

Professional Master's Degree Animal Production and Health





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Course Modality: **Online**

Duration: **12 months**

Certificate: **TECH Technological University**

Official N° of hours: **1,500 h.**

Website: www.techtute.com/us/veterinary-medicine/professional-master-degree/master-animal-production-health

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01

Introduction

This intensive program in Animal Production and Health provides the most comprehensive update and professional development on all aspects of this area for veterinarians and professionals in related fields. With the support from the best experts in the sector, this twelve-month program covers all the practical and theoretical content necessary for excellent practice: from nutrition and animal health, advanced physiological and anatomical concepts, and production of the most common species, to healthcare, the latest theories on animal welfare, ecology and epidemiology.

A high-quality program that will propel you to the highest levels in the sector.





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A comprehensive update in Animal Production and Health with the most effective educational program on the online market”

The Professional Master's Degree in Animal Production and Health offers an integrated approach (in line with the concept of One Health) for professionals to develop tools enabling them to deal with the complexities of changing disease environments.

This integrative approach places greater emphasis on agroecological resilience, biodiversity protection, efficient use of natural resources, and maintaining the safety of food supply chains, particularly in technologically under-resourced areas. It also takes an in-depth look at the various animal diseases and their close relationship with human health and the environment.

The topics that make up this program focus on Animal Production and Health issues that impact on economic production and public health, such as: zoonotic diseases, transboundary diseases, disease transmission by species, specialist feeding, animal production and hygiene, safety in animal feed manufacturing, and strengthening veterinary systems.

Thus, TECH has designed this program for veterinarians who wish to update and build on their knowledge of animal production and health. It should be noted that, being online, this program facilitates learning by allowing students to organize their schedule in the best possible way and to study when they like.

This **Professional Master's Degree in Animal Production and Health** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ The latest technology in online teaching software
- ◆ A highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- ◆ Case studies presented by practising experts
- ◆ State-of-the-art interactive video systems
- ◆ Teaching supported by telepractice
- ◆ Continuous updating and recycling systems
- ◆ Autonomous learning: full compatibility with other commitments
- ◆ Practical exercises for self-assessment and learning verification
- ◆ Support groups and educational synergies: questions to the expert, debate and knowledge forums
- ◆ Communication with the teacher and work for individual reflection
- ◆ Content that is accessible from any fixed or portable device with an Internet connection
- ◆ Supplementary documentation banks that are permanently available, even after the course



With this high-level program you will learn how to assess the impact of livestock production on public health”

“

A comprehensive educational program that will allow you to acquire the most advanced knowledge of all the areas in which specialist veterinarians are involved”

Our teaching staff is made up of professionals from different fields related to Animal Production and Health. In this way we ensure that we deliver an educational update in line with objectives. A multidisciplinary team of professionals trained and experienced in different areas, will cover the theoretical knowledge in an efficient way, but above all, will bring practical knowledge from their own experience to the course: one of the factors that makes this program unique.

This mastery of the subject matter is complemented by the effectiveness of the methodological design. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. In this way, you will be able to study with a range of easy-to-use and versatile multimedia tools that will give you the skills you need for your specialization.

The design of this program is based on Problem-Based Learning: an approach that conceives learning as a highly practical process. To achieve this remotely, we will use telepractice learning: with the help of an innovative interactive video system, and Learning from an Expert, you will be able to learn as if you were actually dealing with the scenario being studied. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

This innovative program will use a range of different teaching approaches to allow you to learn in a dynamic and effective way.

Benefit from the experience of practising professionals and the analysis of actual success stories, in a high-impact Professional Master's Degree.



02

Objectives

Our objective is to educate highly qualified professionals for the working world. A goal that, in just a few months you will be able to achieve, with a high-intensity and effective program.



“

With this high-level program, you will learn how to establish biosecurity measures for livestock production”



General objectives

- ♦ Develop specialized knowledge in the field of Animal Production and Health
- ♦ Analyze the impact of livestock production on public health
- ♦ Examine the concept of Globalization
- ♦ Explain the term "One Health" and its relationship with veterinary medicine
- ♦ Analyze the competent authorities from the veterinarian's point of view
- ♦ Specify which communications should be made to the competent authorities
- ♦ Establish the anatomical characteristics of the species of interest from a pathophysiological standpoint
- ♦ Examine the physiological processes of the different apparatuses and organ systems of the different animal species
- ♦ Develop a specialized, general, and specific view of the anatomy and physiology of the animal species of interest
- ♦ Analyze the relationships between the different organic systems and apparatuses
- ♦ Build technical and scientific knowledge on animal nutrition and animal food
- ♦ Implement strategies for optimal nutrition and feeding of the various species of economic and domestic animals and wildlife
- ♦ Establish the principles of good animal feeding practices
- ♦ Develop advanced skills and knowledge in Veterinary Epidemiology
- ♦ Demonstrate advanced knowledge on the analysis of epidemiological causes, associations, patterns, trends, and risks
- ♦ Apply the skills acquired to design strategies for the prevention and control of infections/ diseases relevant to veterinarians
- ♦ Analyze the main aspects of ruminant and equine production to obtain healthy products, which are profitable while respecting the environment and animal welfare
- ♦ Determine the infectious-contagious diseases of major interest in ruminants and equids, emphasizing epidemiological, pathogenic, clinical, diagnostic, and control aspects
- ♦ Develop methodological skills to detect (diagnose), prevent, and treat the main diseases for these species
- ♦ Examine the main infectious and contagious diseases in ruminants and equines, highlighting the unique aspects that define each type of pathological process
- ♦ Develop advanced capabilities in the field of swine production and health
- ♦ Integrate knowledge to address real problems and propose models and solutions in an efficient, effective, reasoned, and accurate way
- ♦ Offer specialized technical support, which can add value for each farm that is assessed
- ♦ Control or eradicate diseases with economic repercussions
- ♦ Analyze the different production systems that exist for Avian Production
- ♦ Develop specialized knowledge of advanced aspects of Avian Health
- ♦ Perfect technical and scientific knowledge on the main diseases affecting birds
- ♦ Explore control and eradication methods for the main diseases affecting birds
- ♦ Develop specialist expertise in advanced aspects of wildlife health
- ♦ Design and assess wildlife health surveillance systems
- ♦ Determine the importance of Wildlife Health for Animal Health, Public Health, and Conservation
- ♦ Enhance the handling, management and exploitation of game species and intensive production



- ◆ Examine the most common and important diseases in domestic dogs and cats and describe their management with an emphasis on animal welfare
- ◆ Specify the morphological, ecological, epidemiological, and parasite-host relationship characteristics, as well as the etiology and clinical manifestations
- ◆ Analyze the progression of diseases in pet populations and their possible influence on human health
- ◆ Establish the treatment and control of the main diseases affecting pets and contribute to animal welfare
- ◆ Analyze the levels of organization of living beings in interaction with the environment: individuals, populations, communities, and biosphere ecosystems
- ◆ Enhance cognitive, communicative and specific professional tools and skills for the evaluation, assessment and resolution of animal welfare problems
- ◆ Train high-level veterinarians to be able to apply the knowledge obtained to promote and contribute to the resolution of local, national and international animal welfare issues, with a high regard for ethics, accountability, social responsibility, and environmental concerns
- ◆ Enhance cognitive, communicative, and specific professional tools and competencies for the evaluation, assessment, measurement and resolution of animal welfare issues



Specific objectives

Module 1. Important Animal Production and Health Aspects

- ♦ Describe biosecurity measures in livestock production
- ♦ Analyze the veterinary controls to be carried out at border control
- ♦ Identify zoonotic diseases and communicate them to the authorities
- ♦ Classify antibiotics according to their use group for animals paying attention to antibiotic resistance
- ♦ Describe the official bodies in the field of animal health
- ♦ Specify which notifications should be made to the competent authority and in what manner
- ♦ Analyze the different animal identification systems depending on the species in question
- ♦ Develop specialist knowledge on livestock diseases whose declaration is mandatory
- ♦ Examine the latest innovations and perspectives on animal health

Module 2. Animal Anatomy and Physiology

- ♦ Develop specialist knowledge of the anatomy and physiology of the animal species of interest
- ♦ Examine the anatomical structures of the different apparatus and systems
- ♦ Analyze the comparative anatomy of the different species
- ♦ Directly relate the anatomical structures with the functionality and physiology of the process in which they are involved
- ♦ Study the anatomical-physiological foundations to understand the pathological processes directly or indirectly involved in Animal Health
- ♦ Deepen understanding of the physiological processes most frequently related to pathological processes
- ♦ Apply the acquired knowledge to specific cases
- ♦ Consider Animal Health as a fundamental pillar of Public Health





Module 3. Animal Nutrition and Food

- ♦ Analyze the different types of food and their importance in zootechnics
- ♦ Know the principles of analysis and characteristics of nutritional components in animal food
- ♦ Examine the physicochemical processes by which animals obtain nutrients through food intake in the different stages of development
- ♦ Implement the principles of feeding mechanisms of domestic species (monogastrics and ruminants) in each productive stage
- ♦ Specify the most appropriate tools for the implementation of good practices in animal feeding
- ♦ Analyze the tools used for the control and assurance of quality and safety of food for animal consumption

Module 4. Animal Production and Health

- ♦ Acquire advanced knowledge in Epidemiology
- ♦ Gain specialist knowledge related to the field of animal health in the design of experiments and epidemiological studies
- ♦ Develop specialist knowledge on the statistical analysis of data in veterinary epidemiology
- ♦ Learn to use specific software for Epidemiology
- ♦ Develop skills in Spatial Epidemiology
- ♦ Develop skills to design veterinary health prevention and control strategies
- ♦ Develop Veterinary Health Management skills

Module 5. Ruminant and Equine Production and Health

- ♦ Analyze the different aspects involved in the production and management of ruminants and equines, and their influence on Health, Animal Welfare, quality of the final product, and efficiency of the production process
- ♦ Develop specialized knowledge in the performance of ruminant and equine necropsies, interpretation of lesions, reporting, and sample collection
- ♦ Analyze the main diseases in ruminants and equids, highlighting epidemiological and control approaches
- ♦ Examine the unique pathological aspects of each process to establish a differential diagnosis
- ♦ Establish control strategies to combat the main diseases of veterinary relevance in ruminants and equids

Module 6. Swine Production and Health

- ♦ Autonomously analyze and apply the concepts, tools and relevant management to sanitation in pig farming
- ♦ Accurately diagnose and define the etiology of the pathology and pathophysiological mechanisms of the main diseases affecting swine production
- ♦ Propose diagnostic methods, legal treatments, and prevention methods related to swine health
- ♦ Improve facilities, management, and feeding, in order to obtain maximum productive performance
- ♦ Provide guidance and demonstrate that attention to animal welfare at all stages allows better results in swine production
- ♦ Design farms, minimizing the negative impact on the environment
- ♦ Identify opportunities for improvement on farms and communicate this knowledge to people working in swine production

Module 7. Poultry Production and Health

- ♦ Examine the different production systems available for poultry production
- ♦ Analyze the differences and similarities between different production systems
- ♦ Establish the main biosecurity measures in poultry farms
- ♦ Autonomously perform an avian necropsy based on the guidelines obtained in the program
- ♦ Identify the macroscopic lesions found in an anatomopathological examination and establish a differential diagnosis of the most probable disease
- ♦ Explore the most relevant Pathologies affecting Production Birds
- ♦ Design strategies for the prevention of poultry pathologies

Module 8. Wildlife Production and Health

- ♦ Appreciate the importance of wildlife health surveillance
- ♦ Examine the usefulness of wildlife health studies in animal health, public health and conservation management of wildlife species and ecosystems
- ♦ Analyze the main morbid and infectious processes of wildlife species
- ♦ List diagnostic techniques for wildlife and the main diagnostic difficulties
- ♦ Develop skills for the research and study of wildlife diseases, focussing on health management
- ♦ Develop critical thinking skills in the evaluation of surveillance systems and wildlife health studies
- ♦ Develop skills to carry out the handling, management, and exploitation of game species and animal production

Module 9. Health of Dogs, Cats and Other Species

- ♦ Examine each disease affecting pets
- ♦ Identify their mode of transmission of the pathogenic agents
- ♦ Identify the hosts needed to complete the pathogens' biological cycle
- ♦ Evaluate the symptomatology of each of the diseases
- ♦ Determine the factors determining their establishment in a given location
- ♦ Identify the forms of diagnosis and treatment for each of the diseases to be treated
- ♦ Examine the most important prophylactic measures for optimal control

Module 10. Ecology and Animal Welfare

- ♦ Develop analytical and critical thinking skills through the study of ecological problems
- ♦ Develop the basic concepts of ecology, structure, and functioning
- ♦ Promote innovation as a development tool in animal welfare
- ♦ Build specialist knowledge on animal welfare committed to sustainable development
- ♦ Enhance social-ethical processes with viable, effective, and efficient animal welfare solutions
- ♦ Provide specialist training to students in animal welfare so that they are aware of and committed to sustainable development and care of the environment
- ♦ Encourage the creation and development of innovation programs related to animal welfare
- ♦ Enhance ethical, technical, and social processes to generate viable, effective, and efficient animal welfare solutions in line with the concept of "One Health, One Welfare"
- ♦ Drive social awareness processes focused on the creation of short-term solutions for the application of animal welfare



A path to professional development and growth that will propel you towards a greater level of competitiveness in the employment market"

03 Skills

Professionals will be able to acquire expertise in the Animal Health and Production sector, through an educational approach that will convert the knowledge imparted throughout this intensive Professional Master's Degree into experience.



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An exceptional opportunity to give a boost to your skills, making you one of the most competitive experts in the sector”



General skills

- ♦ Implement animal health programs
- ♦ Establish and control codes of good practice
- ♦ Carry out prevention tasks for priority diseases
- ♦ Intervene in the control of priority diseases
- ♦ Carry out efficient wildlife management
- ♦ Develop public health projects
- ♦ Implement public health projects
- ♦ Work in animal health control in commerce
- ♦ Oversee international animal health projects
- ♦ Create targeted information on animal health and production and disseminate it to professionals in the sector





Specific skills

- ♦ Master the essential aspects of animal production and health
- ♦ Recognize the advanced aspects of animal anatomy
- ♦ Get to know the most advanced aspects of animal physiology
- ♦ Be able to establish adequate animal feeding parameters
- ♦ Get to know all the aspects of epidemiology in animal health
- ♦ Work in any area of ruminant production and health
- ♦ Work in any area of equids production and health
- ♦ Work in any area of swine production and health
- ♦ Work in any area of poultry production and health
- ♦ Work in any area of wildlife production and health
- ♦ Work in any area of intervention to ensure the health of dogs, cats, and other species
- ♦ Be skilled in the implementation of ecological animal production models
- ♦ Develop ways to promote and maintain animal welfare

04

Course Management

In line with our commitment to excellence, we are proud to put a high-level teaching faculty at your disposal, chosen for their proven experience. A unique opportunity to learn from the best.





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Leading professionals in the field have come together to teach you the latest advances in Animal Production and Health”

Management



Dr. Ruiz Fons, José Francisco

- ♦ Member of the Spanish Society for the Conservation and Study of Mammals (SECEM) and the Wildlife Disease Association (WDA)
- ♦ CSIC Senior Scientist at the Institute for Research in Hunting Resources IREC
- ♦ Researcher in the Health Research Fund at The Macaulay Land Use/James Hutton Research Institute and the Carlos III Health Institute
- ♦ Degree in Veterinary Medicine from the University of Murcia
- ♦ PhD in Biology and Technology of Hunting Resources from the University of Castilla La Mancha

Professors

Dr. Díez Valle, Carlos

- ♦ Head of Service of the Agriculture and Livestock Area of the Excmá
- ♦ European Doctor and Graduate in Veterinary Medicine from the University of León
- ♦ Member of the Academy of Veterinary Sciences of Castilla y León
- ♦ Official Veterinarian of the Castilla y León Regional Government in Zamora
- ♦ Director of the International School of Agro-environmental Knowledge, Ecognitio S.L

Dr. Sarmiento García, Ainhoa

- ♦ Veterinarian. Head of the Nutrition Department. Casaseca Livestock, SLU
- ♦ Responsible for the Antibiotic Reduction Program and Animal Welfare. Management of Productive Data of Fattening and Mothers (Pigchamp)
- ♦ Elaboration of Projects. R&D&I Management

Ms. Gómez García, Andrea

- ♦ Part of the Technical - Commercial team at Alternative Swine Nutrition (ASN)
- ♦ Veterinary Graduate from the University of Zaragoza
- ♦ Master in Swine Health and Production by the University of Lérida

Mr. García Sánchez, Juan

- ♦ PhD in Veterinary Science
- ♦ Degree in Veterinary Medicine (specializing in Animal Medicine and Health). Faculty of Veterinary Medicine of Cáceres, University of Extremadura
- ♦ Degree in Biochemistry, University of Extremadura
- ♦ University Expert Course "Statistics applied to Health Sciences" (UNED) (500 teaching hours)
- ♦ Master's Degree in Environmental Management

Mr. Risco Pérez, David

- ♦ Administrator of Neobeitar S.L., a recently created company dedicated to Laboratory Diagnosis, Veterinary Technical Consultancy, and Innovation in Animal Health
- ♦ PhD in Veterinary Medicine from the University of Extremadura. Syva Award for the best Thesis in Animal Health
- ♦ Postdoctoral training at the University of Aveiro (Portugal)
- ♦ Researchers of the Torres Quevedo Program, co-funded by the Ministry of Economy and Competitiveness

Dr. Morchón García, Rodrigo

- ♦ Doctor Europeus in Biological Sciences
- ♦ Secretary of the European Society of Dirofilaria and Angiostrongylus (ESDA)
- ♦ Spokesman of the Spanish Society of Parasitology
- ♦ Associate Professor in the field of Parasitology at the University of Salamanca

Dr. González Vega, Francisco

- ♦ Product manager (Animal Nutrition) Livestock Technician Limited Company Veterinarian
- ♦ Technical Training Manager (CEO) / Docent Autonomous Education Management S.L./ Government of Extremadura; ASAJA ;UPA ; UNEXCA; CESES, S.L.; MHC, S.L.
- ♦ Compliance Inspector for the Department of Agriculture / Regional Government of Extremadura
- ♦ Author and contributor to more than 20 articles in scientific journals and/or books

Dr. Risalde Moya, María Ángeles

- ♦ PhD from the University of Cordoba with International Mention and Extraordinary Doctorate Award
- ♦ Degree in Veterinary Medicine with Extraordinary Award at the University of Cordoba
- ♦ Collaborator in 16 European, National, or Regional Research Projects (2 as Main Investigator) and 3 R&D contracts with companies (1 as Main Investigator)
- ♦ Author of 122 Communications to Congresses with up to 8 awards for the Best Communication
- ♦ Incorporation in the Department of Comparative Anatomy and Pathology at the University of Cordoba

Dr. Molina Hernández, Verónica

- ♦ Phd from the University of Córdoba in the Biosciences and Agroalimentary Sciences Program
- ♦ Degree in Biology from the University of Córdoba
- ♦ Researcher of the Juan de la Cierva National Program Incorporation in the Department of Comparative Anatomy and Pathology of the University of Cordoba
- ♦ Lecturer in the subjects of Cytology and Histology, General Pathological Anatomy, and Systematic Pathological Anatomy for the Veterinary Degree at the University of Cordoba
- ♦ Codirector of doctoral theses

Dr. García Bocanegra, Ignacio

- ◆ PhD in Veterinary Science
- ◆ Graduate of the European College of Zoological Medicine (ECZM) (Wildlife Population Health)
- ◆ Degree in Veterinary Medicine and in Food Science and Technology
- ◆ Master's Degree in Animal Medicine, Health, and Breeding
- ◆ Full Professor of the Department of Animal Health, University of Cordoba
- ◆ Study of the Epidemiology and Control of Infectious Diseases affecting Wild Animals and their interaction with Domestic species in the context of the research group AGR-149 of the University of Cordoba

Dr. Cano Terriza, David

- ◆ PhD in Veterinary Science (Excellent Cum Laude) from the University of Cordoba (Spain)
- ◆ Degree in Veterinary Medicine
- ◆ Official Master's Degree in Animal Medicine, Health and Improvement from the University of Cordoba (Spain) with Extraordinary Awards upon completion of the Degree and Master's Degree, respectively
- ◆ Qualified for animal experimentation (B accreditation according to the applicable standards for the protection of animals used for experimental and other scientific purposes, including teaching)

Dr. Gómez Castañeda, Irma

- ◆ President of the World Network of Veterinary Specialists in Animal Welfare
- ◆ Doctoral candidate. Veterinarian and Zootechnician
- ◆ General Director of the Animal Welfare Institute, Puebla, Mexico
- ◆ Master's Degree in Clinical Veterinary Ethology and Animal Welfare, Universidad Complutense de Madrid (UCM), Spain
- ◆ Postgraduate in Veterinary Clinical Neurology from the Catholic University of Salta, Argentina
- ◆ Master's Degree in Education and Doctorate in Education from the UAT, Argentina

- ◆ Graduate in Animal Welfare and Behavioral Medicine from the Latin American Veterinary College of Animal Welfare and Behavioral Medicine Certificate in Animal Behaviour and Welfare, The University of Edinburgh, The Royal School of Veterinary Studies, International Center for Animal Welfare Education. Scotland, United Kingdom:
- ◆ Training in Forensic Veterinary Medicine, Animal Law, and Criminalistics from the Annual Training Program Bogotá, Colombia. Certified in Psychological First Aid
- ◆ Teacher, Researcher, and thesis director in Ethology, Clinical Ethology and Animal Welfare for Undergraduate and Postgraduate Courses, Universidad Autónoma de Barcelona, Spain

Dr. Díaz Gaona, Cipriano

- ◆ Doctorate in Veterinary from the University of Córdoba
- ◆ Degree in Veterinary Medicine, specializing in Animal Production and Economics
- ◆ Andrés Núñez de Prado National Prize for Research in Organic Agriculture and Livestock
- ◆ Doctoral Courses carried out in the Department of Animal Production ("Organic Livestock: Management of Farms in Disadvantaged Areas")
- ◆ Specialization in Animal Genetics and Reproduction (Master's Degree in Equine Technology)
- ◆ Honorary collaborator of the Department of Animal Production for 7 academic years

D. Gómez Gómez, Francisco Javier

- ◆ Swine Technical Manager at Laboratorios Maymó
- ◆ Degree in Veterinary Medicine from the University of Extremadura and Master in Sales and Marketing Management from EAE Business School
- ◆ Technician in charge of Farms or as External Advisor to Swine veterinarians
- ◆ Member of Porcine Sanitary Defence Group in the province of Salamanca
- ◆ Technical-economic Manager of Farms in all the productive phases of the sector in Inga Food
- ◆ Teacher of External Practices of the Department of Animal Health of the Complutense University of Madrid
- ◆ Pig commercial technician in Ecuphar Veterinaria

D. Sánchez Tarifa, Eugenio

- ♦ Veterinary Technical Advisor, Boehringer-Ingelheim Animal Health Spain, s.A.U. Sanitary and Productive Veterinary Consultancy for Swine Companies and Farms
- ♦ Veterinary Technical Service, Ingafood, S.A. Sanitary and Productive Management of Swine Farms in Integration
- ♦ Veterinarian, Veterinary Clinic La Paz
- ♦ Veterinarian in Small Animal Clinic

Ms. Ranilla García, Jara

- ♦ Degree in Veterinary Medicine from the University of Leon
- ♦ Degree in Veterinary Medicine by means of the Bachelor's Thesis modality. University of Leon
- ♦ Certificate of Pedagogical Aptitude. University of Leon
- ♦ Professional Master's Degree in Veterinary Research and Food Science and Technology University of Leon
- ♦ Postgraduate Diploma in Small Animal Surgery and Anesthesia. Autonomous University of Barcelona

Dr. Limón Garduza, Rocío Ivonne

- ♦ Quality Inspector and Bromatological Expertise at Just Quality System S.L.
- ♦ Lecturer in Food Safety at Training Center Mercamadrid (CFM)
- ♦ Responsible for Quality Management and Project Development at KMC, Majadahonda. Madrid
- ♦ Head of the Quality Control Department at Frutas Garralón Imp-Exp, S.A. Mercamadrid. Madrid
- ♦ Bachelor's Degree in Food Science and Technology. Benemérita Autonomous University, Puebla, Mexico. Approved
- ♦ Doctorate in Agricultural Chemistry and Bromatology Autonomous University of Madrid
- ♦ Master's Degree in Food Biotechnology (MBTA). University of Oviedo

Mr. Romero Castañón, Salvador

- ♦ Veterinarian and Zootechnician graduated from the Benemérita Autonomous University of Puebla, in Mexico
- ♦ Master of Science in Natural Resources and Rural Development, Colegio de la Frontera Sur, Mexico
- ♦ PhD student in Agricultural and Environmental Sciences
- ♦ Courses at the University of Nebraska, USA, and at the Cayetano Heredia University in Peru
- ♦ Professor-Researcher at the Faculty of Veterinary Medicine and Animal Husbandry at Benemérita Autonomous University, Puebla
- ♦ Member of the IUCN Deer Specialist Group

Dr. Giesen, Christine

- ♦ Doctor Specialist in Preventive Medicine and Public Health, Infanta Sofía University Hospital. San Sebastián de los Reyes (Madrid)
- ♦ Degree in Medicine from the Complutense University of Madrid
- ♦ Master's Degree in Business Administration, Pharmaceutical Industry and Biotechnology, UDIMA
- ♦ Master's Degree in Tropical Medicine and International Health, Autonomous University of Madrid
- ♦ Master's Degree in Public Health, National School of Health, Carlos III Institute, Madrid
- ♦ Master's Degree in Development Cooperation, National Distance Education University

05

Structure and Content

The structure and contents of this program have been developed by different specialists in the area, with a clear purpose: to ensure that professionals acquire each and every one of the skills necessary to become true experts in the field. It is a very comprehensive and well-structured program that will lead the professional to the highest standards of excellence and success.





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*A comprehensive program delivered
by professionals with years of
experience in the sector”*

Module 1. Important Animal Production and Health Aspects

- 1.1. Animal Production
 - 1.1.1. Introduction
 - 1.1.2. Current Situation of the Sector
 - 1.1.3. Role of the Veterinarian
- 1.2. Animal Production Systems
 - 1.2.1. Intensive
 - 1.2.2. Alternative Systems
 - 1.2.2.1. Extensive Production
 - 1.2.2.2. Ecological Production
- 1.3. Livestock Production
 - 1.3.1. Biosecurity Measures
 - 1.3.2. Vaccination and Treatment Plans
- 1.4. Health in the Livestock Sector
 - 1.4.1. Concept of Animal Health
 - 1.4.2. Animal Identification Systems
 - 1.4.3. Movements of Animals For Slaughter
- 1.5. Animal Welfare
 - 1.5.1. Current Situation
 - 1.5.2. Animal Welfare Measures
- 1.6. Impacts of Livestock Production on Public Health
 - 1.6.1. Concept of One Health
 - 1.6.2. Zoonotic Diseases
 - 1.6.2.1. Main Zoonotic Diseases
 - 1.6.2.2. Declaration to the Competent Authority
 - 1.6.3. Resistance to Antibiotics
 - 1.6.3.1. Importance of Antibiotic Resistance
 - 1.6.3.2. Categorization of Antibiotics Based on their Use in Animals
- 1.7. Impact of Animal Production on Food Safety
 - 1.7.1. Food Safety
 - 1.7.2. Major Foodborne Diseases
 - 1.7.3. Declaration

- 1.8. Notifiable Diseases of Livestock
 - 1.8.1. Introduction
 - 1.8.2. Main Diseases
 - 1.8.3. Notification
- 1.9. Competent Veterinary Medicine and Animal Health Authorities
 - 1.9.1. Introduction
- 1.10. Leading Laboratories
 - 1.10.1. Introduction
 - 1.10.2. Sensitivity and Specificity
 - 1.10.3. Sample Collection Tables

Module 2. Animal Anatomy and Physiology

- 2.1. Anatomy of Ruminants
 - 2.1.1. Locomotor System
 - 2.1.2. Digestive system
 - 2.1.3. Cardiovascular System
 - 2.1.4. Respiratory System
 - 2.1.5. Urinary System
 - 2.1.6. Reproductive System
 - 2.1.7. Nervous System and Sense Organs
- 2.2. Equine Anatomy
 - 2.2.1. Locomotor System
 - 2.2.2. Digestive System
 - 2.2.3. Cardiovascular System
 - 2.2.4. Respiratory System
 - 2.2.5. Urinary System
 - 2.2.6. Reproductive System
 - 2.2.7. Nervous System and Sense Organs



- 2.3. Swine Anatomy
 - 2.3.1. Locomotor System
 - 2.3.2. Digestive System
 - 2.3.3. Cardiovascular System
 - 2.3.4. Respiratory System
 - 2.3.5. Urinary System
 - 2.3.6. Reproductive System
 - 2.3.7. Nervous System and Sense Organs
- 2.4. Anatomy of Dogs and Cats
 - 2.4.1. Locomotor System
 - 2.4.2. Digestive System
 - 2.4.3. Cardiovascular System
 - 2.4.4. Respiratory System
 - 2.4.5. Urinary System
 - 2.4.6. Reproductive System
 - 2.4.7. Nervous System and Sense Organs
- 2.5. Anatomy of Birds
 - 2.5.1. Locomotor System
 - 2.5.2. Digestive System
 - 2.5.3. Cardiovascular System
 - 2.5.4. Respiratory System
 - 2.5.5. Urinary System
 - 2.5.6. Reproductive System
 - 2.5.7. Nervous System and Sense Organs
- 2.6. Neurophysiology
 - 2.6.1. Introduction
 - 2.6.2. The Neuron and The Synapse
 - 2.6.3. Lower Motor Neuron, Upper Motor Neuron, and its Alterations
 - 2.6.4. Autonomic Nervous System
 - 2.6.5. Cerebrospinal Fluid and Blood-Brain Barrier

- 2.7. Cardiovascular and Respiratory Physiology
 - 2.7.1. Introduction
 - 2.7.2. Electrical Activity of the Heart: Electrocardiogram
 - 2.7.3. Pulmonary and Systemic Circulation
 - 2.7.4. Neuronal and Hormonal Control of Blood Volume and Blood Pressure
 - 2.7.5. Respiratory Function: Pulmonary Ventilation
 - 2.7.6. Gas Exchange
- 2.8. Physiology of the Gastrointestinal Tract and Endocrinology
 - 2.8.1. Regulation of Gastrointestinal Functions
 - 2.8.2. Secretions of the Digestive Tract
 - 2.8.3. Non-Fermentative Processes
 - 2.8.4. Fermentative Processes
 - 2.8.5. Endocrine System
- 2.9. Renal Physiology
 - 2.9.1. Glomerular Filtration
 - 2.9.2. Water Balance
 - 2.9.3. Acid-Base Balance
- 2.10. Reproduction Physiology
 - 2.10.1. Reproductive Cycles
 - 2.10.2. Gestation and Labor
 - 2.10.3. Male Reproductive Physiology

Module 3. Animal Nutrition and Feeding

- 3.1. Introduction to Animal Nutrition and Feeding: Types of Food
 - 3.1.1. Grazing
 - 3.1.2. Silage
 - 3.1.3. Feedstuffs
 - 3.1.4. Agro-Industrial By-products
 - 3.1.5. Supplements
 - 3.1.6. Biotechnological Products

- 3.2. Food Analysis and Composition
 - 3.2.1. Water and Dry Matter
 - 3.2.2. Proximate Determination of Foods
 - 3.2.3. Protein and Non-protein Nitrogen Analysis
 - 3.2.4. Fiber Determination
 - 3.2.5. Mineral Analysis
- 3.3. Nutritional Value of Animal Feeds
 - 3.3.1. Digestibility
 - 3.3.2. Crude and Digestible Protein
 - 3.3.3. Energy Content
- 3.4. Nutrition and Digestion in Monogastric Animals
 - 3.4.1. Digestive Processes in Swine
 - 3.4.2. Digestive Processes in Poultry
 - 3.4.3. Digestive Processes in Dogs and Cats
 - 3.4.4. Prececal Digestion in Horses
 - 3.4.6. Absorption and Detoxification
- 3.5. Nutrition and Digestion in Ruminants and other Herbivores
 - 3.5.1. Dynamics of Digestion in Ruminants
 - 3.5.2. Control and Modification of Rumen Fermentation
 - 3.5.3. Alternative Digestion Sites
 - 3.5.4. Digestion and Environment
- 3.6. Absorption and Metabolism
 - 3.6.1. Metabolism of the Main Components of Food
 - 3.6.2. Metabolism Control
- 3.7. Animal Feeding
 - 3.7.1. Nutritional Requirements of Maintenance
 - 3.7.2. Nutritional Requirements During Growth
 - 3.7.3. Nutritional Requirements during Reproduction
 - 3.7.4. Lactation
 - 3.7.5. Voluntary Feed Intake

- 3.8. Good Animal Feeding Practices
 - 3.8.1. Water
 - 3.8.2. Good Grazing Practices
 - 3.8.3. Stall Feeding
 - 3.8.4. Fattening and Intensive Feeding
- 3.9. Animal Feed Quality Control and Assurance
 - 3.9.1. Transport, Reception, and Storage Control
 - 3.9.2. Food Preparation and Administration Control
 - 3.9.3. Sanitation and Pest Control
 - 3.9.4. Traceability and Lot Recovery
 - 3.9.5. Food Analysis
 - 3.9.6. Personnel Training
 - 3.9.7. Record Keeping and Documentation System
- 3.10. Food Safety
 - 3.10.1. The concept of Food Hazards
 - 3.10.2. Types of Food Hazards
 - 3.10.3. Hazard Control Measures in Animal Feed
 - 3.10.4. The concept of Risk in Food
 - 3.10.5. Risk Assessment Applied to Food Safety
 - 3.10.6. Good Agricultural Practices and Animal Food Safety
 - 3.10.7. Food Safety Assurance Management

Module 4. Animal Production and Health

- 4.1. Concepts and Background of Epidemiology
 - 4.1.1. Basic Concepts in Epidemiology
 - 4.1.2. The Individual and the Population
 - 4.1.3. Basic concepts of Population Monitoring
 - 4.1.4. Causality and Association
 - 4.1.5. Basic Pathology Concepts
 - 4.1.6. Epidemiology and Demography
 - 4.1.7. Disease and Infection Patterns
 - 4.1.8. Uncertainty in Epidemiology
- 4.2. Experimental Design in Epidemiology
 - 4.2.1. Data Collection in Epidemiology
 - 4.2.2. Sampling Design
 - 4.2.3. Stratification, Representativeness, Balance
 - 4.2.4. Types of Epidemiological Sampling
 - 4.2.5. Sample Size Estimates
 - 4.2.6. Sampling Biases
- 4.3. Descriptive Epidemiology I. Theoretical Bases
 - 4.3.1. Epidemiological Research
 - 4.3.2. Types of Observational Epidemiological Studies
 - 4.3.3. Types of Epidemiological Variables
 - 4.3.4. Descriptive Parameters
 - 4.3.5. Measures of Dispersion
 - 4.3.6. Probability Distributions
 - 4.3.7. Epidemic Curves, Cycles, and Trends
 - 4.3.8. Development of Hypotheses
- 4.4. Descriptive Epidemiology II. Data Analysis
 - 4.4.1. Open-Access Epidemiological Software
 - 4.4.2. Sample Size Estimates
 - 4.4.3. Probability Distribution Analysis
 - 4.4.4. Descriptive Analysis
 - 4.4.5. Association Analysis
 - 4.4.6. Applications to Diagnostic Tests
 - 4.4.7. Analysis of Absence of Disease/Infection
- 4.5. Analytical Epidemiology I: Theoretical Background
 - 4.5.1. Background of Analytical Epidemiology
 - 4.5.2. Hypothesis Analysis
 - 4.5.3. Epidemiological Parameters
 - 4.5.4. Independence of Observations
 - 4.5.5. Case-control Studies
 - 4.5.6. Cohort Studies
 - 4.5.7. Experimental Studies
 - 4.5.8. Basis of Multivariate Analysis

- 4.6. Analytical Epidemiology II: Data Analysis
 - 4.6.1. Estimates of Association in Case-Control Studies
 - 4.6.2. Estimates of Association in Cohort Studies
 - 4.6.3. Inference in Experimental Studies
 - 4.6.4. Biases and Limitations in Analytical Epidemiology
 - 4.6.5. Multivariate Analysis
- 4.7. Analysis of Risk Factors
 - 4.7.1. Definition of Risk Factor
 - 4.7.2. Multidisciplinary Approach to Risk Factor Analysis
 - 4.7.3. Qualitative Risk Analysis
 - 4.7.4. Quantitative Risk Analysis
 - 4.7.5. Applications of Mathematical Modeling in Risk Analysis
- 4.8. Spatial Epidemiology
 - 4.8.1. Background of Spatial Epidemiology
 - 4.8.2. Contagiousness, Transmission, and Basic Reproductive Rate
 - 4.8.3. Spatial Connectivity
 - 4.8.4. Spatial Dispersal Patterns
 - 4.8.5. Molecular Epidemiology
 - 4.8.6. Disease/Infection Maps
 - 4.8.7. Spatial Correlation Studies
 - 4.8.8. Cluster Analysis
 - 4.8.9. Network Analysis
- 4.9. Applications of Epidemiology for Prevention and Control
 - 4.9.1. Design of Risk-Based Prevention Strategies
 - 4.9.2. Design of Biosecurity Measures
 - 4.9.3. Control of Risk Factors
 - 4.9.4. Mathematical Models applied to Prevention and Control
- 4.10. Veterinary Health Management
 - 4.10.1. Epidemiological Surveillance Concepts and Systems
 - 4.10.2. Concepts in Veterinary Health Management
 - 4.10.3. Hygiene and Prevention
 - 4.10.4. Zoning



Module 5. Ruminant and Equine Production and Health

- 5.1. Main Ruminant Production Systems
 - 5.1.1. Cattle and Small Ruminants
 - 5.1.2. Production Systems: Intensive and Extensive
 - 5.1.3. Main Breeds and Productions: Meat and Milk
 - 5.1.4. Reproduction, Management, and Feeding
 - 5.1.5. Facilities and Equipment
 - 5.1.6. Animal Hygiene and Welfare
- 5.2. Main Equine Production Systems
 - 5.2.1. The Equine Sector
 - 5.2.2. Production Systems
 - 5.2.3. Main Breeds and Productions: Meat and Sport
 - 5.2.4. Reproduction, Management, and Feeding
 - 5.2.5. Facilities and Equipment
 - 5.2.6. Animal Hygiene and Welfare
- 5.3. Ruminant and Equine Necropsy
 - 5.3.1. Equipment and Instruments
 - 5.3.2. Medical History
 - 5.3.3. External Examination
 - 5.3.4. Orderly and Systematic Necropsy
 - 5.3.5. Sample Collection
 - 5.3.6. Completion of the Necropsy Report
 - 5.3.7. Disposal of the Corpse and Disinfection of Instruments
- 5.4. Main General Infectious and Contagious Diseases in Ruminants
 - 5.4.1. Foot and Mouth Disease
 - 5.4.2. Bovine Viral Diarrhea
 - 5.4.3. Bluetongue
 - 5.4.4. Mammitis
 - 5.4.5. Contagious Agalaxia of Small Ruminants
 - 5.4.6. Piroplasmosis
- 5.5. Main Respiratory Processes in Ruminants
 - 5.5.1. TB
 - 5.5.2. Infectious Bovine Rhinotracheitis
 - 5.5.3. Pasteurellosis: Bovine Hemorrhagic Septicemia
 - 5.5.4. Ovine Osteoarthritis
 - 5.5.5. Bronchopulmonary Nematodosis
- 5.6. Main Digestive Processes in Ruminants
 - 5.6.1. Neonatal Diarrhea Syndrome
 - 5.6.2. Enterotoxemias
 - 5.6.3. Paratuberculosis
 - 5.6.4. Protozoosis
 - 5.6.5. Helminthiasis
- 5.7. Main Reproductive Processes in Ruminants
 - 5.7.1. Bovine Brucellosis and Small Ruminant Brucellosis
 - 5.7.2. Ovine Enzootic Abortion
 - 5.7.3. Q fever
 - 5.7.4. Toxoplasmosis
 - 5.7.5. Neosporosis
- 5.8. Main Cutaneous Processes in Ruminants
 - 5.8.1. Pedero
 - 5.8.2. Bovine Hypodermosis
 - 5.8.3. Ruminant Mange
 - 5.8.4. Miasis
 - 5.8.5. Tick Infestation
- 5.9. Main Nervous Processes in Ruminants
 - 5.9.1. Maedi-visna and Arthritis-encephalitis Caprinae
 - 5.9.2. Transmissible Spongiform Encephalopathies
 - 5.9.3. Histotoxic and Neurotoxic Clostridiosis
 - 5.9.4. Listeriosis
 - 5.9.5. Cenurosis

- 5.10. Main Equine Diseases
 - 5.10.1. Equine Rhinopneumonitis
 - 5.10.2. Equine Influenza
 - 5.10.3. Equine Mumps
 - 5.10.4. Equine Rhodococcosis
 - 5.10.5. Infectious Endometritis
 - 5.10.6. Equine Encephalitis
 - 5.10.7. Strongylosis

Module 6. Swine Production and Health

- 6.1. Installations in Swine Farms
 - 6.1.1. External Biosafety Common on all Farms
 - 6.1.2. Breeder Farm
 - 6.1.3. Weaning Farm
 - 6.1.4. Fattening Farm
- 6.2. Handling in Swine Production
 - 6.2.1. Handling Related to Breeders
 - 6.2.2. Handling Related to Weaned Piglets
 - 6.2.3. Handling Related to Fattening Pigs
- 6.3. Main Infectious Diseases (I)
 - 6.3.1. Diseases producing Systemic Symptomatology
 - 6.3.1.1 African Swine Fever (ASF)
 - 6.3.1.2. Diseases Associated to Porcine Circovirus Type 2
 - 6.3.1.2.1. Post-weaning Multisystemic Wasting Syndrome (PMWS)
 - 6.3.1.2.2. Proliferative Necrotizing Pneumonia (PNP) or Pulmonary Disease
 - 6.3.1.2.3. Enteritis or Enteric Disease
 - 6.3.1.2.4. Porcine Dermatitis and Nephropathy Syndrome (PDNS)
 - 6.3.1.3. Red Disease
 - 6.3.1.4. Sudden Death due to Clostridium Novyi Types A and B

- 6. 4. Main Infectious Diseases (II)
 - 6.4.1. Porcine Respiratory Complex
 - 6.4.2. Swine Enzootic Pneumonia (SEP)
 - 6.4.3. Porcine Reproductive and Respiratory Syndrome (PRRS)
 - 6.4.4. Glasser's Disease
 - 6.4.5. Porcine Pleuropneumonia (PP)
 - 6.4.6. Swine Influenza or Swine Flu
 - 6.4.7. Pasteurellosis
 - 6.4.7.1. Pneumonic Processes
 - 6.4.7.2. Porcine Atrophic Rhinitis (AR)
- 6.5. Main Infectious Diseases (III): Digestive Pathologies
 - 6.5.1. Hemorrhagic Dysentery
 - 6.5.1.1. Etiology
 - 6.5.1.2. Pathogenesis
 - 6.5.1.3. Diagnosis
 - 6.5.1.4. Treatment
 - 6.5.1.5. Practical Aspects
 - 6.5.2. Proliferative Ileitis
 - 6.5.2.1. Etiology
 - 6.5.2.2. Pathogenesis
 - 6.5.2.3. Diagnosis
 - 6.5.2.4. Treatment
 - 6.5.2.5. Practical Aspects
 - 6.5.3. Colibacillosis
 - 6.5.3.1. Etiology
 - 6.5.3.2. Pathogenesis
 - 6.5.3.3. Diagnosis
 - 6.5.3.4. Treatment
 - 6.5.3.5. Practical Aspects

- 6.5.4. Clostridiosis
 - 6.5.4.1. Etiology
 - 6.5.4.2. Pathogenesis
 - 6.5.4.3. Diagnosis
 - 6.5.4.4. Treatment
 - 6.5.5. Practical Aspects
- 6.5.5. Salmonellosis
 - 6.5.5.1. Etiology
 - 6.5.5.2. Pathogenesis
 - 6.5.5.3. Diagnosis
 - 6.5.5.4. Treatment
 - 6.5.5.5. Practical Aspects
- 6.6. Frequent Causes of Reproductive Failure in Sows
 - 6.6.1. Causes of Infectious Origin
 - 6.6.1.1. Bacteria
 - 6.6.1.1.1. Leptospira Interrogans
 - 6.6.1.1.2. Brucella Suis
 - 6.6.1.1.3. Chlamydia
 - 6.6.1.1.4. Dirty Sow Syndrome (SCS)
 - 6.6.1.2. Virus
 - 6.6.1.2.1. Porcine Reproductive and Respiratory Syndrome (PRRS)
 - 6.6.1.2.2. Porcine Parvovirus (PPV)
 - 6.6.1.2.3. Porcine Circovirus Type 2 (PCV 2)
 - 6.6.1.2.4. Aujeszky's Disease Virus (ADV)
 - 6.6.2. Causes of Non-infectious Origin Associated with:
 - 6.6.2.1. Breeder Management
 - 6.6.2.1.1. Replenishment
 - 6.6.2.1.2. Estrus Detection
 - 6.6.2.1.3. Seminal Quality
 - 6.6.2.2. Environments and Facilities
 - 6.6.2.3. Feeding
- 6.7. Main Parasitic Diseases
 - 6.7.1. Internal Parasites
 - 6.7.1.1. Digestive Parasites
 - 6.7.1.1.1. Roundworms: Ascaris Suum
 - 6.7.1.1.2. Whipworms: Trichuris Suis
 - 6.7.1.1.3. Red Stomach Worms: Hyostrongylus Rubidus
 - 6.7.1.1.4. Nodular Worms: Oesophagostomum De Datum
 - 6.7.1.1.5. Thread worms: Strongyloides Ransomi
 - 6.7.1.2. Pulmonary Parasites
 - 6.7.1.2.1. Lung Worms: Metastrongylus Apri
 - 6.7.2. External Parasites
 - 6.7.2.1. Scabies
 - 6.7.2.2. Lice
 - 6.7.3. Other Parasitic Diseases
 - 6.7.3.1. Trichinellosis: Trichinella Spiralis
- 6.8. Sanitary Actions (I)
 - 6.8.1. Diagnosis of Sanitary Problems in Farms
 - 6.8.2. Regulated Necropsy and Interpretation of Lesions
 - 6.8.3. Sampling and Sending to Diagnostic Laboratory
 - 6.8.4. Interpretation of Laboratory Results
- 6.9. Sanitary Actions (II)
 - 6.9.1. Disease Control Strategies
 - 6.9.2. Vaccination Plans
 - 6.9.3. Antibiotic Treatments
 - 6.9.4. Alternative Treatments
- 6.10. Food Safety and Environmental Management
 - 6.10.1. Food Safety and Feed Hygiene
 - 6.10.1.1. Regulation (EC) 1831/2005
 - 6.10.1.2. Quality Plan
 - 6.10.1.3. Cleaning and Disinfection Plan
 - 6.10.2. Waste Management
 - 6.10.2.1. Slurry Management Plan
 - 6.10.2.2. On-Farm Gas Production

Module 7. Poultry Production and Health

- 7.1. Poultry Production Systems
 - 7.1.1. Industrial Production
 - 7.1.2. Free-range Production
 - 7.1.3. Organic Production
 - 7.1.4. Other Alternative Production
- 7.2. Animal Welfare and Biosecurity Measures in Poultry
 - 7.2.1. Biosecurity Measures in Poultry Farms
 - 7.2.2. Animal Welfare in Meat Poultry
 - 7.2.3. Animal Welfare in Laying Poultry
- 7.3. Avian Necropsy
 - 7.3.1. Technique
 - 7.3.2. Sample Collection
 - 7.3.3. Interpretation of Lesions
- 7.4. Main Bacterial Diseases
 - 7.4.1. Fowl Cholera
 - 7.4.2. Infectious Coryza
 - 7.4.3. Colibacillosis
 - 7.4.4. Mycoplasmosis
- 7.5. Main Viral Diseases (I)
 - 7.5.1. Infectious Bronchitis
 - 7.5.2. Avian Encephalomyelitis
 - 7.5.3. Gumboro Disease
 - 7.5.4. Marek's Disease
- 7.6. Main Viral Diseases (II)
 - 7.6.1. Newcastle Disease
 - 7.6.2. Influenza
 - 7.6.3. Infectious Laryngotracheitis
 - 7.6.4. Leukosis (Lymphoid, Myeloid)
- 7.7. Main Viral Diseases (III)
 - 7.7.1. Infectious Rhinotracheitis
 - 7.7.2. Laying Drop Syndrome
 - 7.7.3. Fowl Pox
 - 7.7.4. Infectious Anemia



- 7.8. Main Parasitic Diseases
 - 7.8.1. Coccidiosis
 - 7.8.2. Histomoniasis
 - 7.8.3. Other Intestinal Parasitosis
 - 7.8.4. Trichomoniasis
 - 7.8.5. Other Respiratory Parasitosis
- 7.9. Fungal Diseases
 - 7.9.1. Aspergillosis
 - 7.9.2. Mycotoxicosis
- 7.10. Sanitary Actions
 - 7.10.1. Disease Control Strategies
 - 7.10.2. Vaccination Plans
 - 7.10.3. Antibiotic Treatments
 - 7.10.4. Alternative Treatments

Module 8. Wildlife Production and Health

- 8.1. Introduction to Wildlife Health
 - 8.1.1. Definition of Wildlife
 - 8.1.2. Concepts of Ecology Applied to Wildlife Health
 - 8.1.3. Disease, from the Individual to the Population
 - 8.1.4. Concepts of Disease, Pathogens, Infections, and Parasites in Wildlife
 - 8.1.5. Health Conditions of Wild Species
 - 8.1.6. Relevance of Wildlife Health
 - 8.1.7. Emerging and Unstudied Diseases
- 8.2. Wildlife Health Surveillance
 - 8.2.1. Relevance of Wildlife Health Surveillance
 - 8.2.2. Objectives of Wildlife Health Surveillance
 - 8.2.3. Sampling Logistics and Limitations
 - 8.2.4. Wildlife Health Surveillance Systems
 - 8.2.5. Prevention and Sanitary Control in Wildlife Species
 - 8.2.6. Climate Change and Wildlife Health Surveillance

- 8.3. Shared Diseases
 - 8.3.1. The Multi-Host Nature of Pathogens
 - 8.3.2. Intra- and Interspecific Host Interactions
 - 8.3.3. The "Wildlife-Domestic Animal-Human" Interface
 - 8.3.4. Concept of Reservoir in Wildlife
 - 8.3.5. Vector-Borne Pathogens
 - 8.4. Ecology of Wildlife Diseases
 - 8.4.1. Ecology of the Pathogen
 - 8.4.2. Pathogen-Host Interactions
 - 8.4.3. Disease Determinants
 - 8.4.4. Environment and Disease
 - 8.4.5. Infection/Disease Patterns
 - 8.5. Diseases of Wild Swine
 - 8.5.1. Viral Diseases
 - 8.5.2. Bacterial diseases
 - 8.5.3. Parasitic Diseases
 - 8.5.4. Fungal Diseases
 - 8.5.5. Metabolic Diseases
 - 8.5.6. Other Morbid Processes
 - 8.5.7. Hunting Exploitation and Management
 - 8.6. Diseases of Wild Ruminants
 - 8.6.1. Viral Diseases
 - 8.6.2. Bacterial diseases
 - 8.6.3. Parasitic Diseases
 - 8.6.4. Fungal Diseases
 - 8.6.5. Metabolic Diseases
 - 8.6.6. Other Morbid Processes
 - 8.6.7. Hunting Exploitation and Management
 - 8.7. Diseases of Wild Carnivores
 - 8.7.1. Viral Diseases
 - 8.7.2. Bacterial diseases
 - 8.7.3. Parasitic Diseases
 - 8.7.4. Fungal Diseases
 - 8.7.5. Other Morbid Processes
 - 8.8. Diseases of Lagomorphs, Micromammals, and Bats
 - 8.8.1. Main Lagomorph Diseases
 - 8.8.2. Infectious and Morbid Processes of Micromammals
 - 8.8.3. Chiropteran Diseases and Infectious Processes
 - 8.8.4. Emerging Pathogens of Small Mammals
 - 8.8.5. Hunting Exploitation and Management
 - 8.9. Reptile and Amphibian Diseases
 - 8.9.1. Status of Reptile and Amphibian Populations
 - 8.9.2. Ecology and Health
 - 8.9.3. Health and Conservation of Reptile and Amphibian Populations
 - 8.9.4. Main Infectious and Morbid Processes of Reptiles and Amphibians
 - 8.10. Avian Diseases
 - 8.10.1. Biodiversity and Avian Health
 - 8.10.2. Viral Diseases
 - 8.10.3. Bacterial diseases
 - 8.10.4. Fungal and Metabolic Diseases
 - 8.10.5. Health and Conservation of Avian Diversity
 - 8.10.6. Hunting Exploitation and Management
 - 8.10.7. Intensive Production
- Module 9. Health of Dogs, Cats and Other Species**
- 9.1. Giardiasis
 - 9.1.1. General Biology
 - 9.1.2. Life Cycle
 - 9.1.3. Epidemiology
 - 9.1.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.1.4.1. Symptoms
 - 9.1.4.2. Pathogenic Mechanisms
 - 9.1.5. Diagnosis
 - 9.1.5.1. Diagnostic Techniques
 - 9.1.5.2. Good Practices
 - 9.1.6. Treatment and Control
 - 9.1.6.1. Treatment
 - 9.1.6.2. Prophylactic Measures. Good Practices

- 9.2. Toxocariasis
 - 9.2.1. General Biology
 - 9.2.2. Life Cycle
 - 9.2.3. Epidemiology
 - 9.2.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.2.4.1. Symptoms
 - 9.2.4.2. Pathogenic Mechanisms
 - 9.2.5. Diagnosis
 - 9.2.5.1. Diagnostic Techniques
 - 9.2.5.2. Good Practices
 - 9.2.6. Treatment and Control
 - 9.2.6.1. Treatment
 - 9.2.6.2. Prophylactic Measures. Good Practices
- 9.3. Taeniasis
 - 9.3.1. General Biology
 - 9.3.2. Life Cycle
 - 9.3.3. Epidemiology
 - 9.3.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.3.4.1. Symptoms
 - 9.3.4.2. Pathogenic Mechanisms
 - 9.3.5. Diagnosis
 - 9.3.5.1. Diagnostic Techniques
 - 9.3.5.2. Good Practices
 - 9.3.6. Treatment and Control
 - 9.3.7. Treatment
 - 9.3.8. Prophylactic Measures. Good Practices
- 9.4. Cryptosporidiosis
 - 9.4.1. General Biology
 - 9.4.2. Life Cycle
 - 9.4.3. Epidemiology
 - 9.4.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.4.4.1. Symptoms
 - 9.4.4.2. Pathogenic Mechanisms
- 9.4.5. Diagnosis
 - 9.4.5.1. Diagnostic Techniques
 - 9.4.5.2. Good Practices
- 9.4.6. Treatment and Control
 - 9.4.6.1. Treatment
 - 9.4.6.2. Prophylactic Measures. Good Practices
- 9.5. Dirofilariasis
 - 9.5.1. General Biology
 - 9.5.2. Life Cycle
 - 9.5.3. Epidemiology
 - 9.5.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.5.4.1. Symptoms
 - 9.5.4.2. Pathogenic Mechanisms
 - 9.5.5. Diagnosis
 - 9.5.5.1. Diagnostic Techniques
 - 9.5.5.2. Good Practices
 - 9.5.6. Treatment and Control
 - 9.5.6.1. Treatment
 - 9.5.6.2. Prophylactic Measures. Good Practices
- 9.6. Angiostrongilosis
 - 9.6.1. General Biology
 - 9.6.2. Life Cycle
 - 9.6.3. Epidemiology
 - 9.6.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.6.4.1. Symptoms
 - 9.6.4.2. Pathogenic Mechanisms
 - 9.6.5. Diagnosis
 - 9.6.5.1. Diagnostic Techniques
 - 9.6.5.2. Good Practices
 - 9.6.7. Treatment and Control
 - 9.6.7.1. Treatment
 - 9.6.7.2. Prophylactic Measures. Good Practices

- 9.7. Leishmaniasis
 - 9.7.1. General Biology
 - 9.7.2. Life Cycle
 - 9.7.3. Epidemiology
 - 9.7.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.7.4.1. Symptoms
 - 9.7.4.2. Pathogenic Mechanisms
 - 9.7.5. Diagnosis
 - 9.7.5.1. Diagnostic Techniques
 - 9.7.5.2. Good Practices
 - 9.7.6. Treatment and Control
 - 9.7.6.1. Treatment
 - 9.7.6.2. Prophylactic Measures Good Practices
- 9.8. Toxoplasmosis
 - 9.8.1. General Biology
 - 9.8.2. Life Cycle
 - 9.8.3. Epidemiology
 - 9.8.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.8.4.1. Origin of Damage
 - 9.8.4.2. Pathogenic Mechanisms
 - 9.8.5. Diagnosis
 - 9.8.5.1. Diagnostic Techniques
 - 9.8.5.2. Good Practices
 - 9.8.6. Treatment and Control
 - 9.8.6.1. Prophylactic Measures
 - 9.8.6.2. Good Practices
- 9.9. Thelaziosis
 - 9.9.1. General Biology
 - 9.9.2. Life Cycle
 - 9.9.3. Epidemiology
 - 9.9.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.9.4.1. Origin of Damage
 - 9.9.4.2. Pathogenic Mechanisms

- 9.9.5. Diagnosis
 - 9.9.5.1. Diagnostic Techniques
 - 9.9.5.2. Good Practices
- 9.9.6. Treatment and Control
 - 9.9.6.1. Prophylactic Measures
 - 9.9.6.2. Good Practices
- 9.10. Scabies
 - 9.10.1. General Biology
 - 9.10.2. Life Cycle
 - 9.10.3. Epidemiology
 - 9.10.4. Symptomatology, Pathogenesis, and Host-Parasite Relationship
 - 9.10.4.1. Origin of Damage
 - 9.10.4.2. Pathogenic Mechanisms
 - 9.10.5. Diagnosis
 - 9.10.5.1. Diagnostic Techniques
 - 9.10.5.2. Good Practices
 - 9.10.6. Treatment and Control
 - 9.10.6.1. Prophylactic Measures
 - 9.10.6.2. Good Practices

Module 10. Ecology and Animal Welfare

- 10.1. Introduction to Ecology
 - 10.1.1. Ecology Definition
 - 10.1.2. Abiotic Factors
 - 10.1.3. Biotic Factors
 - 10.1.4. City
 - 10.1.5. Community
- 10.2. Population Ecology
 - 10.2.1. Reproductive Patterns
 - 10.2.2. Extinction
 - 10.2.3. Biogeography
 - 10.2.4. Interspecific Competition

- 10.3. Environmental Impact
 - 10.3.1. Definition
 - 10.3.2. Causes of Environmental Deterioration
 - 10.3.3. Population Growth
 - 10.3.4. Consumerism
- 10.4. Natural Resources
 - 10.4.1. Renewable and Non-Renewable Resources
 - 10.4.2. Alternative energy sources
 - 10.4.3. Protected Areas
 - 10.4.4. Sustainable Development
- 10.5. General Aspects of Animal Welfare
 - 10.5.1. Concept of Animal Welfare
 - 10.5.1.1. Introduction
 - 10.5.1.2. History
 - 10.5.2. Definitions of Animal Welfare
 - 10.5.2.1. Historical Definitions of Animal Welfare
 - 10.5.3. Impact of the Environment on Animal Welfare
 - 10.5.4. Health Alert Plans
 - 10.5.5. Physiology and Biochemistry
 - 10.5.5.1. Introduction
 - 10.5.6. Physiology
 - 10.5.7. Biochemistry
 - 10.5.8. The Five Animal Needs
 - 10.5.8.1. Suitable Environment
 - 10.5.8.2. Adequate Diet
 - 10.5.8.3. Normal Behavior
 - 10.5.8.4. Adequate Housing
 - 10.5.8.5. Pain, Suffering, Injury and Illness
 - 10.5.9. Stress and Animal Welfare
 - 10.5.9.1. Relationship between Stress and Animal Welfare
 - 10.5.10. Social Aspects of Animal Welfare
 - 10.5.11. Principles of Animal Welfare
 - 10.5.11.1. What are the Basic Principles of Animal Welfare?
 - 10.5.12. Assessment of Animal Welfare
 - 10.5.12.1. Important Aspects to evaluate Animal Welfare
- 10.6. Animal Behavior
 - 10.6.1. Applied Ethology
 - 10.6.1.1. What is Ethology?
 - 10.6.1.2. Application of Ethology
 - 10.6.2. Learning and Social Behavior
 - 10.6.2.1. Types of Behavior
 - 10.6.2.2. Social Behavior
 - 10.6.3. Biology of Animal Suffering
 - 10.6.4. Feeding
 - 10.6.5. Normal and Abnormal Behavior Patterns
 - 10.6.5.1. Normal Behavior
 - 10.6.5.2. Abnormal Behaviors
 - 10.6.6. Interactions Between Groups of Animals
 - 10.6.6.1. Types of interactions
 - 10.6.7. Causes of Stress
 - 10.6.7.1. Types of Interactions
 - 10.6.7.2. Stressors
 - 10.6.7.3. Physiological Responses to Stress
 - 10.6.8. General Adaptation Syndrome
 - 10.6.9. Animal Sense Organs in Relation to Stress and Injury
 - 10.6.9.1. Introduction
 - 10.6.9.2. Sensory Organs
 - 10.6.10. Animal Welfare and Ethology
 - 10.6.10.1. Introduction
 - 10.6.10.2. Relationship of Sciences in Animal Welfare

10.7. One Health

10.7.1. One Welfare, One Health

10.7.1.1. Introduction One Health

10.7.1.2. Economic and Environmental Benefits

10.7.1.3. Health Benefits

10.7.2. International Animal Welfare Standards

10.7.3. World Organization for Animal Health (OIE)

10.7.4. OIE International Standards

10.7.5. Food and Agriculture Organization of the United Nations (FAO)

10.7.6. World Animals Protection (WAP)

10.7.7. Animal Welfare Standards on the Farm

10.7.8. International Consumers

10.7.9. Welfare Quality Project

10.7.9.1. Introduction

10.7.9.2. Types of Valuations

10.7.10. Animal Welfare Labeling

10.8. Animal Welfare Indicators

10.8.1. Types of Indicators

10.8.2. Biomarkers of Stress as Indicators of Animal Welfare

10.8.2.1. Types of Indicators

10.8.3. Welfare Assessment Protocols

10.8.4. Criteria for Animal Welfare Assessment

10.8.5. Animal Welfare Problems and Their Effects on Animal Health and Production

10.8.6. Health

10.8.7. Diseases

10.8.8. Physiology and Biochemistry

10.8.9. Productivity

10.8.10. Stressors

10.8.10.1. Introduction

10.8.10.2. Types of Stressors





- 10.9. Welfare in the Different Species
 - 10.9.1. Animal Welfare in Production
 - 10.9.2. Laboratory Animal Welfare
 - 10.9.2.1. Experimental Animals
 - 10.9.3. Animal Welfare in Dogs
 - 10.9.4. Animal Welfare in Cats
 - 10.9.5. Animal Welfare in Exotic Species
 - 10.9.5.1. Exotic Animals in Zoos
 - 10.9.5.2. Unconventional Animals
 - 10.9.6. Animal Welfare in Pigs
 - 10.9.7. Animal Welfare in Hens
 - 10.9.8. Environmental Enrichment
 - 10.9.8.1. Types of Enrichment
 - 10.9.8.2. Food Enrichment
 - 10.9.8.3. Social Enrichment
 - 10.9.8.4. Sensory Enrichment
 - 10.9.9. Biosecurity
 - 10.9.10. Mutilations
 - 10.9.10.1. Introduction
 - 10.9.10.2. Types of Mutilations

06

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





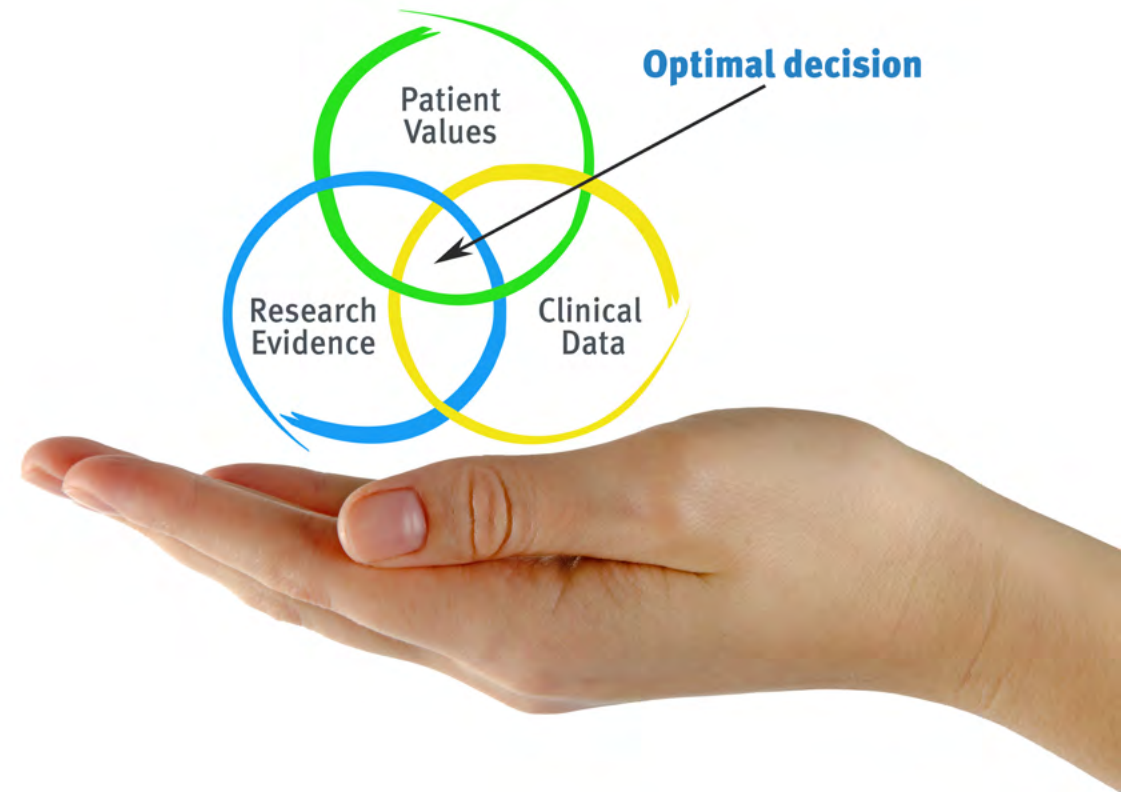
“

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the actual conditions in a veterinarian's professional practice.

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Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”

The effectiveness of the method is justified by four fundamental achievements:

1. Veterinarians who follow this method not only manage to assimilate concepts, but also develop their mental capacity through exercises to evaluate real situations and knowledge application
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. The feeling that the effort invested is effective becomes a very important motivation for veterinarians, which translates into a greater interest in learning and an increase in the time dedicated to working on the course.



Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.



Veterinarians will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology more than 65,000 veterinarians have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. Our teaching method is developed in a highly demanding environment, where the students have a high socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Latest Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current and procedures of veterinary techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

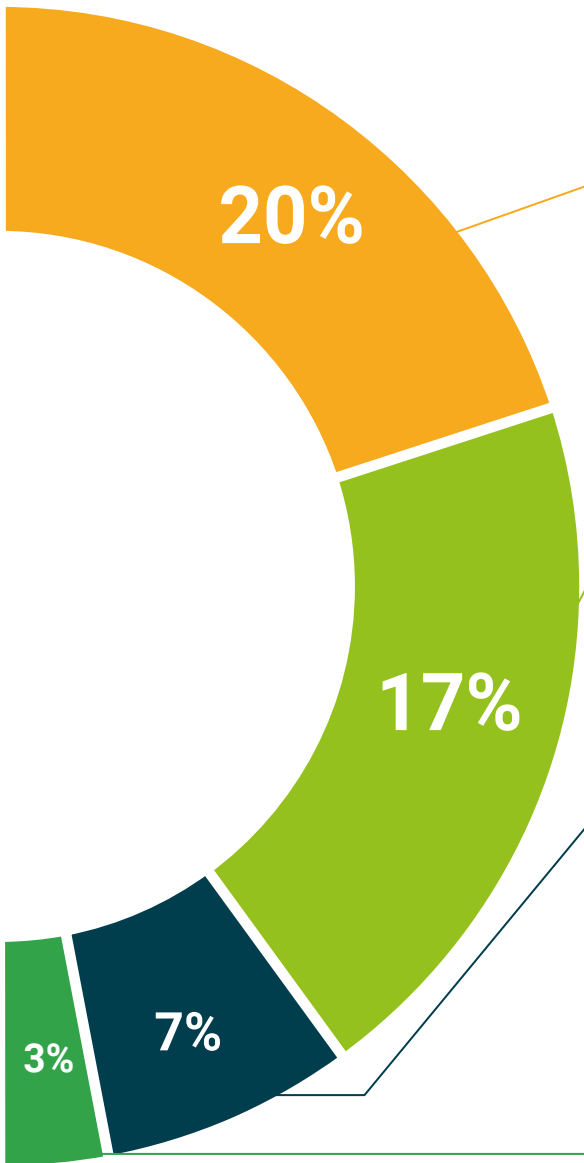
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



07

Certificate

The Professional Master's Degree in Animal Production and Health guarantees you, in addition to the most rigorous and updated training, access to a Professional Master's Degree issued by TECH Technological University.



“

*Successfully complete this program
and receive your university degree
without travel or laborious paperwork”*

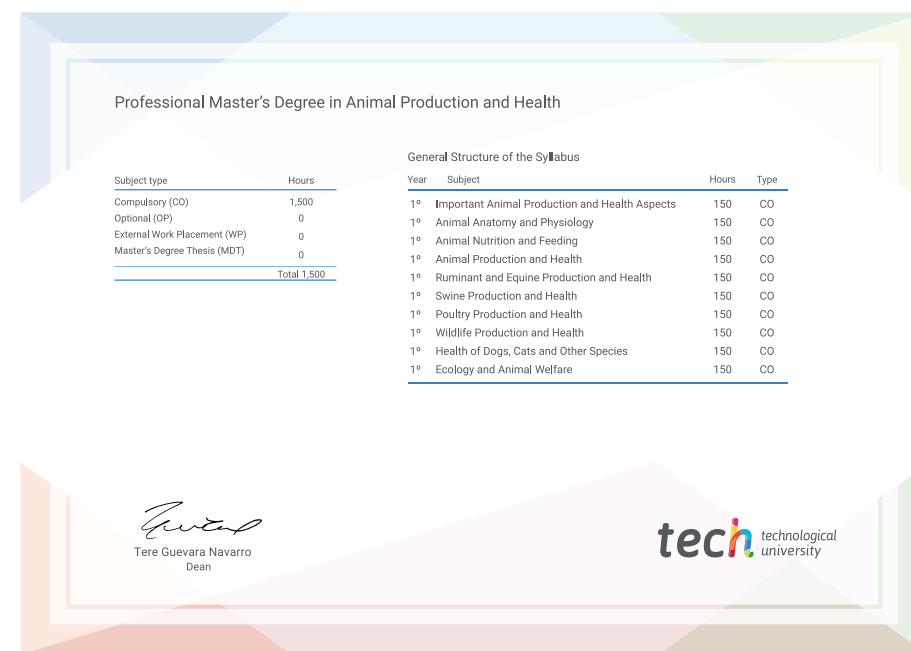
This **Professional Master's Degree in Animal Production and Health** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Professional Master's Degree** issued by **TECH Technological University** via tracked delivery*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Professional Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Professional Master's Degree in Animal Production and Health**

Official N° of hours: **1,500 h.**



*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present quality

online training

development languages

virtual classroom

tech technological
university

Professional Master's
Degree

Animal Production
and Health

Course Modality: Online

Duration: 12 months

Certificate: TECH Technological University

Official N° of hours: 1,500 h.

Professional Master's Degree Animal Production and Health

