE INCOME RECEIVED FROM LEGAL ENTITY BY THE TAXPAYER (TAX WITH SUSPENDED EXIGIBILITY)

No Information

TAXABLE INCOME RECEIVED FROM LEGAL ENTITY BY THE DEPENDENTS (TAX WITH SUSPENDED EXIGIBILITY)

No Information

TAXABLE INCOME FROM LEGAL ENTITY RECEIVED CUMULATIVELY BY THE TAXPAYER

No Information

TAXABLE INCOME FROM LEGAL ENTITY RECEIVED CUMULATIVELY BY THE DEPENDENTS

No Information

TAX PAID / WITHHELD

(Values in Reais)

01. Complementary Tax:	0,00
02. Tax paid abroad by the taxpayer and dependents	0,00
Tax due with income abroad	0,00
Tax due without income abroad	0,00
Difference to be considered for tax calculation (legal limit)	0,00
03. Income Tax Withheld at Source (Law 11.033/2004):	0,00
04. Income Tax Withheld at Source for the Taxpayer	44.264,44
05. Income Tax Withheld at Source for the Dependents	0,00
06. Taxpayer's Carnê-Leão*	0,00
07. Dependent's Carnê-Leão	0,00

PAYMENTS MADE

(Values in Reais)

CODE	BENEFICIARY NAME	BENEFICIARY CPF/CNPJ	AMOUNT PAID	NON-DEDUCTIBLE PORTION

Taxpayer

PAYMENTS MADE (Values in Reais)

CODE	BENEFICIARY NAME	BENEFICIARY CPF/CNPJ	AMOUNT PAID	NON-DEDUCTIBLE PORTION
12	MARIA DA GLORIA SOARES DE MELO	032.764.826-06	7.000,00	0,00
Description:	PSYCHOTHERAPY SESSIONS.			
21	VIVIANE SANTOS DIAS NOGUEIRA	16.953.074/0001-82	2.685,00	0,00
Description:	PHYSICAL THERAPY SERVICES			
21	CLINICA PSIQUIATRICA SILVEIRA JUNIOR LTDA - ME	12.238.097/0001-54	1.200,00	0,00
Description:	MEDICAL SERVICES.			
21	LABORATORIO SANTA CLARA LTDA	18.878.108/0001-47	456,00	0,00
Description:	LABORATORY TESTS.			
21	CLINICA PROTESE DENTARIA ESPECIALIZADA LTDA	08.043.687/0001-54	250,00	0,00
Description:	DENTAL TREATMENT			
21	MATER CLINICAS & IMAGENS SERVICOS MEDICOS LTDA	21.331.232/0001-00	1.080,00	0,00
Description:	MEDICAL CONSULTATION			
21	CLINICA MEDICA URODERM LTDA - ME	13.226.401/0001-06	370,00	0,00
Description:	MEDICAL CONSULTATION PERFORMED BY DR. CONRADO LEONEL MENEZES, CRM: 42201-MG FOR PATIENT: HANNA CAROLINA CAMPOS FERREIRA.			
21	HOSPITAL DIA DR. GIOVANI LTDA	00.730.276/0001-25	280,00	0,00
Description:	PROVISION OF MEDICAL SERVICES - ORTHOPEDIST CONSULTATION.			
21	CLINICA VELOSO LTDA - ME	05.771.942/0001-97	300,00	0,00
Description:	REGARDING ORTHOPEDIC CONSULTATION FOR HANNA CAROLINA CAMPOS FERREIRA.			
21	SAYONARA GUEDES NOVAIS EIRELI - ME	30.269.701/0001-91	350,00	0,00
Description:				
26	QUALICORP ADMINISTRADORA DE BENEFICIOS S/A	07.658.098/0001-18	5.519,55	0,00
Description:				
70	EXATA EMPREENDIMENTOS IMOBILIARIOS	14.591.311/0001-87	15.156,00	0,00
Description:	RENT PAYMENTS FROM 01/01/2024 TO 11/30/2024.			
70	JAIR AMINTAS NEGOCIOS IMOBILIARIOS	30.619.009/0001-46	2.604,23	0,00
Description:	RENT PAYMENTS FROM NOVEMBER AND DECEMBER/2024.			

DONATIONS MADE

No Information

STATEMENTS OF ASSETS AND RIGHTS

(Values in Reais)

Did you update the value of any real estate property and pay the capital gain tax by 12/16/2024 in accordance with Law No. 14.973/2024?	No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
01	13	ACQUISITION OF LOT - AL PIRAMIDE EMPREENDIMENTOS IMOBILIARIOS LTDA	86.093,52	145.816,14

105 - Brazil

Municipal Registration (IPTU):

Address: TERRASALPHA MONTES CLAROS
No.: LT 15
Unit: BLOCK Y1
Neighborhood:
City: MONTES CLAROS
State: MG ZIP Code: 3940000
Total Area: 332,5 m²
Acquisition Date: 04/23/2023
Registered at the Registry Office: Yes
Name of the Registry Office: 2nd REAL ESTATE REGISTRY OFFICE
Registration: 97966

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
02	01	FOX 1.6 CONNECT VOLKSWAGEN VEHICLE	57.427,00	56.877,00

105 - Brazil

RENAVAM (National Registry of Motor Vehicles): 01229854174

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
04	02	TREASURY DIRECT	17.691,11	18.800,59

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ: 02.332.886/0001-04

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
04	02	BB CDB (Certificate of Deposit) DI PARCERIA	8.000,00	8.000,00

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ: 00.000.000/0001-91

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
04	02	FIXED INCOME - CDB FROM: BANCO AGIBANK S/A 07/15/2024 AND 07/15/2025; VIA CERTA FINANCIADORA S/A 10/14/2024; WILL FINANCEIRA 10/17/2024, 10/23/26, 10/20/28; BANCO DIGIMAIS S/A 07/15/2025; BANCO PAN 11/16/2025; BANCO ORIGINAL 07/15/2026; BANCO MASTER S/A 10/13/2015, 02/05/2026, 10/14/2026, 12/09/2026 AND 03/17/2027; LEBES FINANCEIRA S/A 03/17/2025; BANCO ORIGINAL S/A 03/17/2027; FACTA S/A 10/13/2025; BANCO MASTER DE INVESTIMENTO 02/05/26 AND 08/22/28; BANCO VOITER 02/23/26.	30.000,00	36.050,35

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37
CNPJ: 02.332.886/0001-04

STATEMENTS OF ASSETS AND RIGHTS

(Values in Reais)

Did you update the value of any real estate property and pay the capital gain tax by 12/16/2024 in accordance with Law No. 14.973/2024?	No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
06	01	CHECKING ACCOUNT	1.169,17	473,20

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ: 00.000.000/0001-91

Bank: 001 Branch: 0923 Account: 57881-9 Payment Account? No

06	99	XP ACCOUNT BALANCE	4.119,60	277,00

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ: 02.332.886/0001-04

06	99	BB SAVINGS ACCOUNT BALANCE	0,00	5.000,00

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ: 00.000.000/0001-91

07	03	QUASAR AGRO - FI MOB: 26 SHARES OF THE QAGR11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 49,73 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82)	1.518,38	1.518,38

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 32.754.734/0001-52

Exchange-Traded: No

07	03	RIO BRAVO FUNDO DE FII - 26 SHARES OF THE RBFF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 62,63 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82).	1.870,85	1.870,85

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 17.329.029/0001-14

Exchange-Traded: No

07	03	FII RB CAP - 21 SHARES OF THE RFOF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 76,26 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82).	1.601,42	1.601,42

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 34.027.774/0001-28

Exchange-Traded: No

STATEMENTS OF ASSETS AND RIGHTS (Values in Reais)

Did you update the value of any real estate property and pay the capital gain tax by 12/16/2024 in accordance with Law No. 14.973/2024?	No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	03	FI IMOBILIA UNICA - 19 SHARES OF THE MGFF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 68,08 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82). VIDE FATO RELEVANTE .	1.470,04	1.470,04

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 29.216.463/0001-77

Exchange-Traded: Yes Trading Code: MGFF11

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	03	BTG PACTUAL CORPORATE OFFICE FUND FII - 22 SHARES OF THE BRCR11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 82,76 CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.820,72	1.820,72

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 59.281.253/0001-23

Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	03	MORE REAL ESTATE FOF FII FUNDO UNICA - 17 SHARES OF THE MORE11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 85,46 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82).	1.672,23	1.672,23

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 34.197.727/0001-22

Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	03	FII RBR ALPHA MULTIESTRATEGIA REAL ESTATE - 20 SHARES OF THE RBRF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 78,13 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER CNPF 02.332.886/0016-82).	1.562,60	1.562,60

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 59.281.253/0001-23

Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	03	XP PROPERTIES FII - 25 SHARES OF THE XPPR11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 64,89 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82).	1.622,25	1.622,25

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 22.610.500/0001-88

Exchange-Traded: No

STATEMENTS OF ASSETS AND RIGHTS (Values in Reais)

Did you update the value of any real estate property and pay the capital gain tax by 12/16/2024 in accordance with Law No. 14.973/2024?	No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	03	XP SELECTION FUNDO DE REAL ESTATE INVESTMENT (FII) - 22 SHARES OF THE XPSF11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 77,70 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82).	1.709,40	1.709,40

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 02.332.886/0001-04

Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	03	SANTANDER RENTAL INCOME - 21 SHARES OF THE SARE11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 73,61 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82).	1.545,81	1.545,81

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 32.903.702/0001-71

Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	03	RVBI11 (35.507.457/0001-71): ACQUISITION OF 19 SHARES.	0,00	1.231,20

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 35.507.457/0001-71

Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	06	ISHARES BOVA CI - 75 SHARES OF THE ETF BOVA11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 115,31 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82).	9.530,06	9.530,06

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 10.406.511/0001-61

Exchange-Traded: No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	06	ISHARES S&P 500 - 47 SHARES OF THE ETF IVVB11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 281,33 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82).	16.609,97	16.609,97

105 - Brazil

Asset or right belonging to: Taxpayer CPF: 067.410.916-37

CNPJ do Fundo: 19.909.560/0001-91

Exchange-Traded: No

STATEMENTS OF ASSETS AND RIGHTS

(Values in Reais)

Did you update the value of any real estate property and pay the capital gain tax by 12/16/2024 in accordance with Law No. 14.973/2024?	No

GROUP	CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024
07	06	ISHARES SMAL CI - 50 SHARES OF THE ETF SMAL11 REAL ESTATE INVESTMENT AT A UNIT COST OF R$ 309,68 HELD IN CUSTODY AT RICO BROKERAGE (OWNED BY XP INVESTIMENTOS, UNDER 02.332.886/0016-82) 105 - Brazil Asset or right belonging to: Taxpayer CPF: 067.410.916-37 CNPJ do Fundo: 10.406.600/0001-08 Exchange-Traded: No	7.196,58	7.196,58
99	07	FII RBFF11 (17329029000114) - CREDIT IN TRANSIT. 105 - Brazil CNPJ: 17.329.029/0001-14	0,00	16,12
TOTAL			254.230,71	322.271,91

ENCUMBRANCES AND REAL LIABILITIES

(Values in Reais)

CODE	DISCLOSURE	STATUS ON 12/31/2023	STATUS ON 12/31/2024	AMOUNT PAID IN 2024
16	ACQUISITION OF LOT - AL PIRAMIDE EMPREENDIMENTOS IMOBILIARIOS LTDA	158.396,88	98.674,26	59.722,62
TOTAL		158.396,88	98.674,26	59.722,62

DONATIONS TO POLITICAL PARTIES AND CANDIDATES FOR ELECTIVE OFFICES

No Information

STATEMENT OF RURAL ACTIVITY - BRAZIL

IDENTIFICATION DATA OF THE EXPLORED PROPERTY - BRAZIL

No Information

INCOME AND EXPENSES - BRAZIL

No Information

CALCULATION OF THE RESULT - BRAZIL

No Information

LIVESTOCK ACTIVITY - BRAZIL

No Information

ASSETS OF RURAL ACTIVITY - BRAZIL

No Information

DEBTS RELATED TO RURAL ACTIVITY - BRAZIL

No Information

STATEMENT OF RURAL ACTIVITY - ABROAD

IDENTIFICATION DATA OF THE EXPLORED PROPERTY - ABROAD

No Information

INCOME AND EXPENSES - ABROAD

No Information

CALCULATION OF THE RESULT - ABROAD

No Information

LIVESTOCK ACTIVITY - ABROAD

No Information

ASSETS OF RURAL ACTIVITY - ABROAD

No Information

DEBTS RELATED TO RURAL ACTIVITY - ABROAD

No Information

STATEMENT OF CAPITAL GAINS CALCULATION

No Information

VARIABLE INCOME - COMMON OPERATIONS/DAY TRADE - TAXPAYER

NET GAINS OR LOSSES - JAN

No Information

NET GAINS OR LOSSES - FEB

No Information

NET GAINS OR LOSSES - MAR

No Information

NET GAINS OR LOSSES - APR

No Information

NET GAINS OR LOSSES - MAY

No Information

NET GAINS OR LOSSES - JUN

No Information

NET GAINS OR LOSSES - JUL

No Information

NET GAINS OR LOSSES - AUG

No Information

NET GAINS OR LOSSES - SEP

No Information

NET GAINS OR LOSSES - OCT

No Information

NET GAINS OR LOSSES - NOV

No Information

NET GAINS OR LOSSES - DEC

No Information

VARIABLE INCOME - COMMON OPERATIONS/DAY TRADE - DEPENDENTS

No Information

REAL ESTATE INVESTMENT (FII) OR IN AGRO-INDUSTRIAL PRODUCTION CHAINS - TAXPAYER

No Information

REAL ESTATE INVESTMENT (FII) OR IN AGRO-INDUSTRIAL PRODUCTION CHAINS - DEPENDENTS

No Information

DONATIONS DIRECTLY IN THE DECLARATION – ECA (STATUTE OF THE CHILD AND ADOLESCENT)

No Information

DONATIONS DIRECTLY IN THE DECLARATION - ELDERLY

No Information

NAME: HANNA CAROLINA CAMPOS FERREIRA
CPF: 067.410.916-37 **INCOME TAX - INDIVIDUAL**
ANNUAL ADJUSTMENT DECLARATION **TAX YEAR 2025** **CALENDAR YEAR 2024**

SUMMARY — TAXATION USING THE LEGAL DEDUCTION

TAXABLE INCOME

Received from Legal Entity by the taxpayer	214.818,61
Received from Legal Entity by dependents	0,00
Received from Individual/Abroad by the taxpayer	0,00
Received from Individual/Abroad by Dependents	0,00
Received Cumulatively by the taxpayer	0,00
Received Cumulatively by dependents	0,00
Taxable Income from Rural Activity	0,00
TOTAL	214.818,61

DEDUCTIONS

Contributions to the official and closed complementary pension systems referred to in § 15 of Article 40 of the CF (Federal Constitution)/1988 (up to the sponsor limit)	10.874,30
Contribution to the official pension system (Income received cumulatively)	0,00
Contribution to the complementary pension system, including the amount for the closed systems referred to in Article 40, § 15, of the CF (Federal Constitution)/1988, which exceeds the sponsor's limit	0,00
Dependents	0,00
Education Expenses	0,00
Medical Expenses	19.490,55
Judicial Alimony	0,00
Alimony by Public Deed	0,00
Judicial Alimony (Income received cumulatively)	0,00
Cash book	0,00
TOTAL	30.364,85

TAX DUE

Tax Base	184.453,76
Tax Due	39.983,80
Incentive Deduction	0,00
Tax Due I	39.983,80
Tax Due RRA (on received accumulated income)	0,00
Tax rate (%)	18,61
Total Tax Due	39.983,80

TAX TO BE REFUNDED	4.280,64
BALANCE OF TAX PAYABLE	0,00

INSTALLMENT PLAN

Installment Amount	0,00
Number of Installments	0

TAX PAID

Tax Withheld at Source by the Taxpayer	44.264,44
Tax Withheld at Source by Dependents	0,00
Taxpayer's Carnê-Leão	0,00
Dependents' Carnê-Leão	0,00
Complementary Tax	0,00
Tax Paid Abroad	0,00
Tax Withheld at Source (Law No. 11.033/2004)	0,00
Tax Withheld RRA	0,00
Total Tax Paid	44.264,44

BANKING INFORMATION

Account Type	Checking Account
Bank	001
Branch (without verification digit)	923
Account for credit	57881 9

ASSET EVOLUTION

Assets and Rights on 12/31/2023	254.230,71
Assets and Rights on 12/31/2024	322.271,91
Encumbrances and Real Liabilities on 12/31/2023	158.396,88
Encumbrances and Real Liabilities on 12/31/2024	98.674,26

OTHER INFORMATION

Exempt and non-taxable income	13.873,56
Income subject to exclusive/definitive taxation	15.823,05
Taxable income - tax with suspended liability	0,00
Judicial Deposits of Tax	0,00
Tax Paid on Capital Gains	0,00
Tax Paid on Capital Gains Foreign Currency - Assets, Rights, and Financial Investments	0,00
Total tax withheld at source (Law No. 11.033/2004), as per the data provided by the taxpayer	0,00
Tax Paid on Variable Income	0,00
Donations to Political Parties and Candidates for Elective Office	0,00
Tax Payable on Capital Gain - Foreign Currency in Cash	0,00
Deferred Tax on Capital Gains	0,00
Tax Due on Capital Gains	0,00
Tax Due on Net Income from Variable Income	0,00
Tax Due on Capital Gains in Foreign Currency - Assets, Rights, and Financial Investments	0,00

I, André Vinícius Inacio Penna Mello, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 23, 2026.

NOME: HANNA CAROLINA CAMPOS FERREIRA
CPF: 067.410.916-37 **IMPOSTO SOBRE A RENDA - PESSOA FÍSICA**
DECLARAÇÃO DE AJUSTE ANUAL **EXERCÍCIO 2025** **ANO-CALENDÁRIO 2024**

IDENTIFICAÇÃO DO CONTRIBUINTE

Nome:	HANNA CAROLINA CAMPOS FERREIRA	CPF:	067.410.916-37
Data de Nascimento:	25/09/1984		

Possui cônjuge ou companheiro(a)? Não

Era residente no exterior e passou a ser residente no Brasil em 2024? Não

Houve alteração de dados cadastrais? Sim

Um dos declarantes é pessoa com doença grave ou portadora de deficiência física ou mental? Não

Endereço:	RUA MATA MACHADO	Número:	113
Complemento:		Bairro/Distrito:	CENTRO
Município:	JANUARIA	UF:	MG
CEP:	39480-000	DDD/Telefone:	
E-mail:	HANNACCF@GMAIL.COM	DDD/Celular:	(31) 99642-4522

Natureza da Ocupação: 21 - Membro ou servidor público da administração direta federal

Ocupação Principal: 228 - Veterinário, patologista (veterinário) e zootecnista

Tipo de declaração: Declaração Retificadora

Nº do recibo da declaração anterior do exercício de 2025: 08.66.30.49.53-65

PROTEGIDA POR SIGILO FISCAL

DEPENDENTES

Sem Informações

ALIMENTANDOS

Sem Informações

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA JURÍDICA PELO TITULAR

(Valores em Reais)

NOME DA FONTE PAGADORA	REND. RECEBIDOS DE PES. JURÍDICA	CONTR. PREVID. OFICIAL	IMPOSTO RETIDO NA FONTE	13º SALÁRIO	IRRF SOBRE 13º SALÁRIO
MINISTERIO DA AGRICULTURA, PECUARIA E ABASTECIMENTO CNPJ/CPF: 00.396.895/0026-83	214.818,61	10.874,30	44.264,44	13.089,48	3.729,10
TOTAL	214.818,61	10.874,30	44.264,44	13.089,48	3.729,10

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA JURÍDICA PELOS DEPENDENTES

Sem Informações

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA FÍSICA E DO EXTERIOR PELO TITULAR

Sem Informações

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA FÍSICA E DO EXTERIOR PELOS DEPENDENTES

Sem Informações

RENDIMENTOS ISENTOS E NÃO TRIBUTÁVEIS

(Valores em Reais)

12. Rendimentos de cadernetas de poupança, letras hipotecárias, letras de crédito do agronegócio e imobiliário (LCA e LCI) e certificados de recebíveis do agronegócio e imobiliários (CRA e CRI) 76,30

Beneficiário	CPF	CNPJ da Fonte Pagadora	Nome da Fonte Pagadora	Valor
Titular	067.410.916-37	00.000.000/0001-91	BANCO DO BRASIL	76,30

99. Outros 13.797,26

Beneficiário	CPF	CPF/CNPJ da Fonte Pagadora	Nome da Fonte Pagadora	Descrição	Valor
Titular	067.410.916-37	00.396.895/0026-83	MINISTERIO DA AGRICULTURA, PECUARIA E ABASTECIMENTO	OUTROS (BOLSA CAPES, PASEP, AUXILIO MORADIA...)	10.632,00
Titular	067.410.916-37	00.396.895/0026-83	MINISTERIO DA AGRICULTURA, PECUARIA E ABASTECIMENTO	RESSARCIMENTO A SAUDE	1.408,17
Titular	067.410.916-37	34.027.774/0001-28	FII RFOF11 (34.027.774/0001-28)	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI 8.668/	181,65
Titular	067.410.916-37	29.216.463/0001-77	FII MGFF11 (29216463000177)	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI 8.668/	529,00
Titular	067.410.916-37	17.329.029/0001-14	FII RBFF11 (17329029000114)	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI 8.668/	189,10
Titular	067.410.916-37	22.610.500/0001-88	XP PROPERTIES FII (22610500000188)	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI 8.668/	21,75
Titular	067.410.916-37	35.507.457/0001-71	RVBI11 (35.507.457/0001-71)	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI 8.668/	128,25
Titular	067.410.916-37	59.281.253/0001-23	FII BRCR11 (59281253000123)	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI 8.668/	126,06
Titular	067.410.916-37	59.281.253/0001-23	FII BRCR11 (59281253000123)	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI 8.668/	150,64
Titular	067.410.916-37	32.754.734/0001-52	FII QAGR11 (32754734000152)	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI 8.668/	163,43
Titular	067.410.916-37	32.903.702/0001-71	FII SARE11 (32903702000171)	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI 8.668/	75,81
Titular	067.410.916-37	02.332.886/0001-04	XP INVESTIMENTOS CCTVM S/A	0703 - FUNDOS DE INVESTIMENTO IMOBILIARIO (FII) - LEI	191,40

PROTEGIDA POR SIGILO FISCAL

8.668/

TOTAL 13.873,56

RENDIMENTOS SUJEITOS À TRIBUTAÇÃO EXCLUSIVA / DEFINITIVA

(Valores em Reais)

01. 13º salário	13.089,48
06. Rendimentos de aplicações financeiras	2.733,57

Beneficiário	CPF	CNPJ da Fonte Pagadora	Nome da Fonte Pagadora	Valor
Titular	067.410.916-37	02.332.886/0001-04	XP INVESTIMENTOS CCTVM S/A	2.184,46
Titular	067.410.916-37	34.197.727/0001-22	MORE11 (34.197.727/0001-22)	481,02
Titular	067.410.916-37	59.281.253/0001-23	FII BRCR11 (59281253000123)	68,09

TOTAL 15.823,05

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA JURÍDICA PELO TITULAR (IMPOSTO COM EXIGIBILIDADE SUSPENSA)

Sem Informações

RENDIMENTOS TRIBUTÁVEIS RECEBIDOS DE PESSOA JURÍDICA PELOS DEPENDENTES (IMPOSTO COM EXIGIBILIDADE SUSPENSA)

Sem Informações

RENDIMENTOS TRIBUTÁVEIS DE PESSOA JURÍDICA RECEBIDOS ACUMULADAMENTE PELO TITULAR

Sem Informações

RENDIMENTOS TRIBUTÁVEIS DE PESSOA JURÍDICA RECEBIDOS ACUMULADAMENTE PELOS DEPENDENTES

Sem Informações

IMPOSTO PAGO / RETIDO

(Valores em Reais)

01. Imposto complementar	0,00
02. Imposto pago no exterior pelo titular e pelos dependentes	0,00
Imposto devido com os rendimentos no exterior	0,00
Imposto devido sem os rendimentos no exterior	0,00
Diferença a ser considerada para cálculo do imposto (limite legal)	0,00
03. Imposto sobre a renda na fonte (Lei 11.033/2004)	0,00
04. Imposto retido na fonte do titular	44.264,44
05. Imposto retido na fonte dos dependentes	0,00
06. Carnê-Leão do titular	0,00
07. Carnê-Leão dos dependentes	0,00

PAGAMENTOS EFETUADOS

(Valores em Reais)

CÓD.	NOME DO BENEFICIÁRIO	CPF/CNPJ DO BENEFICIÁRIO	VALOR PAGO	PARC. NÃO DEDUTÍVEL

Titular

PROTEGIDA POR SIGILO FISCAL

PAGAMENTOS EFETUADOS

(Valores em Reais)

CÓD.	NOME DO BENEFICIÁRIO	CPF/CNPJ DO BENEFICIÁRIO	VALOR PAGO	PARC. NÃO DEDUTÍVEL
12	MARIA DA GLORIA SOARES DE MELO	032.764.826-06	7.000,00	0,00
Descrição:	SESSOES DE PSICOTERAPIA.			
21	VIVIANE SANTOS DIAS NOGUEIRA	16.953.074/0001-82	2.685,00	0,00
Descrição:	SERVICOS FISIOTERAPICOS			
21	CLINICA PSIQUIATRICA SILVEIRA JUNIOR LTDA - ME	12.238.097/0001-54	1.200,00	0,00
Descrição:	ATENDIMENTO MEDICO.			
21	LABORATORIO SANTA CLARA LTDA	18.878.108/0001-47	456,00	0,00
Descrição:	EXAMES LABORATORIAIS.			
21	CLINICA PROTESE DENTARIA ESPECIALIZADA LTDA	08.043.687/0001-54	250,00	0,00
Descrição:	TRATAMENTO DENTARIO			
21	MATER CLINICAS & IMAGENS SERVICOS MEDICOS LTDA	21.331.232/0001-00	1.080,00	0,00
Descrição:	CONSULTA MEDICA			
21	CLINICA MEDICA URODERM LTDA - ME	13.226.401/0001-06	370,00	0,00
Descrição:	CONSULTA MEDICA REALIZADA PELO DR. CONRADO LEONEL MENEZES, CRM: 42201-MG EM PACIENTE: HANNA CAROLINA CAMPOS FERREIRA.			
21	HOSPITAL DIA DR. GIOVANI LTDA	00.730.276/0001-25	280,00	0,00
Descrição:	PRESTACAO DE SERVICOS MEDICOS - CONSULTA A ORTOPEDISTA.			
21	CLINICA VELOSO LTDA - ME	05.771.942/0001-97	300,00	0,00
Descrição:	REFERENTE A CONSULTA ORTOPEDICA DE HANNA CAROLINA CAMPOS FERREIRA.			
21	SAYONARA GUEDES NOVAIS EIRELI - ME	30.269.701/0001-91	350,00	0,00
Descrição:				
26	QUALICORP ADMINISTRADORA DE BENEFICIOS S/A	07.658.098/0001-18	5.519,55	0,00
Descrição:				
70	EXATA EMPREENDIMENTOS IMOBILIARIOS	14.591.311/0001-87	15.156,00	0,00
Descrição:	PAGAMENTO DE ALUGUEIS DE 01/01/2024 A 30/11/2024.			
70	JAIR AMINTAS NEGOCIOS IMOBILIARIOS	30.619.009/0001-46	2.604,23	0,00
Descrição:	PAGAMENTO DE ALUGUEIS DE NOVEMBRO E DEZEMBRO/2024.			

DOAÇÕES EFETUADAS

Sem Informações

PROTEGIDA POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS

(Valores em Reais)

Atualizou o valor de algum bem imóvel e pagou o ganho de capital até 16/12/2024 de acordo com a Lei nº 14.973/2024?	Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
01	13	AQUISICAO DE LOTE - AL PIRAMIDE EMPREENDIMENTOS IMOBILIARIOS LTDA	86.093,52	145.816,14

105 - Brasil

Inscrição Municipal (IPTU):

Logradouro: TERRASALPHA MONTES CLAROS
Nº: LT 15
Comp.: QUADRA Y1
Bairro:
Município: MONTES CLAROS
UF: MG CEP: 3940000
Área Total: 332,5 m²
Data de Aquisição: 23/04/2023
Registrado no Cartório: Sim
Nome Cartório: OFICIO DO 2O REGISTRO DE IMOVEIS
Matrícula: 97966

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
02	01	VEICULO FOX 1.6 CONNECT VOLKSWAGEN	57.427,00	56.877,00

105 - Brasil

RENAVAM: 01229854174

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
04	02	TESOURO DIRETO	17.691,11	18.800,59

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ: 02.332.886/0001-04

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
04	02	BB CDB DI PARCERIA	8.000,00	8.000,00

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ: 00.000.000/0001-91

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
04	02	RENDA FIXA - CDB DE: BANCO AGIBANK S/A 15/07/2024 E 15/07/2025; VIA CERTA FINANCIADORA S/A 14/10/2024; WILL FINANCEIRA 17/10/2024, 23/10/26, 20/10/28; BANCO DIGIMAIS S/A 15/07/2025; BANCO PAN 16/11/2025; BANCO ORIGINAL 15/07/2026; BANCO MASTER S/A 13/10/2015, 05/02/2026, 14/10/2026, 09/12/2026 E 17/03/2027; LEBES FINANCEIRA S/A 17/03/2025; BANCO ORIGINAL S/A 17/03/2027; FACTA S/A 13/10/2025; BANCO MASTER DE INVESTIMENTO 05/02/26 E 22/08/28; BANCO VOITER 23/02/26.	30.000,00	36.050,35

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ: 02.332.886/0001-04

PROTEGIDA POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS

(Valores em Reais)

Atualizou o valor de algum bem imóvel e pagou o ganho de capital até 16/12/2024 de acordo com a Lei nº 14.973/2024?	Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
06	01	CONTA CORRENTE	1.169,17	473,20

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ: 00.000.000/0001-91

Banco: 001 Agência: 0923 Conta: 57881-9 Conta Pagamento? Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
06	99	SALDO EM CONTA XP	4.119,60	277,00

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ: 02.332.886/0001-04

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
06	99	SALDO EM POUPANCA BB	0,00	5.000,00

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ: 00.000.000/0001-91

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	QUASAR AGRO - FI MOB: 26 COTAS DO FII QAGR11 AO CUSTO UNITARIO DE R$ 49,73 CUSTODIADO NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82)	1.518,38	1.518,38

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ do Fundo: 32.754.734/0001-52

Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	RIO BRAVO FUNDO DE FII - 26 COTAS DO FII RBFF11 AO CUSTO UNITARIO DE R$ 62,63 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	1.870,85	1.870,85

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ do Fundo: 17.329.029/0001-14

Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	FII RB CAP - 21 COTAS DO FII RFOF11 AO CUSTO UNITARIO DE R$ 76,26 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	1.601,42	1.601,42

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ do Fundo: 34.027.774/0001-28

Negociados em Bolsa: Não

PROTEGIDA POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS

(Valores em Reais)

Atualizou o valor de algum bem imóvel e pagou o ganho de capital até 16/12/2024 de acordo com a Lei nº 14.973/2024?	Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	FI IMOBILIA UNICA - 19 COTAS DO FII MGFF11 AO CUSTO UNITARIO DE R$ 68,08 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82). VIDE FATO RELEVANTE .	1.470,04	1.470,04

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ do Fundo: 29.216.463/0001-77
Negociados em Bolsa: Sim Código de Negociação: MGFF11

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	BTG PACTUAL CORPORATE OFFICE FUND FII - 22 COTAS DO FII BRCR11 AO CUSTO UNITARIO DE R$ 82,76 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	1.820,72	1.820,72

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ do Fundo: 59.281.253/0001-23
Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	MORE REAL ESTATE FOF FII FUNDO UNICA - 17 COTAS DO FII MORE11 AO CUSTO UNITARIO DE R$ 85,46 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	1.672,23	1.672,23

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ do Fundo: 34.197.727/0001-22
Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	FII RBR ALPHA MULTIESTRATEGIA REAL ESTATE - 20 COTAS DO FII RBRF11 AO CUSTO UNITARIO DE R$ 78,13 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	1.562,60	1.562,60

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ do Fundo: 59.281.253/0001-23
Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	XP PROPERTIES FII - 25 COTAS DO FII XPPR11 AO CUSTO UNITARIO DE R$ 64,89 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	1.622,25	1.622,25

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37
CNPJ do Fundo: 22.610.500/0001-88
Negociados em Bolsa: Não

PROTEGIDA POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS

(Valores em Reais)

Atualizou o valor de algum bem imóvel e pagou o ganho de capital até 16/12/2024 de acordo com a Lei nº 14.973/2024?	Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	XP SELECTION FUNDO DE FUNDOS DE INVESTIMENTO IMOBILIARIO - 22 COTAS DO FII XPSF11 AO CUSTO UNITARIO DE R$ 77,70 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	1.709,40	1.709,40

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ do Fundo: 02.332.886/0001-04

Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	SANTANDER RENDA DE ALUGUEIS - 21 COTAS DO FII SARE11 AO CUSTO UNITARIO DE R$ 73,61 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	1.545,81	1.545,81

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ do Fundo: 32.903.702/0001-71

Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	03	RVBI11 (35.507.457/0001-71): AQUISICAO DE 19 COTAS.	0,00	1.231,20

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ do Fundo: 35.507.457/0001-71

Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	06	ISHARES BOVA CI - 75 COTAS DO ETF BOVA11 AO CUSTO UNITARIO DE R$ 115,31 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	9.530,06	9.530,06

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ do Fundo: 10.406.511/0001-61

Negociados em Bolsa: Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	06	ISHARES S&P 500 - 47 COTAS DO ETF IVVB11 AO CUSTO UNITARIO DE R$ 281,33 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82).	16.609,97	16.609,97

105 - Brasil

Bem ou direito pertencente ao: Titular CPF: 067.410.916-37

CNPJ do Fundo: 19.909.560/0001-91

Negociados em Bolsa: Não

PROTEGIDA POR SIGILO FISCAL

DECLARAÇÃO DE BENS E DIREITOS

(Valores em Reais)

Atualizou o valor de algum bem imóvel e pagou o ganho de capital até 16/12/2024 de acordo com a Lei nº 14.973/2024?	Não

GRUPO	CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024
07	06	ISHARES SMAL CI - 50 COTAS DO ETF SMAL11 AO CUSTO UNITARIO DE R$ 309,68 CUSTODIADAS NA CORRETORA RICO (PROPRIEDADE DA XP INVESTIMENTOS, SOB CNPF 02.332.886/0016-82) 105 - Brasil Bem ou direito pertencente ao: Titular CPF: 067.410.916-37 CNPJ do Fundo: 10.406.600/0001-08 Negociados em Bolsa: Não	7.196,58	7.196,58
99	07	FII RBFF11 (17329029000114) - CREDITO EM TRANSITO. 105 - Brasil CNPJ: 17.329.029/0001-14	0,00	16,12
TOTAL			254.230,71	322.271,91

DÍVIDAS E ÔNUS REAIS

(Valores em Reais)

CÓDIGO	DISCRIMINAÇÃO	SITUAÇÃO EM 31/12/2023	SITUAÇÃO EM 31/12/2024	VALOR PAGO EM 2024
16	AQUISICAO DE LOTE - AL PIRAMIDE EMPREENDIMENTOS IMOBILIARIOS LTDA	158.396,88	98.674,26	59.722,62
TOTAL		158.396,88	98.674,26	59.722,62

DOAÇÕES A PARTIDOS POLÍTICOS E CANDIDATOS A CARGOS ELETIVOS

Sem Informações

PROTEGIDA POR SIGILO FISCAL

DEMONSTRATIVO DE ATIVIDADE RURAL - BRASIL

DADOS E IDENTIFICAÇÃO DO IMÓVEL EXPLORADO - BRASIL

Sem Informações

RECEITAS E DESPESAS - BRASIL

Sem Informações

APURAÇÃO DO RESULTADO - BRASIL

Sem Informações

MOVIMENTAÇÃO DO REBANHO - BRASIL

Sem Informações

BENS DA ATIVIDADE RURAL - BRASIL

Sem Informações

DÍVIDAS VINCULADAS À ATIVIDADE RURAL - BRASIL

Sem Informações

PROTEGIDA POR SIGILO FISCAL

DEMONSTRATIVO DE ATIVIDADE RURAL - EXTERIOR

DADOS E IDENTIFICAÇÃO DO IMÓVEL EXPLORADO - EXTERIOR

Sem Informações

RECEITAS E DESPESAS - EXTERIOR

Sem Informações

APURAÇÃO DO RESULTADO - EXTERIOR

Sem Informações

MOVIMENTAÇÃO DO REBANHO - EXTERIOR

Sem Informações

BENS DA ATIVIDADE RURAL - EXTERIOR

Sem Informações

DÍVIDAS VINCULADAS À ATIVIDADE RURAL - EXTERIOR

Sem Informações

DEMONSTRATIVO DA APURAÇÃO DOS GANHOS DE CAPITAL

Sem Informações

PROTEGIDA POR SIGILO FISCAL

RENDA VARIÁVEL - OPERAÇÕES COMUNS/DAYTRADE - TITULAR

GANHOS LÍQUIDOS OU PERDAS - JAN

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - FEV

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - MAR

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - ABR

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - MAI

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - JUN

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - JUL

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - AGO

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - SET

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - OUT

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - NOV

Sem Informações

GANHOS LÍQUIDOS OU PERDAS - DEZ

Sem Informações

RENDA VARIÁVEL - OPERAÇÕES COMUNS/DAYTRADE - DEPENDENTES

Sem Informações

FUNDOS DE INVESTIMENTO IMOBILIÁRIO OU NAS CADEIAS PRODUTIVAS AGROINDUSTRIAIS - TITULAR

Sem Informações

FUNDOS DE INVESTIMENTO IMOBILIÁRIO OU NAS CADEIAS PRODUTIVAS AGROINDUSTRIAIS - DEPENDENTES

Sem Informações

DOAÇÕES DIRETAMENTE NA DECLARAÇÃO - ECA

Sem Informações

DOAÇÕES DIRETAMENTE NA DECLARAÇÃO - IDOSO

Sem Informações

PROTEGIDA POR SIGILO FISCAL

NOME: HANNA CAROLINA CAMPOS FERREIRA
CPF: 067.410.916-37 **IMPOSTO SOBRE A RENDA - PESSOA FÍSICA**
DECLARAÇÃO DE AJUSTE ANUAL **EXERCÍCIO 2025** **ANO-CALENDÁRIO 2024**

RESUMO — TRIBUTAÇÃO UTILIZANDO AS DEDUÇÕES LEGAIS

RENDIMENTOS TRIBUTÁVEIS

Recebidos de Pessoa Jurídica pelo titular	214.818,61
Recebidos de Pessoa Jurídica pelos dependentes	0,00
Recebidos de Pessoa Física/Exterior pelo titular	0,00
Recebidos de Pessoa Física/Exterior pelos dependentes	0,00
Recebidos acumuladamente pelo titular	0,00
Recebidos acumuladamente pelos dependentes	0,00
Resultado tributável da Atividade Rural	0,00
TOTAL	214.818,61

DEDUÇÕES

Contribuições às previdências oficial e complementar fechada de que trata o § 15 do art. 40 da CF/1988 (até o limite do patrocinador)	10.874,30
Contribuição à previdência oficial (Rendimentos recebidos acumuladamente)	0,00
Contribuição à prev. complementar, inclusive o valor para as fechadas de que trata o § 15 do art. 40 da CF/1988 que exceder o limite do patrocinador	0,00
Dependentes	0,00
Despesas com instrução	0,00
Despesas médicas	19.490,55
Pensão alimentícia judicial	0,00
Pensão alimentícia por escritura pública	0,00
Pensão alimentícia judicial (Rendimentos recebidos acumuladamente)	0,00
Livro caixa	0,00
TOTAL	30.364,85

IMPOSTO DEVIDO

Base de cálculo do imposto	184.453,76
Imposto devido	39.983,80
Dedução de incentivo	0,00
Imposto devido I	39.983,80
Imposto devido RRA	0,00
Aliquota efetiva (%)	18,61
Total do imposto devido	39.983,80

IMPOSTO A RESTITUIR	4.280,64
SALDO DE IMPOSTO A PAGAR	0,00

PARCELAMENTO

Valor da quota	0,00
Número de Quotas	0

IMPOSTO PAGO

Imposto retido na fonte do titular	44.264,44
Imp. retido na fonte dos dependentes	0,00
Carnê-Leão do titular	0,00
Carnê-Leão dos dependentes	0,00
Imposto complementar	0,00
Imposto pago no exterior	0,00
Imposto retido na fonte (Lei nº 11.033/2004)	0,00
Imposto retido RRA	0,00
Total do imposto pago	44.264,44

INFORMAÇÕES BANCÁRIAS

Tipo de Conta	Conta Corrente
Banco	001
Agência (sem DV)	923
Conta para crédito	57881 9

PROTEGIDA POR SIGILO FISCAL

EVOLUÇÃO PATRIMONIAL

Bens e direitos em 31/12/2023	254.230,71
Bens e direitos em 31/12/2024	322.271,91
Dívidas e ônus reais em 31/12/2023	158.396,88
Dívidas e ônus reais em 31/12/2024	98.674,26

OUTRAS INFORMAÇÕES

Rendimentos isentos e não tributáveis	13.873,56
Rendimentos sujeitos à tributação exclusiva/definitiva	15.823,05
Rendimentos tributáveis - imposto com exigibilidade suspensa	0,00
Depósitos judiciais do imposto	0,00
Imposto pago sobre Ganhos de Capital	0,00
Imposto pago Ganhos de Capital Moeda Estrangeira - Bens, direitos e Aplicações Financeiras	0,00
Total do imposto retido na fonte (Lei nº11.033/2004), conforme dados informados pelo contribuinte	0,00
Imposto pago sobre Renda Variável	0,00
Doações a Partidos Políticos e Candidatos a Cargos Eletivos	0,00
Imposto a pagar sobre o Ganho de Capital - Moeda Estrangeira em Espécie	0,00
Imposto diferido dos Ganhos de Capital	0,00
Imposto devido sobre Ganhos de Capital	0,00
Imposto devido sobre ganhos líquidos em Renda Variável	0,00
Imposto devido sobre Ganhos de Capital Moeda Estrangeira - Bens, direitos e aplic. financeiras	0,00

PROTEGIDA POR SIGILO FISCAL

Checking Account Statement

Client HANNA C CAMPOS FERREIRA

Period: 02/01 to 02/28/2026 Branch: [redacted] Account: [redacted]

Transactions

Day	Batch	Document	Description	Amount
01/30/2026			Previous Balance	[redacted]
02/02/2026	99020	600923400057881	Transfer received 02/02 7:32 p.m. HANNA C CAMPOS FERREIRA	15.949,39 (+)
02/02/2026	13105	20201	[redacted]	[redacted]
02/02/2026	13105	20202	[redacted]	[redacted]
02/02/2026	13105	20203	[redacted]	[redacted]
02/02/2026	13105	20204	[redacted]	[redacted]
02/02/2026	13105	20205	[redacted]	[redacted]
02/02/2026	13601	511058901	[redacted]	[redacted]
02/02/2026	13601	391100701	[redacted]	[redacted]
02/03/2026	99008	145659	[redacted]	[redacted]
02/03/2026	13105	20301	[redacted]	[redacted]
			[redacted]	[redacted]
02/04/2026	99008	146068	[redacted]	[redacted]
02/04/2026	99008	276325	[redacted]	[redacted]
02/04/2026	13105	20401	[redacted]	[redacted]
02/04/2026	13105	20402	[redacted]	[redacted]
02/04/2026	13105	20403	[redacted]	[redacted]
			[redacted]	[redacted]
02/05/2026	99008	145064	[redacted]	[redacted]
02/05/2026	13105	20501	[redacted]	[redacted]
			[redacted]	[redacted]
02/06/2026	99008	148327	[redacted]	[redacted]
			[redacted]	[redacted]
02/09/2026	99020	230092300040000	[redacted]	[redacted]
02/09/2026	13105	20901	[redacted]	[redacted]
02/09/2026	13105	20902	[redacted]	[redacted]


HF
Hanna
Investment Account
Invest by Goal
My Goals
Credit
REITs
Total invested + Investment Account
Updated today at 7:21 PM
R$ 120.837,99
Invest
Withdraw
Return
As of 02/24/2026
R$ 22.134,11
16,86 %
117,78% of CDI
Mar/25
Jun/25
Sep/25
Dec/25
Feb /26
Investments
Bank
Trade
Products

TERRAS ALPHAVILLE MONTES CLAROS RESIDENTIAL SUBDIVISION PHASE 02

Lot 15 of Block Y1

PROMISSORY PURCHASE AND SALE AGREEMENT AND OTHER COVENANTS

SUMMARY TABLE

By this private instrument,

CHAPTER I - PARTIES:

1.1 on one hand, as granting promissory seller**: AL PIRÂMIDE EMPREENDIMENTOS IMOBILIÁRIOS LTDA.**, a company headquartered in Montes Claros, State of Minas Gerais, at Avenida Mestra Fininha, No.3300, room 4F, Morada do Sol Neighborhood, ZIP Code 39.403-222, registered under the CNPJ No. 18.992.766/0001-65, with its articles of association registered with the Commercial Registry of the State of Minas Gerais JUCEMG, under NIRE (Business Registration Number) 3120996320-0, on 10/02/2013, hereinafter referred to as "**SELLER**", regardless of gender and number;

1.2 on the other hand, as promissory buyer, hereinafter simply referred to as "BUYER", regardless of gender and number of the purchasers:

Name: Hanna Carolina Campos Ferreira
Nationality: Brazilian
Marital Status: Single
ID: MG-12.992.107 / Issuing Authority: SSP/MG
CPF/CNPJ: 067.410.916-37
Occupation: Veterinarian
Home Address: Rua Domingos Pereira de Souza No. 56 Unit: / ZIP Code: 39440-027
Neighborhood: Veredas / City: Janauba / State: MG
Date of Birth: 09/25/1984
Telephone: 31996424522
Email: hannaccf@gmail.com

Proportion of acquisition of each **BUYER**: 100.00%.

1.2.1 in the event there is more than one **BUYER**, they are jointly and severally liable for all obligations set forth in this agreement ("Agreement"), especially regarding the payment of the price;

1.3 furthermore, as consenting party, in the capacity of developer of the Subdivision, ALPHAVILLE URBANISMO S.A., headquartered at Avenida das Nações Unidas, 8501, 3rd floor, Pinheiros Neighborhood, São Paulo – SP, ZIP Code: 05425-070, registered under the CNPJ No. 00.446.918/0001-69, ("**ALPHAVILLE**");

CHAPTER II – PROPERTY:

2.1 Lot 15 of Block Y1, part of the Terras Alphaville Montes Claros Residential Subdivision Phase 02, commercially known as Terras Alphaville Montes Claros Subdivision ("Subdivision"), located in the City of Montes Claros - MG, registered under No. R06, on August 22, 2022, in Registration No. 66.587, of the 2nd Real Estate Registry Office of Montes Claros - MG.

2.2 Said lot ("Property") has the following description and boundaries: 332.64 m^2, being land Lot No. 15 of Block No. Y1, with an area of 332.64 m^2, located on Alameda Joao de Barro, subdivision named "Terras Alphaville Montes Claros", in this city of Montes Claros/MG, with the following boundaries and distances: on the front, with the aforementioned Alameda Joao de Barro, for a distance of 12.32 meters; on the rear, with Lot No. 14, for a distance of 12.32 meters; on the right side, with Passageway 01 (Part B), for a distance of 27.00 meters; on the left side, with Lot No. 16, for a distance of 27.00 meters, with Registration No. 97,966 of the 2nd Real Estate Registry Office of Montes Claros - MG.

2.3 The BUYER acknowledges that lots: 01 to 28 of block T1; lots 01 to 28 of block U1; lots 01 to 12 of block V1; lots 01 to 24 of block W1; and lots 13 to 22 of block X1, were duly pledged in favor of the City of Montes Claros, as a guarantee for the execution of the infrastructure works of the Subdivision, including the Property, having no objections thereto.

CHAPTER III - PRICE AND PAYMENT TERMS

3.1 The purchase price of the Property will be R$ 232,265.88 (Two hundred thirty-two thousand, two hundred sixty-five reais and eighty-eight cents), to be paid by the **BUYER** as follows:

D4Sign 36a0e828-31cd-4b25-88b0-47c3d9c2b4e3 – Verify the signatures at http://secure.d4sign.com.br/verificar
Document electronically signed, pursuant Provisionary Measure 2.200-2/01, Article 10, §2.

a.1) the installment of R$ 42,775.48 (Forty-two thousand, seven hundred seventy-five reais and forty-eight cents) (the "Down Payment" Installment), in this act, for which the **SELLER** gives due receipt, subject to the effective bank clearance of the check(s) representing it, electronic transfer between accounts, or by payment of a bank slip:

i) the proof of payment is a condition for the existence of this legal transaction; therefore, in the event of non-clearance of the check(s), at the **SELLER'S** discretion, this Agreement shall be without any effect, and the legal transaction object thereof shall be considered non-existent, regardless of any judicial or extrajudicial notice or notification, allowing the SELLER to freely dispose of the Property herein committed and transact it with third parties;

ii) The balance of the price, in its nominal value, subject to the monetary adjustment hereinafter stipulated by mutual agreement between the contracting parties, shall be paid by the **BUYER** to the **SELLER** as follows:

(a.2) Adjusted Installments in 80 (eighty) installment(s) in the amount of R$ 3,391.16 (Three thousand, three hundred ninety-one reais and sixteen cents) each, the first falling due on 05/18/2023 and, should they occur, the remaining ones on the same day of the subsequent months.

The installments in sections a.2 already include interest of 0.949009% per month under the Price Table Amortization System.

3.2 THE BROKERAGE COMMISSION FOR THE INTERMEDIATION OF THIS PURCHASE AND SALE IS NOT INCLUDED IN THE PRICE.
3.2.2 The **BUYER** is solely and exclusively responsible for paying the expense for brokerage services directly to the respective creditor (the real estate agency and/or the real estate broker), and under no circumstances may the **SELLER be** held liable for the payment of said expense, or for full or partial reimbursement in the event of termination due to default by any of the contracting parties.
3.2.3 The amount of the brokerage services expense to be paid by the **BUYER** totals **R$ 12,224.52 (Twelve thousand, two hundred twenty-four reais and fifty-two cents)**, and it does not form part of the sale price of the property subject to this Instrument, with which the **BUYER** fully agrees.
3.2.4 The **BUYER** is aware that, in the event of termination of this instrument, the amount referred to in this clause shall not be considered for the calculation of any refund.
3.2.5 The **BUYER** is aware that, under current regulations, the above amount may be included in their income tax as an acquisition cost, pursuant to Normative Instruction SRF No. 84/2001.
3.2.6 In order to preserve the economic-financial balance of this Agreement, the installments of the Price shall be adjusted in accordance with item 12.2 of the General Rules.

3.3 The BUYER shall also pay to the SELLER the AGREEMENT MANAGEMENT FEE in the amount of R$ 10.00 (ten reais) monthly, adjusted by the annual variation of the IGP-M/FGV in the months of January of each year.

CHAPTER IV - PURCHASE AND SALE INSTRUMENT:

4.1 Without prejudice to the application of the other rules regarding the granting of the deed set forth in Chapter XX of the General Rules, it is established that, in the event the purchase price set forth in item 3.1 above is paid in cash or is defined for payment in a schedule of fewer than 12 (twelve) successive monthly installments, within a maximum period of up to 60 (sixty) days, counted from the prior notice to be given to the **BUYER** by the **SELLER** to this effect, the definitive public instrument of purchase and sale shall be executed, in accordance with the conditions defined in this instrument.
4.1.1 In the event the balance of the price indicated in item 3.1 above is defined for payment in a schedule of more than 12 (twelve) successive monthly installments, within a maximum period of up to 60 (sixty) days counted from the prior notice to be given to the **BUYER** by the **SELLER** to this effect, the public instrument of purchase and sale with an accessory covenant of deed of trust in guarantee regarding the Property shall be executed, pursuant to Federal Law No. 9,514/97 and in accordance with the conditions to be presented by the **SELLER**;

4.1.2 the BUYER acknowledges and expressly agrees that, in order for the public instrument of purchase and sale with an accessory covenant of deed of trust in guarantee mentioned in this item to be executed, it is essential: (i) ratification of the BUYER's adherence to the Death and Disability Insurance Policy ("MIP"), which shall be in force during the entire period of payment of the balance, aiming to guarantee to the SELLER the payment of the insured sum upon the occurrence of death or permanent disability of the BUYER; (ii) the submission by the BUYER to the SELLER, when requested by the latter, of the necessary documents so that their credit analysis may be performed, subject to the SELLER's approval; (iii) that they are up to date with all obligations under this Agreement; (iv) that the public instrument of purchase and sale with deed of trust be duly executed and registered, in the manner defined in this instrument.

4.1.3 IN THE EVENT THE BUYER REFUSES TO EXECUTE THE INSTRUMENT, IN THE MANNER DESCRIBED IN THE ITEMS ABOVE OR IN ANY WAY IMPAIRS OR PREVENTS SAID EXECUTION AS DEFINED BY THE SELLER, A COMPENSATORY FINE IN THE AMOUNT OF 2% (TWO PERCENT) CALCULATED ON THE ADJUSTED VALUE OF THE AGREEMENT MAY BE APPLIED TO THEM, WITHOUT PREJUDICE TO DEMANDING THE IMMEDIATE REIMBURSEMENT OF ALL COSTS INCURRED TO ENABLE THE EXECUTION OF THE INSTRUMENT, SUCH AS EXPENSES WITH ITBI, EMOLUMENTS, AMONG OTHERS, DULY ADJUSTED.

D4Sign 36a0e828-31cd-4b25-88b0-47c3d9c2b4e3 – Verify the signatures at http://secure.d4sign.com.br/verificar
Document electronically signed, pursuant Provisionary Measure 2.200-2/01, Article 10, §2.

CHAPTER V - COMPLETION OF INFRASTRUCTURE WORKS AND POSSESSION:

5.1 The infrastructure works and improvements shall be carried out within a **period of 30 (thirty) months,** counted from the public launch of the Subdivision, which occurred on August 22, 2022**, observing the grace period of one hundred and eighty (180) days** ("Grace Period"), pursuant to Chapter XIV of the General Rules.

5.2 Even if the transfer of ownership has occurred in the manner provided for in this instrument, the **BUYER's** effective entry into possession shall occur on the date of mailing of a registered letter sent by the **SELLER** informing the completion of the infrastructure works of the Subdivision, as described in Chapter XIII of the General Rules.

5.3 As of the date of this Agreement, the **BUYER** assumes all obligations regarding taxes, fees, tariffs, improvement assessments, or any tax or expense that is or may come to be levied on the Property, even if their assessments are made in the name of the **SELLER** or third parties.

5.4 THE WORKS FOR THE BUILDINGS AND EQUIPMENT COMPRISING THE LEISURE AREA, ALSO DENOMINATED TERRAS ALPHAVILLE MONTES CLAROS CLUB, THE GATEHOUSE AND SUPPORT AREA, DESCRIBED IN ANNEX E (DESCRIPTIVE MEMORANDUM OF THE LEISURE AREAS AND SUPPORT AREAS) AND IN ITEM 14.2.3 BELOW, SHALL BE DELIVERED WITHIN UP TO 12 (TWELVE) MONTHS AFTER THE COMPLETION OF THE INFRASTRUCTURE WORKS OF PHASE 1 OF THE DEVELOPMENT.

CHAPTER VI - RESTRICTIONS ON USE AND OCCUPATION OF THE LOT AND OF THE ASSOCIATION

6.1 The **BUYER** is aware of and agrees to the restrictions that the **SELLER** and **ALPHAVILLE** established for the Subdivision, set forth in ANNEX B, an integral part of this Agreement, and in Chapter XVIII below.

6.2 Pursuant to Chapter XXII of the General Rules, the **BUYER** is aware of and agrees that the **SELLER** and **ALPHAVILLE** shall establish a civil association ("**ASSOCIATION**"), without profit, political, or religious purposes, to act on behalf of its members, whose bylaws shall be duly registered with the Civil Registry of Legal Entities, the membership of the rights holders of the lots in the **ASSOCIATION** **being an essential and necessary condition to serve the common interests of the residents of the Subdivision**. Thus, herein, the BUYER agrees to their membership in the ASSOCIATION, which shall be ratified through the execution of the respective Term of Enrollment in the same act as the execution of this instrument.

6.3 The **ASSOCIATION** shall be a non-profit entity that will aim, among other purposes, at the defense and preservation of collective or diffuse rights and interests, of any nature, of the residents of the Subdivision, promoting, on its own or through third parties it hires and appoints, the preservation of the characteristics of the Subdivision, ensuring its proper maintenance and use, and the provision of services for the benefit of its Members, both necessary and convenience services.

6.4 As of their entry into possession of the Property, the **BUYER** assumes all obligations related to the **ASSOCIATION**, and shall contribute to ordinary monthly maintenance expenses so that the **ASSOCIATION** may, on its own or through third parties hired by it, perform the services and basic activities necessary to achieve its purpose, as well as contribute to extraordinary expenses approved under said bylaws.

6.5 In addition to the provisions set forth in Chapter XXII of the General Rules, the **BUYER** declares that they are aware of the obligations and rights arising from their status as a Contributing Member, under the terms of the Bylaws of the **ASSOCIATION**, the draft of which forms an integral part hereof as ANNEX A.

6.6 The BUYER is aware that an expansion phase of the development may be implemented by the DEVELOPER, which shall be fully integrated into the Terras Alphaville Montes Claros Residential Subdivision Phase 01, forming a single development and utilizing the same perimeter enclosure. The BUYERS of the expansion phase shall be enrolled as full members in the Terras Alphaville Montes Claros Association, having the same rights and obligations as the buyers of the Terras Alphaville Montes Claros Residential Subdivision Phase 01, and may enjoy the common use areas of the Subdivision.

6.7 The BUYER is aware that, in the event another phase of the subdivision is implemented in an area contiguous to the Terras Alphaville Montes Claros Subdivision Phase 01, the ASSOCIATION shall be responsible for its administration, pursuant to the provisions set forth in the Bylaws of the Subdivision.

CHAPTER VII - MEANS OF COMMUNICATION AND ANNEXES:

7.1 The **BUYER** agrees that notices and communications regarding the Agreement, as well as information concerning the due dates of installments or payments of the Price, construction stage, requests for registration updates, invitations to meetings or for discussions of matters relevant to the Agreement, may be obtained by them at the address of the **SELLER**, or be sent by the **SELLER** by regular mail to their address set forth in **Chapter I**, or made available via internet, or via SMS to the mobile telephone line or email mentioned in the qualification of the **BUYER**, owned by the **BUYER**.

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7.2 The annexes listed below constitute integral parts of this Agreement, the contents of which are known to the **BUYER**, who declares their agreement therewith:

a) Bylaws of the ASSOCIATION and respective Term of Enrollment; (ANNEX A)

b) Subdivision Regulations (ANNEX B);

c) Leisure Area Regulations (ANNEX C);

d) Descriptive Memorandum of the Works (ANNEX D);

e) Descriptive Memorandum of the Leisure Areas and Support Areas (ANNEX E);

CHAPTER VIII - CONSEQUENCES OF THE TERMINATION OF THE AGREEMENT AND OF THE RIGHT OF WITHDRAWAL

8.1 IN THE EVENT OF TERMINATION OF THIS AGREEMENT MOTIVATED BY THE BUYER, THE SELLER MAY RETAIN, AS A PENALTY CLAUSE AND ADMINISTRATIVE EXPENSES, THE AMOUNT CORRESPONDING TO 10% (TEN PERCENT) OF THE UPDATED VALUE OF THIS AGREEMENT BY THE SAME INDEXER OF THIS PROMISSORY AGREEMENT, WHICH AMOUNT SHALL BE AUTOMATICALLY DEDUCTED FROM THE AMOUNT TO BE REFUNDED. THE FOLLOWING SHALL ALSO BE DEDUCTED:
(a) TAXES, BY WAY OF EXAMPLE, THE URBAN PROPERTY AND TERRITORIAL TAX, ONCE ASSESSED BY THE COMPETENT MUNICIPALITY ON AN INDIVIDUALIZED BASIS, THE MAINTENANCE FEE, THE PROJECT APPROVAL AND ALTERATION FEES, AND OTHER ASSOCIATION FEES PROVIDED FOR IN THE BYLAWS OF THE ASSOCIATION, WHICH, BEING DUE AND PAST DUE, HAVE NOT BEEN PAID;
(b) AN AMOUNT CORRESPONDING TO THE ENJOYMENT OF THE PROPERTY EQUIVALENT TO 0.75% (SEVENTY-FIVE HUNDREDTHS OF ONE PERCENT) OF THE UPDATED VALUE OF THE AGREEMENT, CALCULATED DAILY, CALCULATED MONTHLY AS OF THE COMPLETION OF THE WORKS.

8.2 THE PAYMENT OF THE REFUND SHALL OCCUR IN UP TO 12 (TWELVE) MONTHLY INSTALLMENTS, COMMENCING AFTER THE FOLLOWING GRACE PERIOD:
(a) IF THE SUBDIVISION INFRASTRUCTURE WORKS ARE NOT COMPLETED: WITHIN A MAXIMUM PERIOD OF 180 (ONE HUNDRED EIGHTY) DAYS AFTER THE DEADLINE PROVIDED FOR IN THE AGREEMENT FOR COMPLETION OF THE WORKS;
(b) IF THE SUBDIVISION INFRASTRUCTURE WORKS ARE COMPLETED: WITHIN A MAXIMUM PERIOD OF 12 (TWELVE) MONTHS AFTER THE FORMALIZATION OF THE CONTRACTUAL TERMINATION.

8.3 IN THE EVENT THAT ALPHAVILLE DOES NOT COMPLETE THE SUBDIVISION INFRASTRUCTURE WORKS BY THE END OF THE TOLERANCE PERIOD, AND PROVIDED NO EXTENSION HAS OCCURRED DUE TO FORCE MAJEURE OR FORTUITOUS EVENT, A ONE-TIME COMPENSATORY FINE OF TWO PERCENT (2%) CALCULATED ON THE AMOUNT PAID BY THE BUYER SHALL BE APPLIED TO ALPHAVILLE.

8.4 IT IS HEREBY STIPULATED THAT THE REFUND PROCEDURES PROVIDED FOR IN THIS ITEM SHALL NOT APPLY IN THE CASE OF AN AGREEMENT OR DEED OF PURCHASE AND SALE UNDER THE DEED OF TRUST MODALITY, PURSUANT TO LAW NO. 9,514/97, IN WHICH EVENT THE PRECEPTS AND PROVISIONS OF SAID LAW SHALL BE APPLIED TO THE TERMINATION OF THE AGREEMENT.

CHAPTER VIII - OF THE RIGHT OF WITHDRAWAL

9.0 THE BUYER DECLARES THAT THEY ARE AWARE THAT, PURSUANT TO ARTICLE 49 OF LAW NO. 8,078/90, WITHIN A PERIOD OF 7 (SEVEN) DAYS AFTER THE SIGNING OF THIS INSTRUMENT, THEY MAY EXERCISE THEIR RIGHT OF WITHDRAWAL BY MEANS OF REGISTERED MAIL. UPON EXPIRATION OF SAID PERIOD, THE IRREVOCABILITY AND UNALTERABILITY OF THIS INSTRUMENT SHALL BE OBSERVED.

TERRAS ALPHAVILLE MONTES CLAROS RESIDENTIAL SUBDIVISION PHASE 02

PROMISSORY PURCHASE AND SALE AGREEMENT AND OTHER COVENANTS
GENERAL PROVISIONS

By this private instrument, the parties ("Parties") identified and qualified in **Chapter I** enter into this Promissory Purchase and Sale Agreement, having as its subject matter the property referred to in **Chapter II**, for the fixed price and payment terms agreed upon in **Chapter III**, all contained within the Summary Sheet, and pursuant to the terms and conditions stipulated below ("General Provisions").

CHAPTER X - OF THE SUBDIVIDED PROPERTY

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I, André Vinícius Inacio Penna Mello, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: September 24, 2026.

Extrato de Conta Corrente

Cliente HANNA C CAMPOS FERREIRA

Período: 01 a 28/02/2026 Agência: [redacted] Conta: [redacted]

Lançamentos

Dia	Lote	Documento	Histórico	Valor
30/01/2026			Saldo Anterior	[redacted]
02/02/2026	99020	600923400057881	Transferência recebida 02/02 19:32 HANNA C CAMPOS FERREIRA	15.949,39 (+)
02/02/2026	13105	20201	[redacted]	[redacted]
02/02/2026	13105	20202	[redacted]	[redacted]
02/02/2026	13105	20203	[redacted]	[redacted]
02/02/2026	13105	20204	[redacted]	[redacted]
02/02/2026	13105	20205	[redacted]	[redacted]
02/02/2026	13601	511058901	[redacted]	[redacted]
02/02/2026	13601	391100701	[redacted]	[redacted]
03/02/2026	99008	145659	[redacted]	[redacted]
03/02/2026	13105	20301	[redacted]	[redacted]
04/02/2026	99008	146068	[redacted]	[redacted]
04/02/2026	99008	276325	[redacted]	[redacted]
04/02/2026	13105	20401	[redacted]	[redacted]
04/02/2026	13105	20402	[redacted]	[redacted]
04/02/2026	13105	20403	[redacted]	[redacted]
05/02/2026	99008	145064	[redacted]	[redacted]
05/02/2026	13105	20501	[redacted]	[redacted]
06/02/2026	99008	148327	[redacted]	[redacted]
09/02/2026	99020	230092300040000	[redacted]	[redacted]
09/02/2026	13105	20901	[redacted]	[redacted]
09/02/2026	13105	20902	[redacted]	[redacted]

HF Hanna

Conta Investime... | Da Meta ao Investime... | Meus Objetivos | Crédito | FIIs | C Au

Total investido + Conta investimento

Atualizado hoje às 19h21

R$ 120.837,99

Investir | Resgatar

Rentabilidade • Até 24/02/2026

R$ 22.134,11 ▲ 16,86 % ● 117,78% do CDI



Investimentos | Banco | Bolsa | Produtos

terrasalpha
Montes Claros

LOTEAMENTO RESIDENCIAL TERRAS ALPHAVILLE MONTES CLAROS FASE 02

Lote 15 da Quadra Y1

COMPROMISSO DE VENDA E COMPRA E OUTROS PACTOS

QUADRO RESUMO

Pelo presente instrumento particular,

CAPÍTULO I - PARTES:

1.1de um lado, como outorgante compromitente vendedora: **AL PIRÂMIDE EMPREENDIMENTOS IMOBILIÁRIOS LTDA.,** empresa com sede em Montes Claros, Estado de Minas Gerais, na Avenida Mestra Fininha, nº 3300, sala 4F, Bairro Morada do Sol, CEP 39.403-222, inscrita no CNPJ sob o nº 18.992.766/0001-65, com seu contrato social registra-do na Junta Comercial do Estado de Minas Gerais JUCEMG, sob NIRE 3120996320-0, em 02/10/2013, doravante chamada de "**VENDEDORA**", independentemente de gênero e número;

1.2de outro lado, como compromitente comprador, designado, doravante e abreviadamente, por **"COMPRADOR"**, independentemente de gênero e número dos adquirentes:

Nome: Hanna Carolina Campos Ferreira
Nacionalidade: Brasileira
Estado Civil: Solteiro(a)
RG: MG-12.992.107 / Órgão emissor: SSP/MG
CPF/CNPJ: 067.410.916-37
Profissão: Veterinário(a)
Endereço Residencial: Rua Domingos Pereira de Souza Nº 56 Compl: / CEP: 39440-027
Bairro: Veredas / Cidade: Janaúba / UF: MG
Data Nascimento: 25/09/1984
Telefone: 31996424522
E-mail: hannaccf@gmail.com

Proporção de aquisição de cada **COMPRADOR**: 100,00%.

1.2.1na hipótese de ser mais de um **COMPRADOR**, estes são solidários entre si em todas as obrigações ajustadas no presente contrato ("Contrato"), especialmente quanto ao pagamento do preço;

1.3e, ainda, como anuente, na qualidade de desenvolvedora do Loteamento, ALPHAVILLE URBANISMO S.A., com sede na Avenida das Nações Unidas, 8501, 3º andar, Bairro Pinheiros, São Paulo - SP, CEP: 05425-070, inscri-ta no CNPJ/MF sob n.º 00.446.918/0001-69, ("**ALPHAVILLE**");

CAPÍTULO II - DO IMÓVEL:

2.1Lote 15 da Quadra Y1, integrante do Loteamento Residencial Terras Alphaville Montes Claros Fase 02, comercialmente denominado como Loteamento Terras Alphaville Montes Claros ("Loteamento"), situado no Município de Montes Claros- MG, registrado sob nº R06, em 22 de agosto de 2022, na Matrícula nº 66.587, do 2º Ofício de Registro de Imóveis de Montes Claro-MG.

2.2 Referido lote ("Imóvel") tem a seguinte descrição e confrontação: 332,64 m², sendo o Lote de terreno de nº. 15 da Quadra nº. Y1, com área de 332,64 m², localizado na Alameda João de Barro, loteamento denominado "Terras Alphaville Montes Claros", nesta cidade de Montes Claros/MG, com os seguintes limites e distâncias: pela frente, com a referida Alameda João de Barro, na distância de 12,32 metros; pelos fundos, com o Lote nº 14, na distância de 12,32 metros; pelo lado direito, com a Via de Passagem 01 (Parte B), na distância de 27,00 metros; pelo lado esquerdo, com o Lote nº 16, na distância de 27,00 metros, com Matrícula nº. 97.966 do 2º Ofício de Registro de Imóveis de Montes Claro-MG.

2.3O **COMPRADOR** declara ter ciência de que os lotes: 01 a 28 da quadra T1; lotes 01 a 28 da quadra U1; lotes 01 a 12 da quadra V1; lotes 01 a 24 da quadra W1; e lotes 13 a 22 da quadra X1, foram devidamente caucionados em favor da Prefeitura Municipal de Montes Claros, como garantia da execução das obras de infraestrutura do Loteamento, incluindo o Imóvel, nada tendo a opor.

CAPÍTULO III - PREÇO E CONDIÇÕES DE PAGAMENTO

3.1O Preço de aquisição do Imóvel será R$ 232.265,88, (Duzentos e trinta e dois mil duzentos e sessenta e cinco reais e oitenta e oito centavos), a ser pago pelo **COMPRADOR** da seguinte forma:

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a.1)a parcela de R$ 42.775,48, (Quarenta e dois mil setecentos e setenta e cinco reais e quarenta e oito centavos) (a "Parcela de Sinal"), neste ato, e da qual a **VENDEDORA** dá a devida quitação, condicionada à efetiva compensação bancária do(s) cheque(s) que a representa, transferência eletrônica entre contas ou mediante pagamento de boleto:

i)a comprovação de pagamento é condição de existência deste negócio jurídico; portanto, no caso de não compensação do(s) cheque(s), a critério da **VENDEDORA**, fica sem efeito algum o presente Contrato, sendo considerado inexistente o negócio jurídico dele objeto, independentemente de qualquer aviso ou notificação judicial ou extrajudicial, podendo a **VENDEDORA** livremente dispor do Imóvel ora compromissado e transacioná-lo com terceiros;

ii)O saldo do preço, em seu valor nominal, sujeito à correção monetária adiante estipulada de comum acordo entre os contratantes, deverá ser pago pelo **COMPRADOR** à **VENDEDORA** da seguinte forma:

(a.2) Parcelas Corrigidas em 80 (oitenta) parcela(s) no valor de R$ 3.391,16 (Três mil trezentos e noventa e um reais e dezesseis centavos) cada, a vencer a primeira em 18/05/2023 e, caso ocorram, as demais em igual dia dos meses subsequentes.

As parcelas nas alíneas a.2 já estão acrescidas de juros de 0,949009% ao mês pelo Sistema de Amortização da Tabela Price.

3.2A COMISSÃO DE CORRETAGEM PELA INTERMEDIAÇÃO DA PRESENTE VENDA E COMPRA NÃO INTEGRA O PREÇO.
3.2.2O **COMPRADOR** é o único e exclusivo responsável pelo pagamento da despesa com os serviços de corretagem diretamente ao credor respectivo (a empresa imobiliária e/ou o corretor imobiliário), não podendo, sob qualquer hipótese, a **VENDEDORA ser** responsabilizada pelo pagamento da referida despesa, ou pelo reembolso total ou parcial em caso de rescisão por inadimplemento de quaisquer das partes contratantes.
3.2.3O valor da despesa com os serviços de corretagem a ser pago pelo **COMPRADOR** totaliza, **R$ 12.224,52 (Doze mil, duzentos e vinte e quatro reais e cinquenta e dois centavos)**, sendo que o mesmo não compõe o valor da venda do imóvel objeto deste Instrumento, com o que está plenamente de acordo o **COMPRADOR**.
3.2.4O **COMPRADOR** está ciente de que, na hipótese de rescisão do presente instrumento, o valor referido nesta cláusula não será considerado para cálculo de eventual restituição.
3.2.5O **COMPRADOR** tem conhecimento de que, pelas normas vigentes, o valor acima poderá ser incluído em seu imposto de renda como custo de aquisição, conforme Instrução Normativa SRF nº 84/2001.
3.2.6A fim de preservar o equilíbrio econômico-financeiro do presente Contrato, as prestações do Preço serão corrigidas na forma do item 12.2, das Normas Gerais.

3.3O COMPRADOR pagará, ainda, à VENDEDORA, a TAXA DE GESTÃO DE CONTRATO no valor de R$ 10,00 (dez reais) mensais, corrigidos pela variação anual do IGP-M/FGV nos meses de janeiro de cada ano.

CAPÍTULO IV - INSTRUMENTO DE VENDA E COMPRA:

4.1 Sem prejuízo da aplicação das demais regras referentes à outorga da escritura dispostas no Capítulo XX, das Normas Gerais, fica estabelecido que, caso o preço de aquisição consignado no item 3.1 supra seja pago à vista ou seja definido para pagamento em um fluxo inferior a 12 (doze) prestações mensais sucessivas, no prazo máximo de até 60 (sessenta dias), contados a partir da prévia comunicação a ser feita ao **COMPRADOR** pela **VENDEDORA** nesse sentido, deverá ser celebrado o instrumento público definitivo de venda e compra, conforme as condições definidas no presente instrumento.
4.1.1 Caso o saldo do preço indicado no item 3.1 supra seja definido para pagamento em um fluxo superior a 12 (doze) prestações mensais sucessivas, no prazo máximo de até 60 (sessenta dias) contados a partir da prévia comunicação a ser feita ao **COMPRADOR** pela **VENDEDORA** nesse sentido, deverá ser celebrado o instrumento público de venda e compra com pacto adjeto de alienação fiduciária em garantia objetivando o Imóvel, nos termos da Lei Federal nº 9.514/97 e conforme as condições a serem apresentadas pela **VENDEDORA**;

4.1.2o **COMPRADOR** tem conhecimento e concorda expressamente que para que seja celebrado o instrumento público de venda e compra com pacto adjeto de alienação fiduciária em garantia mencionado nesse item, torna-se indispensável: (i) ratificação da adesão do **COMPRADOR** à Apólice de Seguro por Morte por Invalidez ("MIP"), que vigerá durante todo o período de pagamento do saldo, tendo por objetivo garantir à **VENDEDORA** o pagamento do capital segurado na ocorrência de morte ou invalidez permanente do **COMPRADOR**; (ii) a apresentação pelo **COMPRADOR** à **VENDEDORA** quando por esta solicitado, dos documentos necessários para que seja realizada a análise de seu crédito, sujeito à aprovação da **VENDEDORA**; (iii) que esteja em dia com todas as obrigações deste Contrato; (iv) seja devidamente celebrado e registrado o instrumento público de venda e compra com alienação fiduciária, na forma definida no presente instrumento.

4.1.3CASO O COMPRADOR SE RECUSE A CELEBRAR O INSTRUMENTO, NA FORMA DESCRITA NOS ITENS SUPRA OU DE QUALQUER FORMA PREJUDIQUE OU IMPEÇA A REFERIDA CELEBRAÇÃO CONFORME DEFINIDO PELA VENDEDORA, PODERÁ SER A ELE APLICADA MULTA COMPENSATÓRIA NO IMPORTE DE 2% (DOIS POR CENTO) CALCULADO SOBRE O VALOR ATUALIZADO DO CONTRATO, SEM PREJUÍZO DE EXIGIR O IMEDIATO REEMBOLSO DE TODOS OS CUSTOS ASSUMIDOS PARA VIABILIZAR A LAVRATURA DO INSTRUMENTO, TAIS COMO DESPESAS COM ITBI, EMOLUMENTOS, DENTRE OUTROS, DEVIDAMENTE CORRIGIDOS.

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CAPÍTULO V - DA CONCLUSÃO DAS OBRAS DE INFRAESTRUTURA E DA POSSE:

5.1 As obras de infraestrutura e os melhoramentos serão realizadas no **prazo de 30 (trinta) meses**, contados a partir do lançamento do Loteamento a público, ocorrido em 22 de agosto de 2022, **observada a carência de cento e oitenta (180) dias** ("Prazo de Carência"), conforme Capítulo XIV, das Normas Gerais.

5.2 Ainda que tenha havido a transferência da propriedade na forma prevista no presente instrumento, a efetiva imissão do **COMPRADOR** na posse ocorrerá na data de postagem de carta registrada enviada pela **VENDEDORA** informando a conclusão das obras de infraestrutura do Loteamento, conforme descrito no Capítulo XIII, das Normas Gerais.

5.3A partir da data do presente Contrato, o **COMPRADOR** assume todas as obrigações relativas a impostos, taxas, tarifas, contribuições de melhoria ou qualquer tributo ou despesa que incida ou que venha a incidir sobre o Imóvel, mesmo que seus lançamentos sejam feitos em nome da **VENDEDORA** ou de terceiros.

5.4AS OBRAS DAS EDIFICAÇÕES E EQUIPAMENTOS QUE INTEGRAM A ÁREA DE LAZER, TAMBÉM DENOMINADA TERRAS ALPHAVILLE MONTES CLAROS CLUBE, A PORTARIA E O APOIO, DESCRITOS NO ANEXO E (MEMORIAL DESCRITIVO DAS ÁREAS DE LAZER E ÁREAS DE APOIO) E NO ITEM 14.2.3, ABAIXO, SERÃO ENTREGUES EM ATÉ 12 (DOZE) MESES APÓS A CONCLUSÃO DAS OBRAS DE INFRAESTRUTURA DA FASE 1 DO EMPREENDIMENTO.

CAPÍTULO VI - DAS RESTRIÇÕES DE USO E OCUPAÇÃO DO LOTE E DA ASSOCIAÇÃO

6.1O **COMPRADOR** tem ciência e está de acordo com as restrições que a **VENDEDORA** e a **ALPHAVILLE** estabeleceram para o Loteamento, constantes no ANEXO B, integrante do presente Contrato, e no Capítulo XVIII, adiante.

6.2 Conforme Capítulo XXII, das Normas Gerais, o **COMPRADOR** tem conhecimento e concorda que a **VENDEDORA** e a **ALPHAVILLE** constituirão uma associação civil ("**ASSOCIAÇÃO**"), sem fins lucrativos, políticos ou religiosos, para atuar em favor de seus associados, cujo estatuto será devidamente registrado em Cartório de Registro Civil de Pessoas Jurídicas, sendo a filiação dos titulares de direitos dos lotes à **ASSOCIAÇÃO** **condição essencial e necessária ao atendimento dos interesses comuns dos moradores do Loteamento**. Assim, neste ato, concorda com sua filiação à **ASSOCIAÇÃO**, o que será ratificado mediante celebração do respectivo Termo de Inscrição no mesmo ato da celebração do presente instrumento.

6.3A **ASSOCIAÇÃO** será uma entidade, sem fins lucrativos, que visará, dentre outras finalidades, à defesa e à preservação de direitos e interesses coletivos ou difusos, de qualquer natureza, dos moradores do Loteamento, promovendo, por si ou por terceiros que contratar e nomear, a preservação das características do Loteamento, zelando por sua adequada manutenção e utilização, e a prestação de serviços em prol de seus Associados, tanto os serviços necessários, como os de comodidade.

6.4A partir da sua imissão na posse do Imóvel, o **COMPRADOR** assume todas as obrigações relativas à **ASSOCIAÇÃO**, devendo contribuir com despesas ordinárias mensais de manutenção, para que a **ASSOCIAÇÃO** possa, por si ou por terceiros por ela contratados, executar os serviços e as atividades necessárias e básicas à consecução de sua finalidade, bem como contribuir com despesas extraordinárias aprovadas nos termos do referido estatuto.

6.5 Além das disposições constantes no Capítulo XXII, das Normas Gerais, o **COMPRADOR** declara estar ciente das obrigações e direitos decorrentes da sua qualidade de Associado Contribuinte, nos termos do Estatuto Social da **ASSOCIAÇÃO**, cuja minuta integra o presente como ANEXO A.

6.6O COMPRADOR tem ciência de que poderá ser implantada pela LOTEADORA uma fase de expansão do empreendimento que será totalmente integrado ao Loteamento Residencial Terras Alphaville Montes Claros Fase 01, compondo um único empreendimento e aproveitando o mesmo fechamento. Os COMPRADORES da fase de expansão serão inscritos como associados titulares na Associação Terras Alphaville Montes Claros, tendo os mesmos direitos e obrigações dos compradores do Loteamento Residencial Terras Alphaville Montes Claros Fase 01, podendo usufruir das áreas de uso comum do Loteamento.

6.7O COMPRADOR tem ciência de que, caso seja implantada outra fase do loteamento em área contígua ao Loteamento Terras Alphaville Montes Claros Fase 01, caberá à ASSOCIAÇÃO sua administração, conforme itens dispostos no Estatuto Social do Loteamento.

CAPÍTULO VII - MEIO DE COMUNICAÇÃO E ANEXOS:

7.1O **COMPRADOR** concorda que os avisos e as comunicações relativas ao Contrato, bem como as informações sobre as datas de vencimento de parcelas ou prestações do Preço, estágio da obra, pedidos de atualização cadastral, convites para reuniões ou para tratativas de assuntos pertinentes ao Contrato, podem ser obtidos por ele no endereço da **VENDEDORA**, ou serem remetidos pela **VENDEDORA**, por via postal simples, para seu endereço constante no **Capítulo I**, ou disponibilizados via internet, ou via SMS para a linha de telefonia móvel ou e-mail mencionados na qualificação do **COMPRADOR**, de titularidade do **COMPRADOR**.

D4Sign 36a0e828-31cd-4b25-88b0-47c3d9c2b4e3 - Para confirmar as assinaturas acesse https://secure.d4sign.com.br/verificar
Documento assinado eletronicamente, conforme MP 2.200-2/01, Art. 10º, §2.

7.2 Consistem partes integrantes do presente Contrato os anexos abaixo relacionados, cujo teor é de conhecimento do **COMPRADOR**, que declara estar de acordo:

a)Estatuto Social da ASSOCIAÇÃO e respectivo Termo de Inscrição; (ANEXO A)

b)Regulamento do Loteamento (ANEXO B);

c)Regulamento da Área de Lazer (ANEXO C);

d)Memorial Descritivo das Obras (ANEXO D);

e)Memorial Descritivo das Áreas de Lazer e Áreas de Apoio (ANEXO E);

CAPÍTULO VIII - CONSEQUÊNCIAS DO DESFAZIMENTO DO CONTRATO E DO DIREITO DE ARREPENDIMENTO

8.1OCORRENDO A RESCISÃO DESTE CONTRATO MOTIVADA PELO COMPRADOR, A VENDEDORA PODERÁ RETER, A TÍTULO DE CLÁUSULA PENAL E DESPESAS ADMINISTRATIVAS, O VALOR CORRESPONDENTE A 10% (DEZ POR CENTO) DO VALOR ATUALIZADO DESTE CONTRATO PELO MESMO INDEXADOR DESTA PROMESSA, VALOR ESTE QUE SERÁ AUTOMATICAMENTE DESCONTADO DO MONTANTE A RESTITUIR. SERÃO DESCONTADOS, AINDA:
(a)OS TRIBUTOS, EXEMPLIFICATIVAMENTE, O IMPOSTO PREDIAL E TERRITORIAL URBANO, UMA VEZ LANÇADO PELA PREFEITURA COMPETENTE, DE FORMA INDIVIDUALIZADA, A TAXA DE MANUTENÇÃO, AS TAXAS DE APROVAÇÃO E DE ALTERAÇÃO DE PROJETO, E OUTRAS TAXAS ASSOCIATIVAS PREVISTAS NO ESTATUTO SOCIAL DA ASSOCIAÇÃO, QUE, DEVIDAS E VENCIDAS, NÃO TENHAM SIDO PAGAS;
(b)VALOR CORRESPONDENTE À FRUIÇÃO DO IMÓVEL EQUIVALENTE A 0,75% (SETENTA E CINCO CENTÉSIMOS POR CENTO) SOBRE O VALOR ATUALIZADO DO CONTRATO, *POR RATA DIE, CALCULADO MENSALMENTE A PARTIR DA CONCLUSÃO DAS OBRAS*.

8.2O PAGAMENTO DA RESTITUIÇÃO OCORRERÁ EM ATÉ 12 (DOZE) PARCELAS MENSAIS, COM INÍCIO APÓS O SEGUINTE PRAZO DE CARÊNCIA:
(a)SE AS OBRAS DE INFRAESTRUTURA DO LOTEAMENTO NÃO ESTIVEREM CONCLUÍDAS: NO PRAZO MÁXIMO DE 180 (CENTO E OITENTA) DIAS APÓS O PRAZO PREVISTO EM CONTRATO PARA CONCLUSÃO DAS OBRAS;
(b)SE AS OBRAS DE INFRAESTRUTURA DO LOTEAMENTO ESTIVEREM CONCLUÍDAS: NO PRAZO MÁXIMO DE 12 (DOZE) MESES APÓS A FORMALIZAÇÃO DA RESCISÃO CONTRATUAL.

8.3CASO A ALPHAVILLE NÃO CONCLUA AS OBRAS DE INFRAESTRUTURA DO LOTEAMENTO ATÉ O TÉRMINO DO PRAZO DE TOLERÂNCIA, E, NÃO TENDO OCORRIDO A PRORROGAÇÃO POR MOTIVO DE FORÇA MAIOR OU CASO FORTUITO, SERÁ APLICADA À ALPHAVILLE, UMA ÚNICA VEZ, MULTA COMPENSATÓRIA DE DOIS POR CENTO (2%) CALCULADO SOBRE O VALOR PAGO PELO COMPRADOR.

8.4FICA CONSIGNADO QUE OS PROCEDIMENTOS DE RESTITUIÇÃO PREVISTOS NESTE ITEM NÃO SERÃO APLICADOS NO CASO DE CONTRATO OU ESCRITURA DE COMPRA E VENDA SOB A MODALIDADE DE ALIENAÇÃO FIDUCIÁRIA, NOS TERMOS DA LEI 9.514/97, HIPÓTESE EM QUE SERÃO APLICADOS OS PRECEITOS E DISPOSITIVOS DA REFERIDA LEI PARA O DESFAZIMENTO DO CONTRATO.

CAPÍTULO VIII - DO DIREITO DE ARREPENDIMENTO

9.0O COMPRADOR DECLARA ESTAR CIENTE DE QUE, NOS TERMOS DO ARTIGO 49 DA LEI Nº 8.078/90, NO PRAZO DE 7 (SETE) DIAS APÓS A ASSINATURA DO PRESENTE INSTRUMENTO, PODERÁ EXERCER SEU DIREITO DE ARREPENDIMENTO POR MEIO DE CARTA REGISTRADA. TRANSCORRIDO O REFERIDO PRAZO, SERÁ OBSERVADA A IRRETRATABILIDADE E A IRREVOGABILIDADE DO PRESENTE INSTRUMENTO.

LOTEAMENTO RESIDENCIAL TERRAS ALPHAVILLE MONTES CLAROS FASE 02

COMPROMISSO DE VENDA E COMPRA E OUTROS PACTOS
NORMAS GERAIS

Pelo presente instrumento particular, as partes ("Partes") enunciadas e qualificadas no **Capítulo I**, ajustam este Compromisso de Venda de Compra, tendo por objeto o imóvel referido no **Capítulo II**, pelo preço certo e forma ajustados no **Capítulo III**, todos do Quadro Resumo e consoante cláusulas e condições adiante estipuladas ("Normas Gerais").

CAPÍTULO X - DO IMÓVEL LOTEADO

D4Sign 36a0e828-31cd-4b25-88b0-47c3d9c2b4e3 - Para confirmar as assinaturas acesse https://secure.d4sign.com.br/verificar
Documento assinado eletronicamente, conforme MP 2.200-2/01, Art. 10º, §2.

Exhibit D - Personal Documents

Hanna Carolina Campos Ferreira

Assinatura do titular / Signature du titulaire
Bearer's signature / Firma del titular

FJ582517

Este passaporte deve ser assinado pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé par le titulaire, sauf en cas d'incapacité.

This passport must be signed, except where the bearer is unable to do so.

Este pasaporte debe ser firmado por el titular, salvo en caso de incapacidad.

REPÚBLICA FEDERATIVA DO BRASIL

PASSAPORTE
PASSPORT

TIPO / TYPE: P
PAÍS EMISSOR / ISSUING COUNTRY: BRA
PASSAPORTE N.º / PASSPORT No.: FJ582517

SOBRENOME / SURNAME: CAMPOS FERREIRA
NOME / GIVEN NAMES: HANNA CAROLINA
NACIONALIDADE / NATIONALITY: BRASILEIRO(A)
DATA DE NASCIMENTO / DATE OF BIRTH: 25/Sep/1984
IDENTIDADE N.º / PERSONAL No.:
SEXO / SEX: F
NATURALIDADE / PLACE OF BIRTH: JANUÁRIA/MG
DATA DE EXPEDIÇÃO / DATE OF ISSUE: 12/Feb/2014
AUTORIDADE / AUTHORITY: SR/DPF/MG
VALIDO ATÉ / DATE OF EXPIRY: 11/Feb/2019



BRA

P<BRACAMPOS<FERREIRA<<HANNA<CAROLINA<<<<<<<<
FJ582517<2BRA8409252F1902112<<<<<<<<<<<<<<02

INFORMAÇÕES PARA O TITULAR

Este passaporte é propriedade da República Federativa do Brasil e qualquer tentativa de adulteração o tornará inválido.

O extravio – perda, roubo ou destruição – do passaporte constitui fato grave e deve ser comunicado imediatamente à autoridade policial e à Embaixada ou ao Consulado do Brasil, conforme o caso. Para isso, recomenda-se que o titular copie as informações da página 2. Se o passaporte for entregue a pessoa ou serviço que não pertença ao Governo brasileiro (por exemplo, para obtenção de visto, compra de passagem, etc.) e não for restituído, o titular deve considerá-lo como extraviado. A concessão de novo passaporte em substituição ao extraviado depende de investigação.

Apenas o titular do passaporte poderá usá-lo. A utilização fraudulenta ou a cessão a outra pessoa constituem crimes, pela lei brasileira. Para ressalvar sua responsabilidade, o titular deve assinar seu passaporte, no local previsto na página 3, imediatamente após recebê-lo. Este passaporte só é válido com a assinatura do titular, salvo em caso de incapacidade.

É recomendável que o brasileiro residente no exterior, ou de passagem por região conturbada, matricule-se na Embaixada ou no Consulado do Brasil mais próximo. Impossibilitado de comparecer pessoalmente, poderá comunicar-se por outro meio, fornecendo nome completo, endereço e número do passaporte.

É responsabilidade do titular verificar, antes da viagem, a validade do passaporte e a necessidade de visto. O titular poderá solicitar a substituição do passaporte mesmo antes do vencimento, em vista de que muitos países exigem prazo mínimo de validade.

O menor de idade, não emancipado, viajando desacompanhado de qualquer um dos pais, ou responsável legal, só poderá sair do Brasil munido da autorização pertinente prevista em lei.

O cidadão brasileiro que possua outra nacionalidade não poderá reclamar proteção consular ou diplomática brasileira no país de sua outra nacionalidade.

Consulte / Consultez / Consult / Consulte
www.portalconsular.mre.gov.br ou www.pf.gov.br

Para uso das autoridades brasileiras
Reservé aux autorités brésiliennes
For the use of Brazilian authorities
Para uso de las autoridades brasileñas

VISTOS VISAS

SEP 12 2014

J1

DS

VISA

UNITED STATES OF AMERICA



Issuing Post Name
RIO DE JANEIRO

Control Number
20141420380001

Surname
CAMPOS FERREIRA

Given Name
HANNA CAROLINA

Visa Type /Class
R J1

Passport Number	Sex	Birth Date	Nationality
FJ582517	F	25SEP1984	BRZL

Entries	Issue Date	Expiration Date	
M	23MAY2014	21MAY2015	0100

Annotation
N0011254707 P-1-00045 J0636393
UNIVERSITY OF MINNESOTA
05-AUG-2014 TO 05-JUL-2015
BEARER IS SUBJECT TO 212(E)

*

VNUSACAMPOS<FERREIRA<<HANNA<CAROLINA<<<<<<<<

FJ582517<2BRA8409252F1505214J1RDJOWBQ4343253


HANNA CAROLINA CAMPOS FERREIRA
AA0041IAHW
J1 038/142-1 N
14.05.22-11/00
FJ582517
UA GRU
CZ BR FM
DATA
MERCOSUL
REPÚBLICA FEDERATIVA
DO BRASIL
PASSAPORTE

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS
BIRTH CERTIFICATE

NAME:
HANNA CAROLINA CAMPOS FERREIRA

CPF
067.410.916-37

REGISTRATION:
0507320155 1984 1 00052 228 0010565 39

DATE OF BIRTH IN FULL
September twenty-five, nineteen eighty-four

DAY MONTH YEAR
25/09/1984

TIME
03:05 AM

PLACE OF BIRTH
Januária - MG

CITY OF REGISTRATION AND FEDERATION UNIT
Januária-MG

PLACE, CITY OF BIRTH AND FEDERATION UNIT
Hospital SESP, Januária - MG

SEX
Female

FILIATION
YULO ANTONIO FERREIRA DE SA, born in //, residing in Januária - MG
MARIANE CAMPOS FERREIRA, born in //, residing in Januária - MG

GRANDPARENTS
GERMANO VICENTE FERREIRA and MARIA BATISTA FERREIRA DE SA
ALVARO MENDES CAMPOS and ELENITA AGUIAR CAMPOS

TWIN
NO

NAME AND REGISTRATION OF THE TWIN(S)

DATE OF REGISTRATION IN FULL
September twenty-eight, nineteen eighty-four

LIVE BIRTH REGISTRATION NUMBER
No Record

ANNOTATIONS / NOTES TO BE ADDED
CPF annotation pursuant to Provision No. 63/CNJ/2017.//.

REGISTRATION NOTES

DOCUMENT TYPE	NUMBER	DATE OF ISSUE	ISSUING AUTHORITY	VALIDITY DATE
ID	- - -	- - -	- - -	- - -
PIS/NIS*	- - -	- - -	- - -	- - -
Passport	- - -	- - -	- - -	- - -
National Health Card	- - -	- - -	- - -	- - -

DOCUMENT TYPE	NUMBER	DISTRICT/POLLING STATION	CITY	FEDERATION UNIT
Voter ID	- - -	- -	- - -	- - -

ZIP CODE	- - -	Blood Type	- - -

The annotations in the table above do not exempt the interested party from presenting the original document, when required by the requesting agency or when necessary for the identification of its holder.

CIVIL REGISTRY OFFICE OF NATURAL PERSONS
Registrar: Ignez Consuelo Generoso Lisboa e Alves
Rua Francisco Sales, No. 147 - Centro
Januária-MG - (38) 3621-3906
crjmilia@yahoo.com.br
Typed by: Bianca - 15:57:27

The content of this Certificate is true. I certify.
Januária-MG, June 26, 2024.

- - Signature - -

Signature of the Registrar/Deputy
Viviane da Conceição Lopes
Clerk

JUDICIARY - TJMG
JUDICIAL ADMINISTRATIVE DEPARTMENT
CIVIL REGISTRY OFFICE OF NATURAL PERSONS - MG
Consultation Seal: HPF29410 - Security Code:
4496.5235.5998.0459 - Code and Quantity of Act(s)
Performed: 003 - 1 (7901), 1 (7402), 1 (7802) Act(s)
Performed by: Viviane da Conceição Lopes - Clerk
- Fees: R$ 57.86 - Judicial Fee: R$ 10.99 - Total: R$ 68.85 -
ISS: R$ 1.64
Check validity at: selos.tjmg.jus.br

CIVIL REGISTRY OF NATURAL PERSONS - JANUARIA-MG

08.423.292/0001-99
CIVIL REGISTRY OF NATURAL PERSONS
AND OF INTERDICTIONS AND
GUARDIANSHIPS
Mário José Lisboa Registry Office
IGNEZ CONSUELO GENEROSO LISBOA E
ALVES - REGISTRAR
ALVARO OLIVEIRA ALVES - DEPUTY
Rua Francisco Sales, 147 - ZIP Code 39480-000
(38) 3621-3906 - Januária-MG

BE 00150508 2 BRP

RECIVIL
SINDICATO DOS OFICIAIS DE REGISTRO CIVIL DE MINAS GERAIS

Industria Gráfica Brasileira Ltda

Translation Note: *PIS/NIS* (Social Integration Program / Social Identification Number)

I, Thainá de Brito Oliveira, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: September 15, 2026.

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

CERTIDÃO DE NASCIMENTO

NOME:

HANNA CAROLINA CAMPOS FERREIRA

CPF
067.410.916-37

MATRÍCULA:

0507320155 1984 1 00052 228 0010565 39

DATA DE NASCIMENTO POR EXTENSO
vinte e cinco de setembro de mil novecentos e oitenta e quatro

DIA MÊS ANO
25/09/1984

HORA
03:05

NATURALIDADE
Januária - MG

MUNICÍPIO DE REGISTRO E UNIDADE DA FEDERAÇÃO
Januária-MG

LOCAL, MUNICÍPIO DE NASCIMENTO E UF
Hospital SESP, Januária - MG

SEXO
Feminino

FILIAÇÃO
YULO ANTÔNIO FERREIRA DE SÁ, natural de //, residente em Januária - MG
MARIANE CAMPOS FERREIRA, natural de //, residente em Januária - MG

AVÓS
GERMANO VICENTE FERREIRA e MARIA BATISTA FERREIRA DE SÁ
ALVARO MENDES CAMPOS e ELENITA AGUIAR CAMPOS

GÊMEO
NÃO

NOME E MATRÍCULA DO(S) GÊMEO(S)

DATA DO REGISTRO POR EXTENSO
vinte e oito de setembro de mil novecentos e oitenta e quatro

NÚMERO DA DECLARAÇÃO DE NASCIDO VIVO
Sem informação

AVERBAÇÕES/ANOTAÇÕES À ACRESCER
CPF averbado conforme Provimento nº 63/CNJ/2017.//.

ANOTAÇÕES DE CADASTRO

TIPO DOCUMENTO	NÚMERO	DATA EXPEDIÇÃO	ÓRGÃO EXPEDIDOR	DATA DE VALIDADE
RG	- - -	- - -	- - -	- - -
PIS/NIS	- - -	- - -	- - -	- - -
Passaporte	- - -	- - -	- - -	- - -
Cartão Nacional de Saúde	- - -	- - -	- - -	- - -

TIPO DOCUMNETO	NÚMERO	ZONA/SEÇÃO	MUNICÍPIO	UF
Título de Eleitor	- - -	- - -	- - -	- - -
CEP Residencial	- - -		Grupo Sanguíneo	- - -

* As anotações de cadastro acima não dispensam a parte interessada da apresentação do documento original, quando exigido pelo órgão solicitante ou quando necessário para identificação de seu portador.

Ofício do Registro Civil das Pessoas Naturais
Oficial: Ignez Consuelo Generoso Lisboa e Alves
Rua Francisco Sales, nº 147 Centro
Januária-MG. (38) 3621-3906
cmjlisboa@yahoo.com.br
Digitada por Bianca-15:57:27

O conteúdo da certidão é verdadeiro. Dou fé.
Januária-MG, 26 de junho de 2024.

PODER JUDICIÁRIO - TJMG
CORREGEDORIA - GERAL DE JUSTIÇA
Ofício do Registro Civil das Pessoas Naturais - MG
Selo Consulta: HPF29410 - Cod. Seg : 4496.5235.5998.0459 - Cod. e Quantidade do(s) ato(s) Praticado(s): 003 - 1 (7901), 1 (7402), 1 (7802) Ato(s) Praticado(s) por: Viviane da Conceição Lopes - Escrevente - Emol.: R$ 57,86 - Tx.Judic.: R$ 10,99 - Total: R$ 68,85 - ISS: R$ 1,64
Consulte a validade no site: https://selos.tjmg.jus.br

Assinatura do Oficial/Substituto
Viviane da Conceição Lopes
Escrevente

08.423.292/0001-99
REGISTRO CIVIL DAS PESSOAS NATURAIS E DE INTERDIÇÕES E TUTELAS
Cartório Mário José Lisboa
IGNEZ CONSUELO GENEROSO LISBOA E ALVES - OFICIAL
ÁLVARO OLIVEIRA ALVES - SUBSTITUTO
Rua Francisco Sales, 147 - CEP 39480-000
Telefone: (038) 3621-3906 - Januária - MG

REGISTRO CIVIL DAS PESSOAS NATURAIS - JANUÁRIA-MG

BE 001505082 BRP

RECIVIL SINDICATO DOS OFICIAIS DE REGISTRO CIVIL DE MINAS GERAIS

Indústria Gráfica Brasileira Ltda

For: **HANNA CAROLINA CAMPOS FERREIRA**

U.S. Customs and Border Protection
Securing America's Borders

Most Recent I-94

Note to employers, local, state or federal agency granting benefits:
Please visit the CBP I-94/I-95 Website and click on the tab for "Get Most Recent I-94/I-95" to perform a search for the applicant to confirm that the biographic and travel information displayed on this I-94/I-95 printout matches the "Get Most Recent I-94/I-95" returned results for this applicant. Reference the CBP I-94/I-95 Website FAQs.

Admission I-94 Record Number: 39109947330

Arrival/Issued Date: 2014 September 12

Class of Admission: J1

Admit Until Date: D/S

Details provided on the I-94 Information form:

Last/Surname: CAMPOS FERREIRA

First (Given) Name: HANNA CAROLINA

Birth Date: 1984 September 25

Document Number: FJ582517

Country of Citizenship: Brazil

- Effective April 26, 2013, DHS began automating the admission process. An alien lawfully admitted or paroled into the U.S. is no longer required to be in possession of a preprinted Form I-94/I-95. A record of admission printed from the CBP website constitutes a lawful record of admission. See 8 CFR § 1.4(d).
- What to do if someone requests your admission info: If an employer, local, state or federal agency requests admission information, present your admission (I-94/I-95) number along with any additional required documents requested by that employer or agency.
- For security, close your browser after retrieving your I-94/I-95 number.
- Nonimmigrant travelers departing the United States by land or private vessel can now use the CBP Link Mobile Application to report their departure. Please note that departure should only be reported after you have physically left the United States. If you departed by air or sea, your departure was likely recorded automatically.

OMB No. 1651-0111
Expiration Date: 05/31/2026

VISTOS VISAS

SEP 12 2014

J1

DS

VISA

UNITED STATES OF AMERICA



Issuing Post Name
RIO DE JANEIRO

Control Number
20141420380001

Surname
CAMPOS FERREIRA

Given Name
HANNA CAROLINA

Visa Type /Class
R J1

Passport Number	Sex	Birth Date	Nationality
FJ582517	F	25SEP1984	BRZL

Entries	Issue Date	Expiration Date	
M	23MAY2014	21MAY2015	0100

Annotation
N0011254707 P-1-00045 J0636393
UNIVERSITY OF MINNESOTA
05-AUG-2014 TO 05-JUL-2015
BEARER IS SUBJECT TO 212(E)

*

VNUSACAMPOS<FERREIRA<<HANNA<CAROLINA<<<<<<<<

FJ582517<2BRA8409252F1505214J1RDJOWBQ4343253