Postgraduate Diploma
Ruminant Nutrition and Feeding

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Postgraduate Diploma
Ruminant Nutrition and Feeding

» Course Modality: **Online**

» Duration: **6 months**

» Certificate: **TECH Global University**

» Credits: **18 ECTS**

» Schedule: **at your own pace**

» Exams: **online**

Website: **www.techtitute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-ruminant-nutrition-feeding**

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01
Introduction

This Postgraduate Diploma in Nutrition and Feeding of Ruminants develops the main aspects related to digestive physiology, nutrition and feeding of ruminants and their marked anatomical and physiological differences with respect to the other species studied, which allows them to have, as a main characteristic, the ability to take advantage of resources rich in fiber, such as pasture and forage, which have little nutritional value for non-ruminant species.

It is designed for veterinary professionals to update and improve their technical and practical knowledge in this sector. A complete and effective course that will propel you to a higher level of competence.

Become one of the most demanded professionals of the moment: prepare yourself as an Expert in Nutrition and Feeding of Ruminants".

This **Postgraduate Diploma in Ruminant Nutrition and Feeding** is unique given its level of specialization and the logical learning sequence in which the content is organized.

Its ultimate goal is to specialize and update professionals in the most advanced technical and scientific aspects of animal nutrition and feeding.

Knowledge that enables the entry, linkage and specialization in one of the most important sectors of animal production at present and with more labor demand and need for specialization.

The current world population estimated at 7.6 billion is expected to increase to 8.6 billion by 2030 and animal nutrition is one of the disciplines called upon to help solve the problem of producing sufficient and economical protein to feed this growing demand in an efficient and sustainable manner.

With an innovative format, this specialization allows participants to develop autonomous learning and optimal time management.

Join the elite, with this highly efficient specialization and open new paths to your professional progress".

In short, it is an ambitious, broad, structured and interwoven proposal, which covers everything from the fundamental and relevant principles of nutrition to the manufacture of food. All this with the characteristics of a course of high scientific, teaching and technological level.

These are some of its most notable features:

- Latest technology in online teaching software.
- Highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand.
- Practical cases presented by practising experts.
- State-of-the-art interactive video systems.
- Teaching supported by telepractice.
- Continuous updating and recycling systems.
- Self-regulating learning: full compatibility with other occupations.
- Practical exercises for self-evaluation and learning verification.
- Support groups and educational synergies: questions to the expert, debate and knowledge forums.
- Communication with the teacher and individual reflection work.
- Availability of content from any fixed or portable device with
- internet connection.
- Supplementary documentation databases are permanently available, even after the course.

A course that will enable you to work in the ruminant production sectors, with the solvency of a high-level professional".

Our teaching staff is made up of professionals from different fields related to this specialty. In this way, we ensure that we provide you with the training update we are aiming for. A multidisciplinary team of professionals prepared and experienced in different environments, who will develop the theoretical knowledge in an efficient way, but, above all, will put at the service of this Postgraduate Diploma practical knowledge derived from their own experience: one of the differential qualities of this specialization.

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

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: with the help of an innovative interactive video system, and learning from an expert, you will be able to acquire the knowledge as if you were actually dealing with the scenario you are learning about. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

With a methodological design that relies on proven teaching techniques, this Expert in Ruminant Nutrition and Feeding will take you through different teaching approaches to allow you to learn in a dynamic and effective way.

02
Objectives

Our goal is to prepare highly qualified professionals for work experience. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. This objective is focused on helping medical professionals reach a much higher level of expertise and control. A goal you will easily achieve with a course of high intensity and precision.

If your objective is to redirect your capacity towards new paths of success and development, this is your course: a training that aspires to excellence

General Objectives

- Determine the properties, use and metabolic transformations of nutrients in relation to the nutritional needs of an animal.

- Provide clear and practical tools so that the professional can identify and classify the different foods that are available in the region and have better elements of judgement to make the most appropriate decision in terms of differential costs, etc.diferenciales, etc.

- Propose a series of technical arguments which allow for a better quality of diet and nutrition and therefore, improve the end produce (meat or milk).

- Analyze the different raw material components with both positive and negative effects on Animals. Nutrition and how animals use them for the production of animal protein.

- Identify and understand the different levels of digestibility for each of the various nutritional components according to their origin.

- To analyze the key aspects for the design and creation of diets (food) aimed at achieving the maximum utilization of nutrients by animals intended for animal protein production.

- Provide specialized training on the nutritional requirements for the two main species of birds to be used in animal protein production.

- Develop specialized understanding of the nutritional requirements of the porcine species and the different feeding strategies needed in order to guarantee that they reach the expected welfare and production standards according to their production stage.

- Provide practical, theoretical and specialized knowledge on the physiology of canine and feline digestive systems.

- Analyze the digestive system of ruminants and their particular way of assimilating nutrients

from fiber-rich foods.

* Analyze the main additive groups used in the food production industry, focused on ensuring the quality and performance of different food products.

* Analyze, in a clear way, how the complete animal feed manufacturing process is developed: the phases and processes which feed undergoes to guarantee its nutritional composition, quality and safety.

Specific Objectives

Module 1.

- Develop the different nutrients contained in the raw materials used in animal nutrition
- Develop the different components of each one of the nutrient groups
- Determine the destinations or metabolic pathways of nutrients to be utilized by the animal
- Establish how animals obtain energy from different nutrients and what energy metabolism consists of
- Analyze the different assimilation processes of nutrients that different species of animals have and which are necessary for their well-being and production
- Evaluate the importance of water as a nutrient and the effect that it has on animals

Module 2.

- Develop the concepts of digestibility and how it is determined
- Analyze advances in protein nutrition and the importance of synthetic amino acids in animal nutrition.
- Identify the factors which are involved in the definition of the different nutrient levels
- Establish the critical points in the use of fats, their quality and effect on nutrition
- Develop the basic concepts of organic minerals and their importance
- Justify the concept of intestinal integrity and how to enhance it in production
- Analyze patterns in the use of antibiotics in veterinary nutrition.
- Define the patterns in precision nutrition and the most influential factors in its application

Module 3.

- Analyze the digestive system of ruminants and their particular way of assimilating nutrients

from fiberrich foods.

- Analyze the nutritional metabolism of ruminants, recognising their potential and their limitations

- Determine the nutritional requirements for the maintenance and production of the main ruminants of zootechnical interest

- Examine the main food resources for ruminants' nutrition, their main characteristics, their advantages and limitations

- Evaluate the main feeding strategies for ruminants according to the production context

> *A path to achieve training and professional growth that will propel you towards a greater level of competitiveness in the employment market".*

03
Course Management

For our course to be of the highest quality, we are proud to work with a teaching staff of the highest level, chosen for their proven track record. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.

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An impressive teaching staff, made up of professionals from different areas of expertise, will be your teachers during your training: a unique opportunity not to be missed"

Coordinator

Dr. Cuello Ocampo, Carlos Julio

- Veterinarian with extensive experience in the areas of Health, Production, Nutrition and Feeding in the line of Poultry, Swine and Cattle Farming.
- Master's Degree in Ration Formulation for Productive Species
- Experience in the use and formulation of additives for animal nutrition.
- Experience in farm management and feed mill development and formulation consulting.
- Technical Director in Huvepharma NV Laboratories (Bulgaria)

Professors

Dr. Cuello Ocampo, Carlos Julio
- Veterinarian with extensive experience in the areas of Health, Production, Nutrition and Feeding in the line of Poultry, Swine and Cattle Farming.
- Master's Degree in Ration Formulation for Productive Species
- Experience in the use and formulation of additives for animal nutrition.
- Experience in farm management and feed mill development and formulation consulting.
- Technical Director in Huvepharma NV Laboratories (Bulgaria)

Dr. Fernández Mayer, Anibal Enrique
- PhD in Veterinary Science
- Postdoctorate of Veterinary Science, with a focus on: Animal Nutrition in Institute of Animal Science (IAS)
- Agricultural Engineer, National University of La Plata (1975-1979), Buenos Aires.

Lic. Ordoñez Gómez, Ciro Alberto
- Animal technician
- Master's Degree in Animals. Nutrition.
- University Professor in the area of animal nutrition with emphasis on ruminants.

Dr. Páez Bernal, Luis Ernesto
- PhD in Monogastric Nutrition and Production

- Doctor Scientiae in Zootechnics, Nutrition and Monogastric Production. Federal University of Viçosa (UFV), MG, Brazil. 2008, MSc in Zootechnics, Nutrition and Monogastric Production. Federal University of Viçosa (UFV), MG, Brazil. 2004
- Medical veterinary with a Master's Degree in Monogastric Nutrition and Production
- Lecturer

Dña. Portillo Hoyos Diana Paola
- Professional Graduated from the National University of Colombia.

Rodríguez, Pedro
- Animal technician with a Master's Degree in Veterinary Nutrition..

D. Sarmiento García, Ainhoa
- Phd in Science and Chemical Technology. (09/ 09.2017 / 2019) University of Salamanca,
- University Master's in Innovation of Biomedical Sciences and Health. (10- 10.2015 - 2016) University of León
- Degree in Veterinary Medicine. (09- 10.2015 - 2014) University of León

04
Structure and Content

The contents of this specialization have been developed by the different experts of this course, with a clear purpose: to ensure that our students acquire each and every one of the necessary skills to become true experts in this field.

A complete and well-structured program that will take you to the highest standards of quality and success.

A comprehensive teaching program, structured in well-developed teaching units, oriented towards learning that is compatible with your personal and professional life"

Module 1. Nutrients and Metabolism.

1.1. Carbohydrates
    1.1.1. Carbohydrates in Animal Food
    1.1.2. Classification of Carbohydrates
    1.1.3. Digestion Process
    1.1.4. Fiber and Digestion of Fiber
    1.1.5. Factors which Affect the Utilistion of Fiber
    1.1.6. Physical Function of Fibre

1.2. Metabolism of Carbohydrates
    1.2.1. Metabolic Fate of Carbohydrates
    1.2.2. Glycolysis, Glycogenolysis, Glycogenesis and Gluconeogenesis
    1.2.3. Pentose Phosphate Cycle
    1.2.4. Krebs Cycle

1.3. Lipids
    1.3.1. Classification of Lipids
    1.3.2. Functions of Lipids
    1.3.3. Fatty Acids.
    1.3.4. Digestion and Absorption of Fats
    1.3.5. Factors which Affect Lipid Digestion

1.4. Lipid Metabolism
    1.4.1. Metabolic Fate of Lipids
    1.4.2. Fat Metabolism Energy
    1.4.3. Oxidative Rancidity.
    1.4.4. Essential Fatty Acids
    1.4.5. Lipid Metabolism Problems

1.5. Energetic Metabolism.
    1.5.1. Measurement of Heat Reaction
    1.5.2. Biological Partitioning of Energy
    1.5.3. Nutrient Caloric Increase
    1.5.4. Energy Balance
    1.5.5. Environmental Factors that Influence Energy Requirements
    1.5.6. Characteristics of Energy Deficiencies and Excesses

1.6. Proteins
    1.6.1. Protein Classification
    1.6.2. Functions of the Different Proteins
    1.6.3. Digestion and Absorption of Proteins
    1.6.4. Factors which Affect Protein Digestion
    1.6.5. Nutritional Classification of Amino Acids for Poultry and Swine

1.7. Protein Metabolism in Poultry and Swine
    1.7.1. Metabolic Fate of Proteins
    1.7.2. Gluconeogenesis and Degradation of Amino Acids
    1.7.3. Excretion of Nitrogen and Synthesis of Uric Acid
    1.7.4. Imbalance of Amino Acids and Energetic Cost of Protein Metabolism
    1.7.5. Interaction Between Amino Acids

1.8. Vitamins and Minerals
    1.8.1. Vitamin Classification
    1.8.2. Vitamin Requirements for Poultry and Swine
    1.8.3. Vitamin Deficiencies
    1.8.4. Macro and Micro minerals
    1.8.5. Interaction Between Minerals
    1.8.6. Organic Chelates.

1.9. Mineral and Vitamin Metabolism
    1.9.1. Vitamin Interdependence.
    1.9.2. Deficiencies and Toxicity of Vitamins
    1.9.3. Choline.
    1.9.4. Metabolism of Calcium and Phosphorus
    1.9.5. Electrolyte Balance.

1.10. Water. The Forgotten Nutrient
    1.10.1. Principal Functions of Water
    1.10.2. Distribution of Water in an Organism
    1.10.3. Sources of Water
    1.10.4. Factors Affecting Water Requirements
    1.10.5. Water Requirements
    1.10.6. Requirements for the Quality of Drinking Water

Module 2. Digestibility, Ideal Protein and Advances in Animal Nutrition

This training will allow you to advance in your career comfortably"

Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: *Re-learning*.
This teaching system is used 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 Re-learning, 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

In a given clinical situation, what would you do? 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 abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you can experience a way of learning that is shaking the foundations of traditional universities around the world.
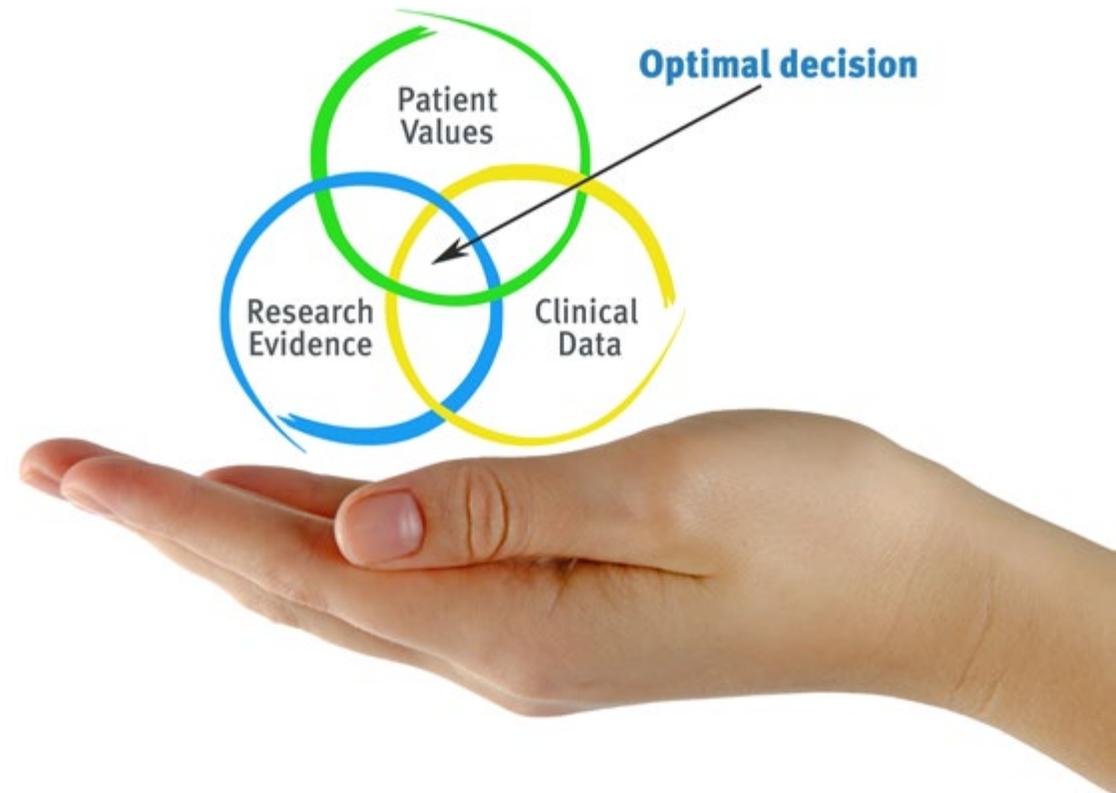
According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching potential or because of its uniqueness or rarity. It is essential that the case be based on current professional life, trying to recreate the real conditions in the Veterinarian's Professional Practice.

> *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 achieve the assimilation of concepts, but also a development of their mental capacity through exercises to evaluate real situations and the application of knowledge.

2. The learning process has a clear focus on 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.

Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our 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, which represent a real revolution with respect to simply studying and analyzing 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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

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

Re-learning 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 to success.

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

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

In this program you will have access to the best educational material, prepared with you in mind:
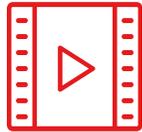
Study Material

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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.

Latest Techniques and Procedures on Video

We bring you closer to the latest Techniques, to the latest Educational Advances, to the forefront of current Veterinary Techniques and Procedures. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.

Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".

Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.

20%

15%

15%

3%

20%

17%

7%

3%
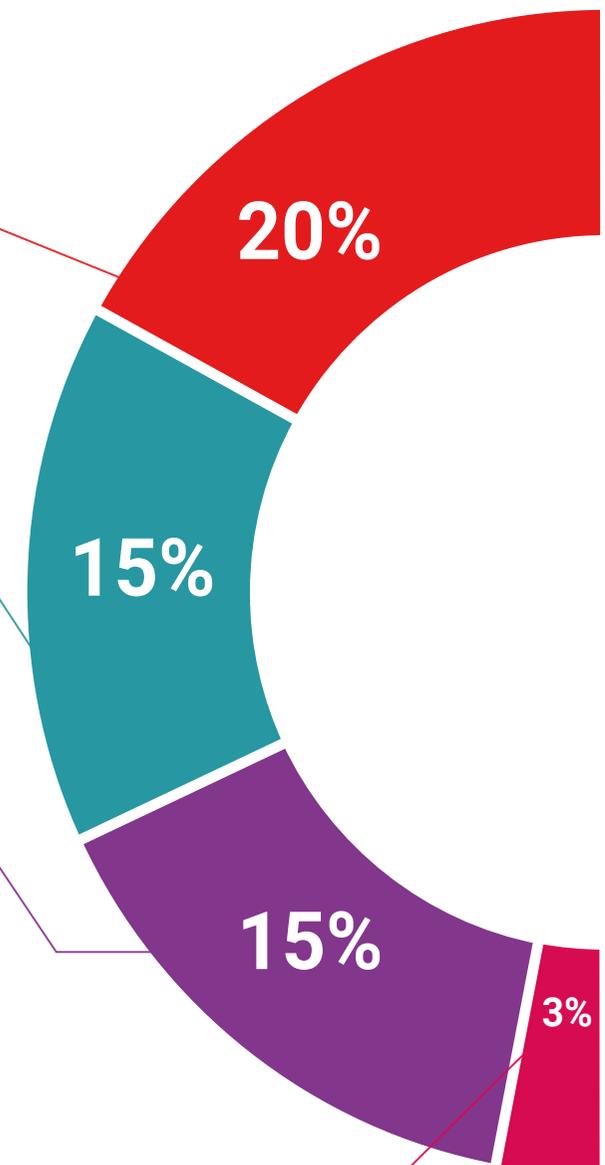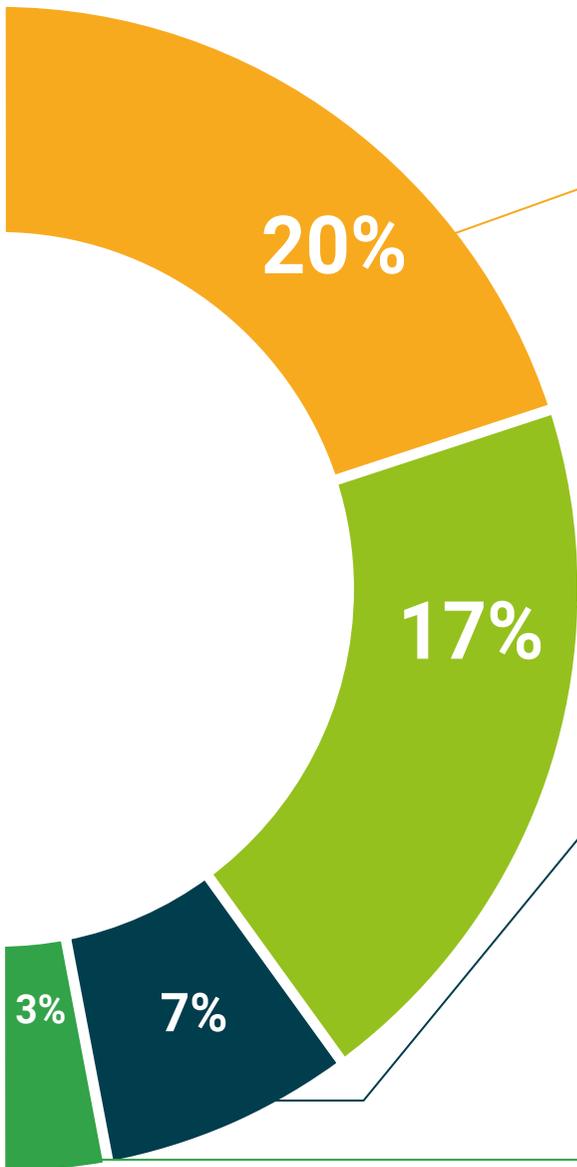
Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

Testing & Re-testing

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your 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 our future difficult decisions.

Quick Action Guides

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.

06
Certificate

Through a different and stimulating learning experience, you will be able to acquire the necessary skills to take a big step in your training. An opportunity to progress, with the support and monitoring of a modern and specialized university, which will propel you to another professional level.

" *Include in your specialization a Postgraduate Diploma in Ruminant Nutrition and Feeding: a highly qualified added value for any professional in this area".*

This program will allow you to obtain your **Postgraduate Diploma in Ruminant Feeding and Nutrition** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Ruminant Feeding and Nutrition**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**

tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Ruminant Feeding and Nutrition

This is a program of 450 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.   Unique TECH Code: AFWORD23S   techtitute.com/certificates

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

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Postgraduate Diploma
Ruminant Nutrition and Feeding

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» Exams: **online**

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