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Degree: Veterinary Medicine and Animal Husbandry

Quarter: First quarter

Subject: English I

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Topic: The importance of Veterinary Medicine in the different professional fields

Date: September 16, 2024

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Introduction

This document will look at the importance of veterinary medicine in different professional fields.

It deals with the various fields of action in which a veterinarian can work.

The fields of action of veterinary medicine are the areas in which the profession can be carried out as an employment, as an independent, or by developing a business.

What does veterinary medicine and animal husbandry consist of?

What is veterinary medicine?

Veterinary medicine is one of the branches of medicine focused on the study, diagnosis and prevention of diseases and pathologies of all kinds of animals, wild, domestic, in captivity or exotic.

Animal husbandry focuses on the management of agricultural and livestock resources, as well as on animal production, focusing mainly on improving the quality and efficiency of food production of animal origin.

The Veterinary Medicine and Animal Husbandry degree has specific fields of action in veterinary care for pets in hospitals, clinics and zoos, consulting on investment projects in livestock issues, government management at the three levels of government, research and teaching within the public and private sectors.

Development

1. Agriculture



In this area, veterinary zootechnicians are of great importance, since animal production is closely related to the health aspect when it comes to producing food that is safe for humans. These activities include monitoring vaccinations, controlling outbreaks of epidemics when a disease breaks out in these populations, prevention and treatment of diseases, correct design of facilities, distribution of animals at different stages of the production process, nutrition and reproduction.

This area includes all businesses related to animal production:

1.1 Public or private associations: As a promoter or supervisor of livestock industries: livestock (bovine, ovine, caprine), dairy, meat, poultry, aquaculture, rabbit, pork.

1.2 Companies directed to the agricultural sector: Performing management positions or giving advice as an independent.

1.3 Livestock / Livestock production: Pork, poultry, fish, etc.

As an advisor, coordinator, supervisor, manager, among others.



1.4 Universities: Teaching in the agricultural área.

2. Clinic: Working in a “Clinic” refers to all activities related to medicine: internal medicine, diagnosis and prevention of diseases, treatments, etc.



These tasks can be performed in various environments as we will see below:

2.1 Airports and seaports: There are situations where some animals travel from one country to another for commercial purposes, “on the hoof” (live animals) or “in the carcass (meat and by-products). The presence of a regulatory veterinarian is important to guarantee the optimal conditions for the well-being of the animals during the trip according to the requirements of each species. It is also necessary to supervise compliance with the sanitary requirements legally established for each country and thus exercise epidemiological controls that guarantee the safety of food for human consumption.

2.2 Shelters: There are public and private shelters, which require veterinary doctors on staff, both for small and large species; in order to guarantee animal welfare, in prevention and control of pathologies.

2.3 In the field: You can work in the field as an independent or as part of an institution (public or private). Working in the field refers to practicing medicine that is applied in clinics, not necessarily within a hospital facility. It involves performing medical work on farms, corrals, zootechnical productions, etc. Many times it involves work outdoors and with limited resources where resourcefulness plays a crucial role for the veterinarian in charge when he does not have the precise implements for each case in his backpack veterinary "kit."

Working in the field is common for specialists in:

- Large species medicine (equine and/or bovine): Independent veterinarians or representatives of a company or laboratory, who are called by the different owners to remote farms, where they arrive with their equipment, in their means of transport "at home."
- Veterinary pathology: When performing necropsies that allow determining diagnoses of pathologies that have not been clearly identified.
- Veterinary medicine and zootechnics: In productions or zootechnical farms such as poultry, pigs, flocks, etc. Where animal health is crucial (preventing the spread of pathologies in animal populations).
- Veterinary microbiology: In obtaining samples for laboratory analysis and research.
- Veterinary parasitology: In obtaining samples to determine when pathologies of parasitic origin.

- Bovine and/or equine reproduction: In the implementation of hormonal protocols that help animals establish their normal reproductive cycles and thus improve productive performance in livestock companies.

- Animal nutrition: Establishing the ideal diets according to the requirements of each species at different physiological stages.

- Surgeon: Although some emergency surgeries can be performed "in the field", the ideal is to refer as many surgeries as possible to an operating room, to guarantee aseptic procedures.

2.4 Carabineros (Army/Police): In this type of institution, a veterinarian is required to be in charge of the dogs and horses that are used for the work required there.



In the case of working dogs, for situations where they require medical supervision or in more critical cases; in the management of dogs injured by work with anti-explosives, bullet wounds, among others.

The work with equines is usually summarized in the management and prevention of musculoskeletal problems; in addition to ensuring a balanced diet that prevents the appearance of colic or laminitis.

It is very rarely necessary to help injured animals that come from war zones, since it is not very common to use animals in "battlefields"; however, in special situations, it is the responsibility of the veterinarian to contribute to the treatment of injured animals, generally at a pre-established meeting point where they are taken, in case they are far from the facilities of this institution.

2.5 Equestrian centers/Racetracks: They require veterinarians to supervise activities related to the preparation, training and physical rehabilitation of recreational horses. Therefore, it is closely related to the areas of physiotherapy, orthopedics, among others. It is also their duty to ensure the prevention and/or treatment of any other type of pathology that may occur there.



2.6 Veterinary clinics: In a veterinary clinic, one can practice in various ways, depending on whether or not the professional has a postgraduate degree. If they only have an undergraduate degree, they can practice as a general practitioner; doing shifts with defined hours (daytime and/or nighttime) that involve both scheduled appointments and emergencies. And if they have a postgraduate degree that certifies them as a specialist in a specific subject, they can also practice as a general practitioner (in some cases), or as established contracts where they are only called for cases that concern the subject. Example: A veterinary

ophthalmologist is called in for a case of severe ocular pathology. There are also clinics specializing in specific issues that require the continuous presence of this type of professional.

On the other hand, there are veterinary clinics specialized for small species, others equipped for large species (equines and/or bovines) and others that extend their specialized services to wild fauna.

2.7 Dolphinariums and/or aquatic entertainment centers, or wildlife centers in natural ecosystems: The presence of a veterinarian in these institutions is of crucial importance, to prevent and control diseases; in addition to contributing to the enrichment of habitats according to the physiology and physiognomy of each species, to contribute to animal welfare.



2.8 Livestock companies

2.9 Forensic: A forensic veterinarian inspects situations that determine whether or not there was animal abuse, looking for evidence in post-mortem cases of legal implication. For this, it is necessary to have very solid knowledge in internal medicine, which allows to assertively differentiate the post-mortem findings between specific pathologies of biological origin and cases of animal

abuse. Likewise, he or she must know about necropsy techniques and sending samples.



This field of action has been gaining strength as government and/or private institutions become increasingly concerned about the issue of animal welfare.

It is one of the most emotionally difficult fields to handle, because it involves constant contact with acts of human cruelty.

2.10 Racecourses

2.11 Zoos and wildlife rehabilitation centres: To work in zoos and wildlife rehabilitation centres, veterinarians must have a greater knowledge of wildlife medicine, a highly specialised area that involves mastery of the anatomy, physiology and pharmacology of species that function completely differently from each other; in addition to having knowledge about the animal behaviour in the wild of each species for their correct management, and to promote the

"enrichment of habitats" that contribute to the animal welfare of these exotic species in confinement.



3. Public or private companies: Here are included some of the fields of action previously mentioned, such as: Veterinary clinics, equestrian centers and racetracks, etc.

3.1 Consulting for livestock companies: Several institutions offer this type of service (consulting) in order to produce sales of their products or other services, at the same time.

3.2 Associations of livestock breeds: Which work for the dissemination of the benefits of their breeds: Some examples are: asocebú, asobrangús, etc. They require veterinarians, preferably zootechnician veterinarians, who contribute to the commercial dissemination of their interests.

3.3 Biotechnology companies for reproduction: Private companies that offer services that improve reproduction in cattle and horse livestock, are highly sought after on livestock farms in order to improve reproduction in herds that allow improving the profitability of these companies.



3.4 Concentrate manufacturing companies: They require zootechnician veterinarians who apply their knowledge of animal nutrition to produce concentrates for pets or large species, according to the requirements of each species and physiological stage.

4. Laboratories:

- Molecular biology and/or genetics laboratory.



- Biotechnology laboratories: As reproductive biotechnologies.

- Microbiology laboratory: To collect samples from animals with infectious processes and determine the microbiological agents causing the pathologies and their respective treatments.

- Parasitology laboratory: Where samples obtained "in the field" are analyzed to determine diagnoses and conduct research.

- Pathology laboratory: Where macroscopic samples obtained from necropsies are analyzed in order to determine the diagnosis of doubtful pathologies.

- Clinical pathology laboratory: Where laboratory samples previously obtained from the animal are processed to help obtain an accurate diagnosis.

- Vivariums: Where live animals are available to perform biological tests. They are closely related to research.

- Antiphidic serum production laboratories: Where snakes and other poisonous animals such as reptiles, arachnids, among others, are available; in order to extract serums that serve as an antidote to poisonous bites or stings, requested and used in human medicine.

- Research laboratories in various subjects: In the production of vaccines, drugs for human and animal use. For this type of work, it is essential that the veterinarian has postgraduate studies in molecular biology and/or genetics.

5. MARKETING and sales: Although marketing and sales apply to everything, there are more specialized areas in which the primary objective is the marketing of products in the veterinary industry. This is one of the most profitable fields of action.

5.1 Distributors of products for the field: In the sale of concentrates, medicines, vaccines in strategic points that facilitate access to other veterinarians who practice in the field or in the city and who require their use. Also for owners of clinics and livestock companies.

5.2 Pet product companies: Concentrates on recreational products for pets, which can be promoted by veterinarians through single commissions, salaries with commissions or by being owners.

5.3 Drug laboratories: Promoting the marketing and distribution of medicines, with the help of knowledge in pharmacology and nutrition to provide advice on farms and veterinary clinics, and thus promote the sales of the companies for which they work.

Here ethics must be very present in order not to contribute to the excessive consumption of unnecessary products and thus avoid the development of resistance to medicines that act against parasites, bacteria and viruses.

5.4 Online businesses: Digital businesses can be related to many areas, to support physical businesses in the sale of veterinary products and/or services. I include it here because the digital world is a global trend. Those who do not take their services or physical products to the digital world will also always be more limited in terms of the number of people they can reach. The creation of these businesses with an online component depends a lot on creativity and the needs identified in the environment.



6. Public Health: This is the field of action where veterinarians may have the greatest relevance in their contribution to human health worldwide. Organizations that care for health around the world require veterinarians to

rigorously inspect control points where there are possible risks of dissemination of zoonotic diseases (transmission of diseases from animals to humans) and anthroozoonotic diseases (transmission of diseases from humans to animals), in order to avoid the occurrence of epidemics or pandemics in humans. These possible risk factors include means of transmission such as the consumption of contaminated food (meat, milk), through airways or by direct contact with mucous membranes or biological secretions of sick animals.

To do this, it is necessary to have knowledge about:

- The biological cycles of parasites that are shared between species (in which different animal intermediaries are involved), in order to interfere with the cycles (naturally or artificially).

- Pathologies of bacterial or infectious causes (Zoonotic and/or anthroozoonotic).

- Pathologies of viral causes (Zoonotic and/or anthroozoonotic).

- Preventive veterinary medicine: To prevent their dissemination based on knowledge of the sources and means of transmission.

Within this field of action, necropsies play a very important role, helping to determine the causes of death of an animal prior to its death or slaughter.

6.1 Government entities: In matters of preventive medicine of populations; to carry out actions that lead to the prevention of high-risk diseases for animals and humans. Also in matters of disease epidemiology.

6.2 Slaughterhouses: In the so-called "slaughterhouses", veterinarians are responsible for ensuring the safety of food of animal origin by supervising that sick animals do not enter for human consumption.



However, this monitoring begins very early on the farms, where veterinary zootechnicians work to ensure that food (of animal origin) is monitored (traceable) throughout the entire process: from the type of food that the animals receive, health and management on the farms, to their transportation to slaughterhouses, among others; to guarantee the quality of the product and its safety (that it does not represent a risk to human health).

6.3 Livestock auctions: A veterinary doctor is required to regulate the processes of health and marketing of livestock.

7. Universities:

7.1 Teaching in faculties of human medicine, veterinary medicine and/or technical-professional medicine: Any area of veterinary specialty

is very useful for university teaching in veterinary medicine, however, in faculties of human medicine, a veterinary teacher is also required who knows the relationships between humans and animals that favor the spread of diseases, their prevention, treatment and control; for the area of public health.



7.2 Research: Where the best universities require having master's or doctoral degrees so that teachers can also contribute to research, to give greater prestige and positioning to the university for which they work. The area in which research is carried out will be closely related to the specialty (postgraduate) of the teaching veterinarian.

Definitions/concepts:

Definition of Agricultural: Related to agriculture and livestock.

Definition of Pig Farming: Pig farming is the activity that is responsible for the breeding, feeding and marketing of pigs.

What does poultry farming mean? It refers to the breeding and production of poultry.

What is fish farming? Fish farming is the farming of fish, a term that encompasses a wide variety of very different crops, generally named according to species or family.

What do the Carabineros do? Their mission is to provide security to the community throughout the national territory through primarily preventive actions, supported by a permanent approach to the community.

What does equestrian center mean? An equestrian center is a facility specialized in the education, training and care of horses.

What is animal reproductive biotechnology? Reproductive biotechnology is a set of techniques ranging from artificial insemination to cloning, all aimed at increasing the reproductive efficiency of animals.

What is a slaughterhouse? A slaughterhouse is a facility where animals are slaughtered.

Conclusion

Veterinary medicine has a wide range of jobs because professionals in this field can work in various areas.

They carry out activities such as the production of pigs, birds, fish, etc.

They can work in clinics, shelters, in the countryside, in zoos, wildlife rehabilitation centers, etc.

Veterinary medicine is important because it protects the health of animals and people and contributes to guaranteeing public health by preventing diseases from their source, which affect the world's population.

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