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CONTENTS

WHAT ANIMAL WELFARE MEANS TO DOG OWNERS - AN APPROACH TO INCREASING THE WELFARE QUALITY

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Abstract

The aimed of our study was to find out how many aspects dog owners know about their animal welfare, starting from the fact that they are part of their lives. Nowadays, there are many people who cannot imagine their life without a pet by their side. Providing company is the most important reason for owning a pet. The study involved dog owners (n: 550), present in veterinary practices, who received a questionnaire with 24 questions covering the five important needs in the lives of dogs. The answers given represented the owners' opinion on the issues raised. The answers showed us that the needs of animals are not fully covered because they do not know much about them. For example, they did not consider the comfort of the place for the animal to be the most important need, but they provided it in a proportion of 50%, as well as fear and stress. Although they answered that the behaviour of the dogs was covered in a percentage of 69%, many of the owners did not know what happens to the dogs when they are not at home.

Owners' involvement in ensuring the welfare of their animals is dependent on their level of education and information regarding the animals' lifestyle. Given that most owners believe that the health of their animals is the most important necessity, veterinarians can be a useful tool in educating them on how to ensure the welfare of their dogs.

Keywords: *animal welfare, dog owner knowledge, veterinarian*

Introduction

People own animals as life companions, which implies assuming ownership rights over them, but also a legal responsibility to ensure, among other things, their welfare. This aspect is particularly important taking into acount that Romania is the third country in the European Union with a percentage of 45% of households owning at least one dog. For people more or less involved in animal husbandry, animal welfare is considered a "new science" and its development in the field of companion animals is even more recent, but has received increasing attention from many sources in

recent years [1,2,6,17]. People are complex, they can change over time, with experience and the context in which society, culture, etc. operates. However, dog owners should know that their animals have certain needs, which they can understand and be able to provide, thus raising their quality of life. The welfare of an animal is ensured by five fundamental needs (the need to be free from hunger and thirst, discomfort, disease, fear and suffering and the need to be able to express normal behaviour). The poor health of the animal always affects its welfare, just as compromised welfare affects its health, but at the same time the health of the animal alone cannot ensure its adequate welfare [4,5,15,18].

Material and method

The study was conducted over one year and involved dog owners (n: 550). They were present in urban veterinary clinics, in check-up with their animals for the annual visit, for the application of various treatments or for surgical interventions. There was a questionnaire in the waiting room, to be filled out, with 24 questions regarding their care for the animals, and which covered the five important needs in the life of dogs. All the asked owners wished to take part in the study, 479 of them completed the questionnaire in the clinics, and 71 at home due to the lack of time. Of these, 59 owners did not bring them back, so we did not take them into account. Some of the answers represented choices chosen according to their opinion, and others were simple observations/comments on the subject of the question. The answers helped us to know how much dog owners know about the welfare of their animals.

The questionnaire was designed in order to obtain anonymous responses, and included six parts that were used in the study, as independent data. The first part was intended for information about the owners and their animals, the other questions aimed at the way in which the five needs (the need for an adequate environment; the need for an adequate diet; the need to be able to demonstrate normal behaviours; the need to be protected from pain, suffering, injury and disease) were ensured by them. In order to obtain data that meets the first two needs (access to food and water, and an adequate growing environment) regardless of whether the animals live in the house with their owners or outside, we developed questions to see if they have food and water, have a safe and comfortable shelter, are protected from the unfavorable action of environmental factors or other threats (if they live outside). Afterwards, in order to find out the involvement of the owners in ensuring the need of the animal to be able to manifest its normal behaviour, we asked how they chose their pet and what interactions they have with it. The behaviour of dogs can be individual and depends on age, breed and past experiences. In their lives, they

experience a series of emotions: joy, fear and anger. The way they behave can help the owner understand how the animals feel, if they are physically and emotionally healthy. In the context of ensuring this need, we also asked the owners about the time they spend with their animals, a multiple-choice question. In pets, fear and stress are aspects that must be taken into account by the owners. In this regard, we asked questions about the behaviour of the animals at the veterinarian, because they may be afraid of him or of the means of transport they use to get to the veterinary clinics and which may also be used in other unpleasant situations for the animal (the beauty salon).

The obtained data were statistically processed by the Microsoft Office Excel 2007 (Microsoft Inc, USA), to be able to draw conclusions.

Results and discussion

Following the statistical processing of the questionnaires, it resulted that of those interviewed, 88% were pet owners and 12% were pet handlers. Most of the owners surveyed were between 30 and 45 years old (57.8%), 18.2% between 45 and 60 years old, 12.3% between 18 and 30 years old and 11.7% between 60 and 70 years old. Of the animals studied, 67% were males, 33% were females, and 21% of dogs were sterilized. Pedigree dogs accounted for 47% and non-pedigree dogs accounted for 53%.

The age of the animals followed in the study was (figure 1): 7% up to one year, 24% between one and five years, 49% between six and nine years and 20% between 10 and 17 years. Of all the dogs, 78% were purchased/received at an age of less than six months as puppies, the rest between one and four years.

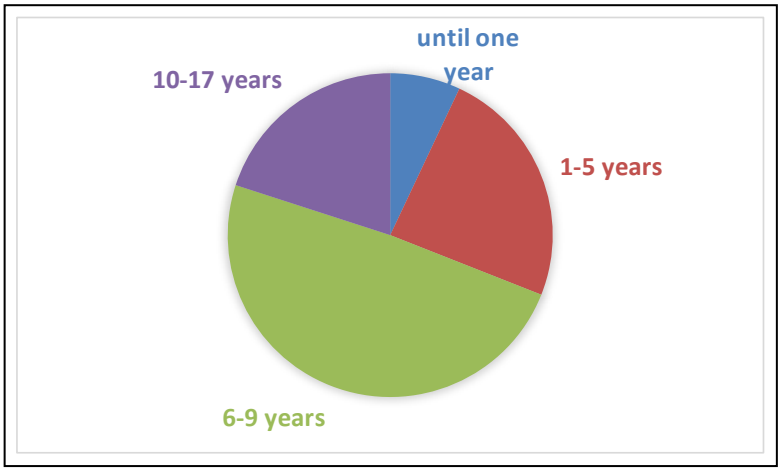

Figure 1. Age of dogs (%) taken into the study

The results showed (figure 2), that the desire to acquire an animal as a pet was expressed by 78% of respondents, 9% for their children, and 13% of owners for other reasons (protection, therapy, etc.). These reasons are grouped into categories for which people wish pets. The most common reason for pet owners is to bond with their pet, as humans do, considering it a friend or family member.

Other people have pets for utility that serves a function, such as protection, breeding, or hunting. Others have pets to be displayed or shown to others, being perceived as property to be bought and/or sold. But some people have pets as status symbols, or as ornaments (ornamental fish, caged birds with colourful feathers, etc.).

These categories are comprehensive and simplify a complex series of human-animal relationship.

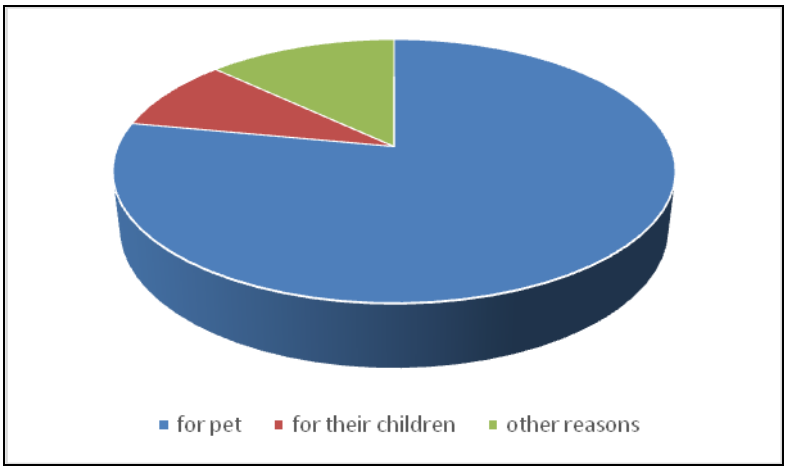

Figure 2. Owners' desire to have a pet (%)

However, recognizing the different attitudes that underlie owners' major motivations for caring, managing, and interacting with their animals can help veterinarians understand the different reactions encountered when attempting to address the behaviour and a pet welfare [12,13,14].

Regarding the comfort of the environment in which dogs live, the results showed that 39.2% of them sleep in the owner's or children's bed, 34.2% sleep in the arranged place (in their basket), 26% sleep in other places in the house (directly on the floor, in an armchair, on the sofa, etc.) and 0.6% outside the house. From the responses obtained, it can be deduced that ensuring the comfort of the resting place is well understood and ensured at the same time by the owners. Even animal protection is assured for many owners, after they have experienced unwanted episodes with their animals

(eating plants, going out on the balcony, eating toilet paper, etc.). The responses indicated that these pets need a safe and comfortable place to rest, located in a dry area, without drafts. Factors related to the home environment are generally considered to be less measurable than those in the veterinary practice environment, where veterinarians are a reliable source of knowledge for owners regarding animal care and should provide general advice on the subject, which is very important for the well-being of the animal [5,16]. For those who live outside the home, they need protection from inclement weather or other threats. Another aspect is that these animals are naturally curious and a dog both indoors and outdoors can be in danger if left to explore the environment unsupervised.

Regarding the choice of food offered to dogs (figure 3), the owners' responses were 57.7%, after consulting with the veterinarian regarding the type of food and how it was offered, 15.6% by the owners' salary, 13.2% on the recommendation of friends, and other 13.5% (natural ingredients, tv commercials, dog's pleasure, etc.)

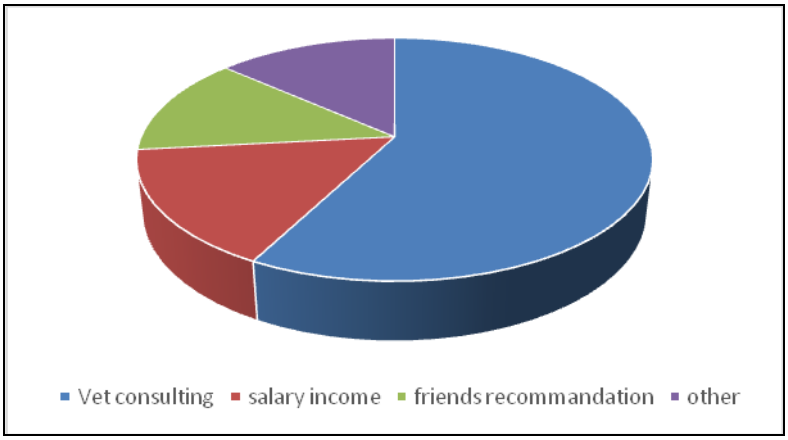

Figure 3. Pet owners' choice of food (%)

Other studies show that the nutritional needs of dogs are individual and depend on size, age, sex, type of activity, type of food they eat, health status, whether they have been sterilized, aspects that should be known by pet owners. Most dogs need at least one meal per day, but it is recommended to be divided into two amounts provided at different times. How much an adult dog should eat depends on the type of food, body weight (determined based on age, sex, breed and activity level) and the degree of activity [3,8,11].

Pet care guides help owners learn how to provide clean, fresh water for their pets, and that the diet provided should be balanced, appropriate to their individual needs, to maintain a stable weight based on age, activity level, sex, breed, and health status. Any change in the amount of food/water your dog eats/drinks may be a sign of poor health. If there is a change in food or water consumption habits/behaviour, consult your veterinarian immediately [19, 20].

The health of animals is the most important need for dog owners, with 67% of them visiting the same veterinarian from the first life weeks of their animals. Taking into account the owners surveyed, none of them had health insurance for their pets. In general, visits to the veterinarian, were not appreciated by 50% of dogs, and 33% of them showed fear, tremors, salivation, etc.

Results from other studies showed that the most common welfare issues observed were obesity, chronic pain/reduced mobility, and breed-related conditions. The most important issues for each affected dog were lack of treatment for suffering, active abuse or cruelty, and malnutrition. Breed-related conditions, obesity, and behaviour problems were the issues for which there was the greatest agreement that veterinarians should do more, both in their area and as a profession. Routine veterinary care is recognized as an integral part of pet health insurance, with a positive impact on animal welfare by preventing and treating injuries and diseases, but can also have negative effects on their welfare when needs are in conflict. In the veterinary practice, the direct experience of dogs can register many negative aspects such as contact with a new, unknown, unfavourable environment for them, then interacting in unusual ways with other and unknown animals, with new people, and being subjected to various procedures that are painful. There are studies that show how these experiences could even lead to the development of a conditioned behaviour of the animal, which can avoid responding to the clinical environment [5,8,10]. Research results show that 70% of healthy dogs visiting the veterinarian for a routine exam were reluctant to enter the veterinary clinic of those who did enter, some were reserved, fearful, or agitated during the routine clinical exam. Puppies between 8 and 16 weeks of age showed similar signs of stress, licking their lips, yawning while being examined on the table, and panting during handling and restraint on the floor. [8,10], The stress associated with visiting the veterinary practice for both the animal and the owner is one of the factors that seem to contribute to their decrease, agreeing that simply the idea of visiting the veterinarian is stressful [4,7,14,16].

Dogs are social, they need the company of their owner or other dogs. Many do not like to be left alone and can suffer if they do not have company

or activities for long periods of time. In the context of ensuring this need, we asked owners about the time they spend with their animals, a multiple-choice question. The owner-animal relationship resulting from the owner's ensuring the manifestations of natural behaviours and the interaction with the veterinarian, the statistic (figure 4) of the results showed that this is 69% positive, 18% neutral and 13% negative.

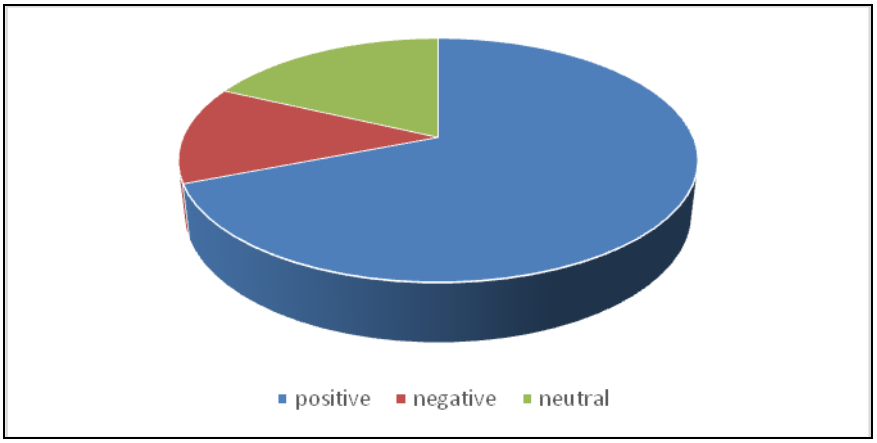

Figure 4. Share (%) of the owner-animal relationship

Although owners believe that their relationship with their dog is a positive one, many of them do not know what their dog does when they are not home.

This relationship is important for the welfare pet because by spending time with friendly people and other dogs, there is no risk of becoming lonely or bored. In order to express their innate behaviours, at home and beyond, they must be given sufficient additional resources (toys, blankets, food and water bowls, places where they feel safe), and enough space. Dogs should be encouraged to be friendly with other dogs and interact with friendly dogs regularly in designated areas (usually parks). If your dog is fearful or aggressive toward other dogs or people, avoid situations that may lead to this behaviour and seek advice from a veterinarian or a qualified person (trainer). Results of behavioural studies, indicate that a very important time to encourage socialization of dogs is between 3-13 weeks of age, so that they are not afraid of daily activities in the house, yard, neighbourhood, as growing up. If not taught to socialize properly, they can become aggressive in some situations as adults due to the fact that they are afraid. [4,6,7]

Behavioural problems of the dogs are often misunderstood by owners or can be misleading. Understanding the most common dog behaviour problems is a first step toward solving and preventing them. A certain degree of education for owners can help them prevent or better control such problems. Most dogs vocalize in one way or another through barking, howling, communication, and more. Excessive barking, however, is considered a behavioural problem. [9,10,16,19]

Finally, answering how important are the animal needs (figure 5), the owners concluded that the most important is health (76%), then ensuring food (60%), the absence of fear and stress (30%), ensuring comfort (25%), and 20% considered the behaviour to be the most important need.

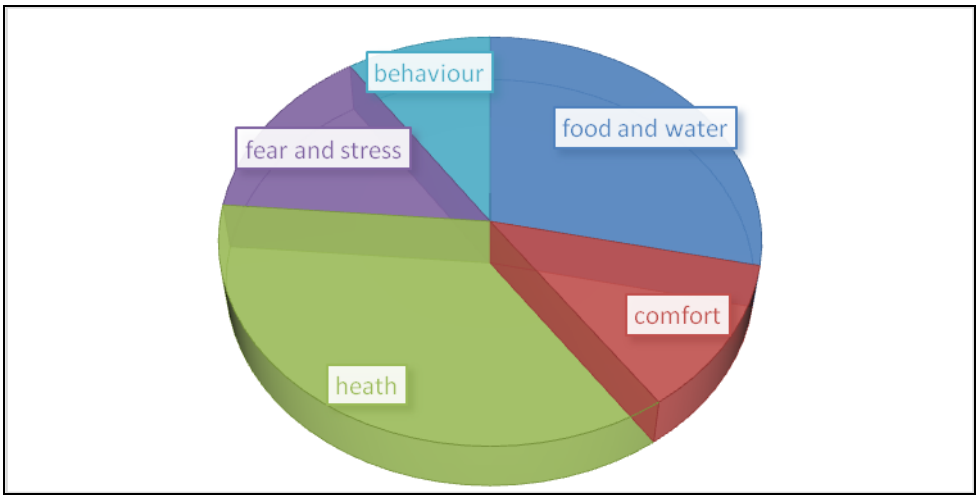

Figure 5. The way in which owners appreciate (%) the importance of the animals' needs

Some of these answers were contradictory to those given regarding how comfort was ensured, for example, where it was ensured at a rate of 50%, fear and stress which were ensured at a rate of 50%, as well as dog behaviours, where it was actually ensured at a rate of 69%.

Conclusions

The pet owners' responses showed that they do not know in detail what the welfare of their animals entails, getting most of the information from friends, social media, or from what they have read about how to care for their animals.

The owner's perception of their pet's welfare is essential to understanding what reciprocal attachment means. The better they understand their dog's needs, the better they will be able to understand what their dog is thinking and how to take better care of it.

Veterinarians are a reliable source for owners regarding knowledge of animal care and how to provide for their needs. Because the results showed a major involvement of owners in ensuring the health of their pets, this aspect can offer a useful tool in involving veterinarians in educating owners, on how to ensure the well-being of their dogs, from the first visit to the practice.

The pet welfare depends on the knowledge of each owner regarding the exact needs of the dog and how to provide them, even before having it.

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THE INCIDENCE AND TREATMENT OF OVARIAN CYSTS IN CAVIA PORCELLUS (GUINEA PIG)

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Abstract

Ovarian cysts are among the most common reproductive disorders in female guinea pigs (Cavia porcellus), particularly affecting individuals between 1.5 and 6 years of age. Despite a high global incidence of 50–75%, this condition remains under-documented in Romania. Ovarian cysts can be classified into serous, follicular, and, more rarely, paraovarian or luteal types. Clinical signs often include bilateral flank alopecia, abdominal distension, lethargy, anorexia, and reproductive dysfunction. Diagnosis is based on a combination of thorough anamnesis, physical and semiological examination, imaging techniques such as ultrasonography and radiography, and laboratory analyses including hematology, biochemical profiling, and histology. Containment and proper handling of the animal during examination are crucial to minimize stress and risk. While asymptomatic cases may go unnoticed, severe cysts may require intervention. Treatment options vary from hormonal therapy with hCG or GnRH analogues to surgical approaches such as ovariectomy or ovariohysterectomy. This paper aims to highlight the diagnostic methods and therapeutic approaches for ovarian cysts in guinea pigs and their implications on fertility, offering a basis for improving veterinary care in exotic companion animals.

Keywords: *ovarian cysts, guinea pig, ovariohysterectomy*

Introduction

This article aims to investigate ovarian cysts in guinea pigs (Cavia porcellus), focusing on effective clinical diagnostic methods based on evidence such as abdominal palpation, blood analysis (hematology and biochemistry), hormonal testing, and imaging techniques (radiography and abdominal ultrasound) as well as therapeutic approaches used in the treatment of this condition.

Although once widely used as laboratory animals, guinea pigs are now increasingly kept as pets, appreciated for their friendly behavior, ease of care, and varied coat types. In veterinary practice, they are often presented for seemingly minor symptoms such as reduced appetite, hair loss, aggressive behavior, or abdominal enlargement signs that may indicate the development of ovarian cysts, a reproductive disorder affecting female fertility.

Ovarian cysts are among the most common diseases of the female reproductive system in guinea pigs and are often underdiagnosed due to their nonspecific symptoms. Early detection is crucial, as medical or hormonal treatments are more effective in the early stages. When cysts are large or recurrent, surgical intervention specifically ovariohysterectomy is the preferred method, offering the best long-term outcome and reducing the risk of mammary tumors.

Materials and Methods

Tbale 1. Details of the cases

Patient name	***Breed***	***Age***	***Weight (kg)***	***Sex***	***Color***	***Temperature***
Zuzu	Abisinian	7 years and 3 months	0.965	Female	standard	38.2ºC
Cara	American/ English	1 year and 11 months	-	Female	-	38.9 ºC
Cici	Abisinian	5 years and 11 months	0.985	Female	-	38.6 ºC
Penelope	American/ English	5 years and 6 months	1.015	Female	White and black	38.7 ºC
Kiwi	American/ English	7 years and 1 month	0.675	Female	-	38.1 ºC
Missy	Merino	5 years and 6 months	1.1	Female	White with black	38.8 ºC
Fiffy	Abisinian	4 years and 11 months	0.71	Female	-	38 ºC
Ruby	American/ English	5 years	0.84	Female	-	38.8 ºC
Bubulina	Mix	4 years and 2 months	0.86	Female	White	38 ºC
Bell	American/ English	4 years and 5 months	0.785	Female	-	42.7 ºC

Each subject underwent a thorough semiological examination, which began with the collection of a complete anamnesis. This included details such as age, sex, breed, duration of symptoms, dietary habits, environmental conditions, contact with other animals, and any behavioral or weight changes observed by the owner in recent days, weeks, or months. The clinical assessment was divided into a general evaluation and a region-specific examination. The general evaluation was performed from a distance, focusing on posture, respiratory rhythm and frequency, activity

levels, and behavioral responses, including vocalizations. The region-specific examination involved inspection and palpation of the skin and fur, head and neck (checking for ocular clarity, nasal dryness, salivation, incisor length, and lymph node inflammation), thorax (cardiac and pulmonary auscultation), abdomen (palpation for distension, masses, or gas buildup), locomotor system (joint mobility and limb integrity), and the urogenital and anal regions (correct sex identification, presence of secretions, and mammary gland palpation to detect neoplasms).

Proper handling techniques were employed to minimize stress and ensure both patient and handler safety. The animal was first lifted with both hands supporting the abdomen, then repositioned with one hand supporting the thorax and abdomen while the other cradled the hindquarters. During clinical procedures, one operator provided restraint while the examiner conducted physical assessment. When necessary, a towel wrap method was used to safely administer medication orally or via injection.

Diagnosis of ovarian cysts was based on specific clinical indicators, such as bilateral flank alopecia, abdominal distension, pain upon palpation, lethargy, anorexia, behavioral changes (increased aggression, sexual hyperactivity), decreased fertility, and impaired mobility. Differential diagnoses included ovarian or uterine tumors, endometrial hyperplasia, pyometra, obesity, ascites, pregnancy, adrenal disease, and deep abscesses.

Imaging was essential for confirming the diagnosis. Radiography was used to detect large abdominal masses; however, soft tissue contrast limitations reduced sensitivity for smaller cysts. Ultrasound proved more effective, offering detailed visualization of reproductive structures and cyst morphology. Ovarian cysts appeared as fluid-filled, anechoic or hypoechoic structures ranging from 0.5 to 7 cm in diameter.

Blood samples were collected for complete blood counts (CBC) and biochemical profiling, focusing on indicators of systemic health and potential endocrine imbalance. Parameters included hematocrit, leukocyte count, serum proteins, liver enzymes, and renal function markers.

Figure 1. Radiological and ultrasound representation of ovarian cysts

In non-severe cases or when surgery was contraindicated, hormonal therapy was employed. Human chorionic gonadotropin (hCG) was administered intramuscularly or subcutaneously at 100 IU to mimic LH activity, although repeated doses led to reduced efficacy due to antibody development. Gonadotropin-releasing hormone (GnRH) analogs were used in hormonally active follicular cysts to promote regression via FSH and LH modulation. Percutaneous cyst drainage under ultrasound guidance was performed as a palliative method but showed high recurrence rates without adjunct hormonal therapy.

Ovariohysterectomy was the treatment of choice for severe or recurrent cystic pathology, involving complete removal of the ovaries and uterus. In cases where the uterus remained unaffected, ovariectomy alone via dorsolateral approach was performed, reducing gastrointestinal postoperative complications and promoting faster recovery.

After the surgery is important to put the Guinea pig on a heating pad or warm environment, as small animals can quickly become hypothermic. The pain management and the constant observation after surgery is very important as those rodents can be very sensitive, so it's important to administer analgesics so the patient won't be in any discomfort and to monitor the breathing, heart rate and general responsiveness until the Guinea pig is fully awake from the anesthesia, but also after it woken up. The bandages need to be inspected daily for any sign of possible bleeding, infection, redness or opening of the wound. The operated area needs to stay dry, so it's highly recommended to avoid bathing or getting the operated area until the incision is fully healed. Feeding and hydration are also very important steps in the recovery as some Guinea pigs might not be able to eat or drink water on their own. So the they will need to me manually fed and hydrated through syringe and perfusions with lactated ringer.

Results and Discussions

This study of the 10 cases was done between January 2023 and July 2024.During the study, two guinea pig owners declined the recommendation for ovariohysterectomy surgery for their pets. Furthermore, one of these owners also refused additional diagnostic imaging procedures such as radiography and ultrasonography. This refusal limited the ability to fully assess the reproductive health status and any potential comorbidities in these animals.

In contrast, the guinea pigs that underwent ovariohysterectomy generally showed favorable postoperative outcomes. Despite some individuals requiring subsequent gastrointestinal or urinary surgeries,

recovery from the ovariohysterectomy was successful, with no major complications directly related to the reproductive surgery. These cases highlight the importance of comprehensive diagnostic evaluation and timely surgical intervention to improve the overall health and quality of life in guinea pigs.

The refusal of surgery and diagnostic imaging in some cases underscores the challenges faced in clinical veterinary practice, particularly regarding owner compliance and decision-making. It also suggests a need for enhanced owner education about the benefits of early surgical intervention and diagnostic imaging to prevent progression of reproductive and other systemic diseases.

Overall, the results reinforce that ovariohysterectomy is a safe and effective procedure for guinea pigs when appropriately indicated and combined with thorough diagnostic assessment. The positive outcomes in operated animals also support the recommendation of surgery as a preventive measure, especially considering the risk of reproductive disorders common in this species.

Conclusions

Ovarian cysts are a prevalent and significant reproductive health issue in female guinea pigs, often presenting with nonspecific clinical signs that can delay diagnosis. This study highlights the importance of thorough clinical examination, supported by diagnostic imaging and laboratory analyses, for accurate identification and effective management of ovarian cysts.

Ovariohysterectomy proved to be a safe and effective treatment, yielding positive postoperative outcomes even in cases complicated by additional gastrointestinal or urinary conditions. Early surgical intervention, combined with comprehensive diagnostics, improves overall prognosis and quality of life in affected animals.

Owner compliance remains a critical factor influencing diagnostic and therapeutic success. Refusal of surgery or diagnostic imaging, limits treatment options and may lead to disease progression. Therefore, enhanced education and communication with pet owners are essential to promote timely veterinary care.

Ultimately, ovariohysterectomy and ovariectomy should be considered the treatments of choice for severe or recurrent ovarian cysts in guinea pigs, serving not only to resolve clinical symptoms but also to prevent future reproductive disorders and associated complications.

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THE INFLUENCE OF ACIDIFIERS ON BIOPRODUCTIVE INDICATORS AT CHICKENS FROM A COMMERCIAL FLOCKS

CUCĂ DANIEL, BERGHEȘ CARMEN

SUMMARY

The investigations followed the evolution of the bioproductive parameters in 2 batches of broilers: one batch was given acidifier in the drinking water and the second batch which received plain water without acidifier.

Comparative observations were made on 2 broiler houses populated with the ROSS 308 hybrid, (LE) the experimental group consisting of 18,000 chickens and the control group (LM) also consisting of 18,000 broiler chickens. The following were followed: the evolution of body weight, the average daily gain, the percentage of mortality and the specific consumption. In the experimental group it was found: that the body weight was 280 g higher, the percentage of mortality 2.9%, the average daily gain 61.09 g and the specific consumption of 1.57 g. The control group presented performance values bioproductive much lower due to the development of pathogenic bacterial flora following the non-administration of water with acidifier.

Key words: Acidifianți, greutate corporală, procent de mortalitate, sporul mediu zilnic pui carne,

INTRODUCTION

The primary role in ensuring progress in poultry farming is played by scientific research, which is focused on the development of special skills (high growth rate, large number of series, increased average daily gain, reduced specific consumption per product unit, etc.) (Zoltan Peter, et al 2011).

Acidifiers are defined as substances of organic, natural or synthetic origin that favor the development of useful microorganisms in the digestive tract, contributing to maintaining health and increasing the productive performance of animals (Pană C.O., 2000).

Both inorganic acids (phosphoric, hydrochloric, sulfuric acid) and especially organic acids: propionic, acetic, citric, sorbic, formic acid can be used as acidifiers.

While the mechanism of bactericidal action of organic acids is directly related to their undissociated form [R-COOH]. Chemically, this form is lipophilic and can penetrate the bacterial cell membrane, in contrast to the dissociated form. This property causes toxicity inside the microbial cell. On the one hand, there is the release of H+ cations inside the cytoplasm, destroying the cell's metabolism, which causes its death (this arrangement to some extent is similar to the mechanism of action of antibiotics) on the other hand - the radical anion causes a toxicity regarding DNA (Voiniţchi E., et al 2014).

As a result, the objective of this work was to determine the effectiveness of acidifiers on productive indicators in ROSS 308 breed broilers raised in a commercial farm

MATERIAL AND METHOD

The research was carried out with the aim of elucidating the influence of the product AC WTL 7, manufactured by the company NOACK, Austria, on the production indices of broiler chickens of the ROSS 308 breed on a number of 18,000 birds from 14 to 42 days old.

The birds were divided into two batches of 18,000 birds each, the first batch representing the experimental batch (LE) and the second batch being the control (LE). The research was carried out within a commercial company specialized in raising broiler chickens. The chickens from the experimental group daily in the drinking water from 14 to 42 days the product AC WTL 7, which contains as active ingredients: formic acid, acetic acid, lactic acid, citric acid and calcium in a proportion of 500 mm/1000 l water. The product was administered to the birds daily for 4 weeks. The birds in the control group (LM) were given ordinary water without the acidifying product.

All batches of broiler chickens were maintained under the same conditions, being fully respected the microclimate parameters, the amount of food and water administered. During the entire investigation period, the ROSS 308 chickens were constantly examined. Also, to monitor the production parameters, a strict record of them was kept.

AC WTL 7 acidifier is a mixture of acids and copper sulfate for acidifying the water of animals and birds, ensuring its microbiological control and being a source of copper. Composition: It is a mixture of organic acids and copper sulfate. Contains as active ingredients: Formic acid 30.6%, Acetic acid 12.3%, Lactic acid 10.1%, Citric acid 7.2%, Calcium - at least 21.8%, Energy value 3.32MJ/kg.

The statistical analysis of the experimental data was performed using the parametric criteria after the student T-test. Results are expressed as mean + standard error. Significance threshold shown: $P<0.01 – 0.05$.

RESULTS AND DISCUSSION

During the investigations, the chickens were fed and cared for according to the established schedule. Following the observations made over a period of about 28 days, no deviations or adverse reactions in their health were reported. Body weight was determined weekly.

Dynamics of body weig
ht in the investigated groups

Table 1.

week	Experimental Lot (18000 capete)		Control Lot (18000capete)	
	weight (g)	Weight/week (g)	weight (g)	Weight/week (g)
0	43	-	43	
1	196	153	195	152
2	525	329	505	310
3	1030	505	990	485
4	1610	580	1490	500
5	2380	770	2120	630
6	2810	430	2530	410
Media	2565		2325	
between the two lot	280 g			

The statistical analysis of the data obtained and presented in table 1 revealed that the product containing organic acids induces a change in body weight by approximately 280 g in the experimental group, compared to the control group.

From the analysis of the data presented in table 2, the final percentage of mortality was 2.90% in the experimental group and 5.85% in the control group. The difference between the 2 lots was 2.95%.

The dynamics of the percentage of mortality in the investigated lots

Table 2

week	Experimental lot (18 000 heads)		Control Lot (18000 heads)	
	Mortality percentage %	**Mortality percentage cumulatives %**	**Mortality percentage %**	**Mortality percentage cumulatives%**
1	0.75	0.75	0.65	0.65
2	0.45	1.2	0.40	1.05
3	0.30	1.5	0.7	1.75
4	0.5	2.0	0.8	2.55
5	0.4	2.4	1.2	3.75
6	0.5	2.9	2.1	5.85
average between	2,9		5.85	
The difference between the 2 lots	2.95%			

The evolution of the average daily gain, as can be seen from the data presented in table 3, was 61.07g in the experimental group and 55.5g in the control group, the difference in specific consumption between the 2 groups was 5.77g

The evolution of the average daily growth in the lots investigated

Table 2

week	**Experimental Lot (18 000 heads)**	**Control Lot (18000 heads)**
	The Spor/day (g)	**Sporul mediu zilnic (g)**
1	21,8	21,7
2	47	44,2
3	72,1	69,2
4	82,8	71,4
5	110	90
6	64	58,5
Media	61,07	55,3
average daily gain	5,77 g	

As a result of the administration of acidifiers, the control group had a higher feed consumption of 1.61 kg of feed/kg of meat obtained due to digestive disorders generated by pathogenic bacterial flora, and the experimental group had a consumption of 1.57 kg of feed/kg of meat obtained meat. The difference in specific consumption between the 2 batches was 4 g.

Average specific consumption values for the lots investigated

Table 4

Nr. Crt.	mentions	Lot			
		Lot 1		Lot 2	
		kg	Sẍ	kg	Sẍ
1.	Specific consumption 1-42 days	1.57	1.47	1,61	1.85
2	The difference between the 2 lots	4 g			

CONCLUSIONS

1. The introduction of the product Noack AC WTL 7 in the water of broilers proved to be beneficial, since no side effects and adverse reactions were recorded.
2. The administration of the mixture of organic acids influenced:
   - increase in body weight by 280 g in the experimental group compared to the control group;
   - to decrease mortality 2.9% in the experimental group compared to 5.85% in the control group;
   - higher values of the average daily gain by 5.77 g in broilers from the experimental group
   - maintaining a low consumption of feed by 4 g less in the experimental group compared to the control group perfectly within the standard consumption values
   - stimulates appetite and metabolic processes in the liver.

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DIAGNOSIS AND TREATMENT OF FOOD-RELATED DERMATITIS IN DOGS

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Abstract

Food-related dermatitis is a significant issue in veterinary medicine, impacting the health and comfort of domestic dogs. These conditions manifest as skin inflammation caused by the consumption of specific dietary ingredients and can easily be confused with other types of dermatitis, such as atopic dermatitis. The primary objective of this study was to analyze methods for identifying food-related dermatitis and the available treatment options, in the context of the increasing incidence of these conditions and the challenges encountered in establishing an accurate diagnosis.

The analysis considered diagnostic methods based on elimination and reintroduction diets, as well as serological and intradermal tests, which are useful for confirming adverse food reactions. Regarding treatment, the importance of a strict dietary regimen was highlighted, using hypoallergenic or hydrolyzed protein foods, supplemented with symptomatic medications such as antihistamines and corticosteroids. In more severe cases, immunological therapies may also be employed.

The analysis demonstrated that establishing a diagnosis in such cases is often complicated and requires a complex and interdisciplinary approach, and the treatment must be tailored to each individual case. This study aimed to consolidate knowledge and clinical skills related to the management of food-related dermatitis in dogs, thereby contributing to the improvement of care standards in the veterinary field.

Keywords: *food allergy in dogs, hypoallergenic diets, veterinary dermatology*

Introduction

Food-related dermatitis, also known as food hypersensitivity, represents a condition with significant implications in canine veterinary medicine. This disorder is characterized by an abnormal immune response of the body to certain proteins or components in the animal's diet, manifesting as inflammatory skin lesions and persistent pruritus. Unlike other forms of dermatitis, such as atopic dermatitis, which involve multiple factors and genetic predispositions, food-related dermatitis occurs exclusively as a result of exposure to dietary factors. In veterinary practice, it is estimated that this condition accounts for a significant proportion of all cases of allergic dermatitis in dogs.

The causes of this disease include complex immune mechanisms, involving both antibody-mediated reactions and non-antibody-mediated mechanisms, which complicate the establishment of a precise diagnosis. The symptoms are varied and may resemble those of other skin diseases, making the identification of food-related dermatitis a true clinical challenge. Recent observations have highlighted the difficulties associated with the correct recognition of this condition, considering that the signs are often nonspecific and can be mistaken for manifestations of other dermatological diseases.

This article aims to provide a detailed and up-to-date perspective on the methods for identifying and treating food-related dermatitis in dogs, based on analyses of the specialized literature and relevant clinical experiences. The main obstacles encountered in differential diagnosis and the development of an effective treatment plan will be discussed, emphasizing the importance of collaboration between practitioners and pet owners to ensure effective management of these cases.

Material and Methods

This study was conducted as a retrospective and observational analysis, with the primary objective of identifying and evaluating cases of food-related dermatitis observed in dogs. The research included data collected from recent specialized literature, as well as clinical observations from university and private veterinary units, providing a solid basis for a detailed analysis of the condition.

Patient selection focused on dogs exhibiting clinical signs consistent with food-related dermatitis, including intense pruritus, skin redness, papules, alopecia, and self-inflicted lesions. The initial diagnosis was established by excluding other possible causes, such as cutaneous parasitoses, bacterial or fungal infections, atopic dermatitis, or adverse drug reactions. The evaluation included analysis of medical records, the animals' dietary history, observed clinical signs, and the results of available complementary tests.

To confirm the diagnosis, a rigorous protocol was applied, which included an elimination diet test consisting of the exclusive administration of a controlled diet based on proteins with a reduced risk of adverse reactions, either in the form of commercial hydrolyzed diets or home-prepared recipes, over a period of at least eight weeks. The effectiveness of this method was assessed by monitoring the reduction or disappearance of clinical signs. After symptom improvement, a food challenge test was conducted by gradually reintroducing the suspected ingredients to identify the specific allergens responsible for the adverse reactions.

Serological and intradermal tests were used in certain cases as complementary methods to highlight levels of specific antibodies or skin reactions to the suspected substances, with the caveat that their applicability in the diagnosis of food-related dermatitis is limited.

Monitoring of the response to the elimination diet was performed both through direct clinical observations and through information provided by owners regarding the progression of skin and behavioral signs in the animals. In more severe or persistent cases, adjunct treatments such as antihistamines and corticosteroids were used, with careful monitoring and adjustment of the therapeutic regimen based on the progression of each case, in accordance with best veterinary practices.

The analyzed data were meticulously selected from validated sources, including scientific publications, clinical protocols, and practical observations, all chosen for their relevance and applicability in the context of canine food-related dermatitis. The analysis aimed to identify the most effective diagnostic and treatment methods, determine the prevalence of this condition, describe its clinical characteristics, and highlight potential associated risk factors. This detailed approach enabled an objective and critical evaluation of the strategies used in contemporary veterinary practice, emphasizing the need to adapt diagnostic and therapeutic plans based on the characteristics of each patient.

Results and discussion

The examination of information from the specialized literature, combined with the analysis of data from recent cases, highlights several key aspects related to the identification and treatment of food-related dermatitis in dogs. It was found that the elimination test, followed by the gradual reintroduction of ingredients, represents the fundamental method for diagnosing this condition, being considered the most reliable due to its ability to establish a direct link between diet and the appearance of cutaneous symptoms. The implementation of a special diet with a low allergen content, over a period of at least two months, led to the improvement of clinical signs in the majority of cases, thus confirming the hypothesis of an adverse food reaction. The gradual reintroduction of foods allowed for the identification of trigger elements and the establishment of a personalized dietary regimen tailored to each patient.

Regarding laboratory tests, such as serological or intradermal tests, it was found that these have a low predictive value in the case of food allergies and are more useful for diagnosing other types of dermatitis, such as atopic

dermatitis. These tests can provide additional information in more complex clinical situations but cannot replace the elimination test.

From a therapeutic standpoint, it was observed that the use of diets based on hydrolyzed proteins or ingredients considered less allergenic, combined with strict adherence to the dietary regimen, played a decisive role in controlling symptoms. Additionally, the necessity of avoiding any treats or rewards that might introduce allergens into the animal's diet was emphasized. In more severe cases, symptomatic medications such as corticosteroids and antihistamines were administered, but their use was limited to short periods to avoid adverse reactions.

A particularly important element that emerged was the difficulty of diagnosing food-related dermatitis, especially due to the similarity of clinical manifestations with those of other skin diseases, such as atopic dermatitis or adverse drug reactions. In this context, the need for a thorough clinical evaluation was highlighted, aimed at excluding infectious and parasitic diseases in order to establish an accurate diagnosis.

Furthermore, it was noted that the success of treatment largely depends on effective collaboration between the veterinarian and the pet owner, particularly regarding strict adherence to the dietary regimen and close monitoring of symptoms over the long term.

Conclusions

Cutaneous conditions in dogs caused by food represent a major challenge in establishing a correct differential diagnosis of allergic dermatitis. Clinical observations and the analysis of available information indicate that the elimination test, followed by the gradual reintroduction of foods, remains the most reliable method for identifying allergic reactions caused by food. The accuracy of the diagnosis depends on the exclusion of other possible causes, such as atopic dermatitis, contact dermatitis, parasitic infestations, or skin infections.

The adoption of a strict diet based on ingredients with a low risk of allergic reactions has proven effective in alleviating clinical manifestations in most affected animals, thus confirming the hypothesis of the involvement of dietary factors. At the same time, the constant involvement of pet owners, strict adherence to the diet, and monitoring the progression of symptoms are essential aspects for the success of the therapeutic plan.

However, establishing an accurate diagnosis of food-related dermatitis remains difficult and requires a structured approach that combines clinical knowledge, experience, and available resources. While medication can provide short-term benefits, it does not represent a long-term

solution and must be used with caution to avoid adverse reactions. In this context, a thorough understanding of the pathophysiological mechanisms, diagnostic techniques, and appropriate therapeutic strategies is indispensable for effective clinical management.

Recommendations

The application of the elimination test, followed by the gradual reintroduction of foods, should be considered the primary method for establishing an accurate diagnosis in cases of food-related dermatitis, avoiding reliance on laboratory tests that may have limited accuracy.

The use of special diets, based on ingredients with a low risk of adverse reactions, is recommended for a minimum of two months, with careful monitoring of clinical progression and the gradual reintroduction of foods to identify the elements triggering the reaction.

The use of symptomatic medication, such as corticosteroids and antihistamines, should be limited to severe cases and only for short periods, to prevent the occurrence of side effects.

An essential aspect is the education and involvement of pet owners, who must adhere to the prescribed dietary regimen and avoid exposing the dogs to food substances that may cause adverse reactions.

Furthermore, continued clinical and epidemiological studies are necessary to improve understanding of the frequency, predisposing factors, and effective therapeutic options for cases of food-related dermatitis in dogs.

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FROM CARE TO NEGLECT: THE FATE OF ABANDONED ANIMALS

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Abstract

In recent decades, global society has witnessed a significant transformation in the way we perceive and interact with animals. This change has been marked by a shift from a model in which animals were primarily seen as utilitarian resources - used for labor, food, clothing, or scientific experiments - to one in which they are considered family members, benefiting from rights and legal protection. This evolution has been accompanied by a substantial increase in the number of pets and, at the same time, by a rise in the phenomenon of animal abandonment.

Keywords: *pets, family, care, abandon*

Introduction

The abandonment of companion animals represents one of the most serious issues of social and ethical responsibility in contemporary societies. Especially in developed countries, where animals are often seen as family members, the paradox of giving them up in large numbers remains a matter of concern. According to studies, millions of dogs and cats end up in shelters or on the streets each year due to owners deciding not to keep their animals. This phenomenon not only overcrowds adoption centers but also reflects a rupture in the relationship between people and the animals they chose to care for .

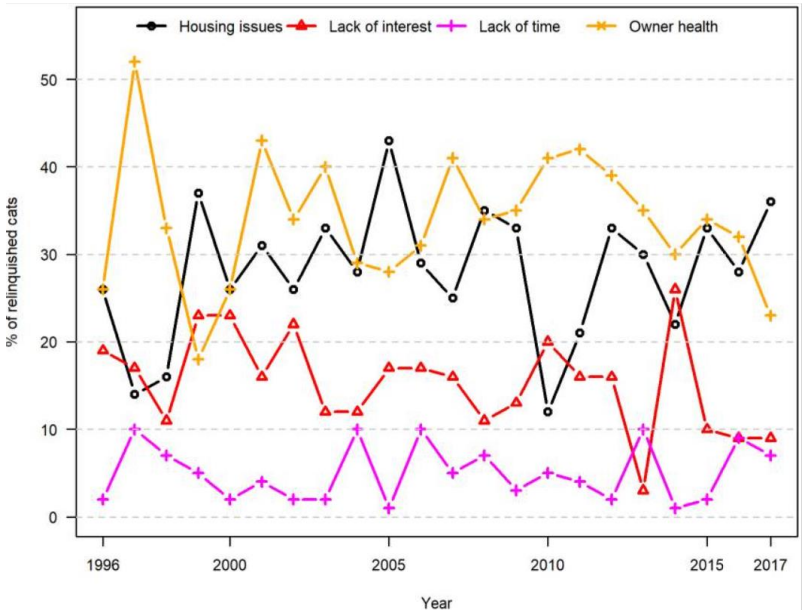
Causes of Companion Animal Abandonment

The causes of abandonment are complex and can be divided into two major categories: circumstances related to the owners' personal situation (financial difficulties, health problems, moving) and issues associated with the animal's behavior or needs (aggressiveness, disobedience, unexpected medical costs).

Although many people attribute the decision to abandon to the animal itself (“it can’t adapt,” “it’s too aggressive”), research highlights that human factors often play an equally important role. For example, lack of education about long-term responsibilities or choosing a pet unsuitable for one’s lifestyle can lead to critical situations.

A meta-analysis published in a veterinary journal on pet abandonment, comparing the proportion of dogs surrendered to shelters for animal-related vs. owner-related reasons, found that behavioral problems were the most frequently mentioned (in eight out of nine studies), with frequencies ranging from 11% to 34%. Owner health problems were reported in five studies (4–9%), and moving in four studies (7–48%).

Fig. 1 Proportional distribution of animal-related reasons for dog surrender at a Danish animal shelter from 1996 to 2017

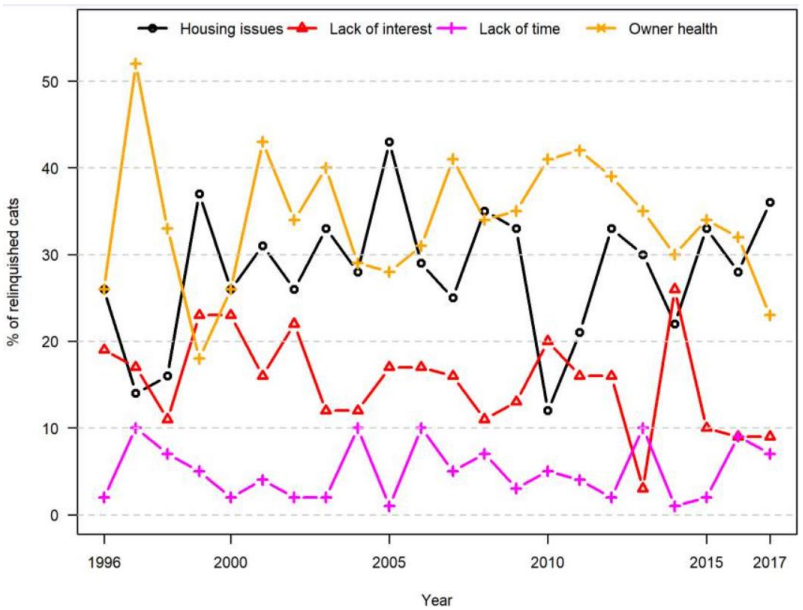


Moving and unrealistic expectations appeared in four studies, representing 7–48% and 6–21% of cases, respectively. Costs were mentioned in five studies, with values between 0.6% and 27%. However, since the reporting of reasons was not systematic in the included studies, comparison is difficult.

Overall, the most frequent reasons are owner-related. Thus, although behavioral problems were the most consistently reported, they are not the main reason cited by owners for abandonment. Three of the nine studies

were based on shelter records, the rest on questionnaires. Of the meta-analysis studies, five were from the USA, two from the UK, one from Australia, and one from Serbia. In conclusion, although behavioral problems play an important role in the decision to abandon, owner-related reasons appear, according to the meta-analysis, to be more frequent than animal-related ones.

Fig. 2 Owner-related reasons for cat surrender. Proportional distribution of owner-related reasons for cat surrender at a Danish animal shelter from 1996 to 2017



For cats, the main reasons for abandonment were published in a Swedish study, where owners could indicate multiple reasons for surrendering their cats. The most common were: allergy to cats (58%), owner moving (27%), advanced age, illness, or death of the owner (24%), new family situation (20%), tiredness with the animal (11%), lack of time (9%). Behavioral problems were also mentioned, but no specific statistics were provided. The authors suggested that the variable definition of "abnormal behavior" between shelters made quantifying this factor difficult.

Consequences of Companion Animal Abandonment

The abandonment of companion animals generates a multifactorial crisis, with profound implications for both animals and society. Solutions require integrated approaches: tougher laws, public education, and large-scale sterilization programs.

Impact on Animal Health and Welfare

Stray animal populations represent a huge animal welfare problem in Europe, and Romania, the second poorest country in the European Union, has one of the largest stray animal populations on the continent, with an estimated up to 500,000 dogs and likely even more stray cats living in the country. While every day on the streets is a struggle for survival, the ever-growing population also causes significant problems for citizens: from the risk of dog bites to the transmission of zoonotic diseases, pollution, and noise, resulting in negative attitudes and behaviors towards stray animals.

Abandonment exposes animals to serious risks: malnutrition, parasitic diseases (e.g., leishmaniasis), physical trauma, and chronic stress. Studies show that abandoned animals have a life expectancy reduced by up to 70% compared to those in controlled environments. Abandonment also causes behavioral disorders, such as aggression or chronic fear, due to lack of socialization . Studies indicate that 60% of abandoned dogs die in the first year due to accidents, malnutrition, or cold .

While municipalities are legally required to allocate funds for stray animal management programs, decision-makers often lack the expertise and will to implement these programs effectively. Unfortunately, the killing of strays is still legal and frequently practiced to reduce overpopulation: without lasting results, but with enormous suffering. Inhumane housing in public and private shelters is also continuously used as a quick fix. Unwanted dogs often end up in these places and either live out their lives in deplorable conditions, with very little hope of ever being adopted, or are euthanized.

Ecological Consequences

Stray animals (e.g., dogs and cats) disrupt ecosystems by preying on wildlife. In Australia, abandoned cats have contributed to the extinction of over 20 species of small mammals. Also, waste left by stray animals pollutes soil and water.

Public Health Risks

Stray animals are a major public health concern. Their interaction with people, especially children, makes the transmission of zoonotic diseases from animals to humans much easier. The nature of these animals is unknown, thus exposing children and adults to the risk of illness through bites and scratches from infected animals .

A study in Romania found that 30% of human rabies cases were linked to contact with abandoned dogs. Also, infestation with ectoparasites (e.g., ticks) increases the risk of diseases such as Lyme or Ehrlichiosis .

Economic Costs

Managing abandoned animals burdens local budgets. In the EU, annual associated costs (shelters, euthanasia, sterilization campaigns) exceed 1.5 billion euros . In Romania, the lack of effective sterilization policies led to a 40% increase in expenses between 2010–2020.

Social and Ethical Implications

Concern for animals has become a major social issue in the last decade throughout the Western world. This concern was triggered by the emergence of a new consensus animal ethic, which goes beyond the traditional "human" focus on preventing cruelty and encouraging kindness. Instead, the essential feature of the new ethic is the extension of the same ethical notions used for humans to the treatment of animals.

Society is beginning to accept the idea that proper treatment of animals does not stem from excessive goodwill but, like obligations toward humans, derives from a duty to animals because of their capacity to feel pain, boredom, suffering, fear, and pleasure . As a result, people have demanded legislative guarantees for the proper treatment of animals in areas that traditionally benefited from a "laissez-faire" approach. The first area affected was animal research, with two federal laws adopted in the USA in 1985 aimed at controlling pain and suffering in the scientific use of animals. Other countries, including the UK and the Netherlands, have recently adopted similar legislation .

The next major area of social pressure for legislation will undoubtedly be animal agriculture, especially intensive farming. Sweden was the first, in 1989, to adopt laws requiring animal husbandry systems to respect animals' biological, behavioral, and psychological needs.

In the case of companion animals, the situation is different. Most pet owners do not keep them for profit but for the emotional relationship. Ideally, this relationship should be one of reciprocity, based on love and loyalty. However, in reality, people often violate this moral obligation; thus, worldwide, between 12.2 and 20.3 million healthy animals are euthanized annually due to owners' ignorance of their needs (behavior, feeding, exercise, etc.).

Abuse of companion animals is particularly serious because there is no justification—it is not a byproduct of a human purpose but a direct violation of the role these animals play in our lives . Society ignores these problems because it is easier to criticize "exotic" abuses (animal experiments, intensive farming) than to confront its own shortcomings, and the media and animal protection organizations tend to promote only the positive aspects of pet ownership, avoiding uncomfortable topics .

Acknowlegement

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HERMENEUTICS IN VETERINARY MEDICINE

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Abstract

The purpose of this article is to present the importance of hermeneutics in understanding the evolution of veterinary medicine in an economic, social and cultural context, in relation to scientific and technological progress.

Hermeneutic methods have been successfully used in research, in the analysis and interpretation of empirical data in close connection with theoretical knowledge, in the practical implementation of new approaches.

Last but not least, the hermeneutic approach finds its utility in understanding animal behavior, in interpreting clinical signs of disease and in obtaining a diagnosis.

Hermeneutics, a research approach and method in which interpretation is the main analytical tool, contributes to the knowledge necessary to understand the patient, his suffering and to develop care practices that promote health and well-being.

Keywords: *hermeneutics, veterinary medicine, ethology, animal behaviour*

Introduction

Humans have been concerned with curing diseases since ancient times. The history of veterinary medicine reflects the evolution of the relationship between humans and animals, the advancement of veterinary practices, and the impact and role of veterinarians in society.

The beginning of veterinary medicine coincides with the domestication of animals. Animal welfare directly affected human livelihoods. There is evidence of rudimentary veterinary practices and knowledge dating back to 9000 BC in the Middle East.

The Industrial Revolution introduced significant advances in farm animal care, the development of animal husbandry, and the emergence of urban veterinary practices focused on exotic and companion animals.

The establishment of the first veterinary schools in the 18th century marked the formalization and professionalization of the field, with

veterinary medicine evolving from an empirical practice to a scientific discipline. The 19th century is notable for the emergence of personalities whose research contributed to the rapid progress of veterinary medicine and even human medicine.

In the 20th century, the development and widespread use of vaccines and antibiotics, technological advances, especially in diagnostic and treatment methods, and changing attitudes towards animals and their status revolutionized animal health and welfare care.

Veterinarians play an extremely important role in the animal-based food industry and in protecting public health. In recent years, veterinary medicine has included wildlife conservation, ecosystem health, endangered species, and biodiversity.

Medicine is a science and an art; encyclopedic accumulation does not make you better, it may sharpen your pragmatic, empathetic and/or analytical spirit. Empathic context is necessary in the veterinary profession - the veterinary practitioner must become receptive to the needs of the animal, the process of finding meaning in animals being a moral issue and a hermeneutical challenge.

The contribution of hermeneutics in veterinary medicine

The term hermeneutics (hermeneutics) comes from the Greek language, meaning to interpret. Jens Zimmermann, author of the book "Hermeneutics: A Short Introduction", says that hermeneutics is the art of understanding and making oneself understood, going beyond simple logical analysis and general interpretive principles. Hermeneutics can be treated both as a fundamental philosophy of qualitative research and as a specific way of analyzing data.

Contextually, hermeneutics represents the philosophy of the methodology of interpreting and understanding texts or etiopathogenetic concepts described in the literature and which aims at the "indirect language" of emotion or the clinical architecture of the disease (the presumptive, hypothetical aspects of the disease).

Overall, it is the observation and interpretation of one's own mental, organic or emotional states and dispositions of suffering (the clinical picture).

Understanding and interpretation can often be difficult. From an epistemological perspective (philosophy of knowledge), interpretation is a method used to clarify or construct meaning, to produce valid understanding. From an ontological perspective (philosophy of being and existence), interpretation characterizes the way in which people experience the world naturally, through states of mind, concerns, self-understanding, and practical commitments.

Interpretation necessarily presupposes a prior understanding that is personal, temporal, and situated in particular contexts. According to Gadamer, in the process of understanding, there is a detachment of the prejudices that facilitate understanding from those that obstruct it.

The difficulty between understanding the mechanisms of disease and their interpretation returns as a topicality, aiming for a perfection within the behavioral ethology of animals. The interpretative processes of the medical act, through the prism of clinical examination, influence the phenomenon of understanding the patient's state of suffering. In animals, the expression of suffering is achieved through a nonverbal (semiological) context. Clinical semiology and the interdependence between hermeneutics and phenomenology interpose themselves as an expression of the recognition of the hidden meanings of suffering – subclinical-physiopathological picture.

Our observations on animals are interpretative. Wilhelm Dilthey claims that the lived experience is expressed in signs - gestures and facial and body expressions, posture - and that the task of interpretation is to understand these organic signs, which give expression to life, even if in animals they do not constitute a conscious semiotic behavior.

The methodological principles of empirical data analysis in a hermeneutic study are related to the development of interpretations in accordance with the hermeneutic principle of the circle, in which parts and wholes are connected in a logical and meaningful way. Research informed and inspired by philosophical hermeneutics requires an investigation of the frameworks that determine health.

Ethology, the science of behavior, deals with the study of behavior and the interaction of animals with their natural environment. The causality of behavior is represented by the physiological triggering stimuli involved. No behavior has a single cause, each behavior can be determined by numerous external stimuli and different motivational states.

Animals are behaviorally prepared for predictable changes in the environment, choosing between several response patterns. Communication is triggered by a physiological disposition related to the survival instinct. Mathematical modeling of behavior is a method of addressing motivation problems that brings more precision in describing the relationships between causal factors and behavioral responses. Positive feedback intensifies the development of behavior, while negative feedback reduces or blocks the tendency to continue performing it.

The veterinarian must understand instinctual behavior and the animal's innate ability to respond to various situations.

Conclusion

The interpretation of animal behavior involves a specific extension of the concept of interpretation, the approach starting from cognitive ethology, establishing the ethogram by cutting out relevant units from the behavioral flow of animals, by observing them in their living environment. The examiner's own meanings and prejudices can affect the collection and analysis of data, and the experience of the veterinarian is also important.

The behavioral model of suffering animals or their adaptation and conservation capacities are modified by reactivity to the environment (habitat) or to various etiological agents.

In veterinary medicine, semiological and clinical aspects are described in contexts adjacent to non-specific manifestations and preceding the peak state of suffering, the information being verified by the set of clinical data about the habitat, applying the philosophy of the "perfect environment" for the coexistence of animals with it.

An issue that requires exploration is the idea of an ethics of interpretation. If animals are interpreters who create meaning (Umwelten), humans have a duty to recognize and defend this original interpretation. This is all the more so since, in veterinary medicine, informed consent is given by the owner on behalf of the patient.

Acknowledgement

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FREQUENCY OF GENITAL AND MAMMARY AFFECTIONS IN FEMALE DOGS IN PUBLIC SHELTER GIURGIU

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Abstract

Genital and mammary disorders are among the most common health issues in female dogs, especially in shelter environments where preventive care may be inconsistent. This study assesses the frequency of such affections in female dogs housed at the Public Shelter in Giurgiu, Romania. A retrospective analysis of medical records over a five-year period was conducted. Mammary tumors were the most prevalent condition, followed by pyometra and vaginitis. The results underscore the need for routine veterinary care and early spaying to mitigate these health concerns in shelter populations.

Introduction

Genital and mammary affections are leading causes of illness in female dogs, particularly those residing in public shelters. In such environments, limited access to consistent veterinary care and delayed spaying can increase disease incidence. Mammary tumors and uterine infections like pyometra are especially concerning due to their impact on quality of life and potential lethality. Understanding the frequency of these conditions within shelter populations is essential to improving animal health and guiding resource allocation. This study evaluates the prevalence and risk factors for genital and mammary disorders in female dogs at the Public Shelter in Giurgiu, Romania.

Materials and Methods

A retrospective study was performed using clinical data from the Public Shelter in Giurgiu between 2018 and 2023. Female dogs with documented genital or mammary conditions were included in the analysis. Inclusion Criteria:

- Female dogs with confirmed genital or mammary affections.
- Documented medical records with diagnostic confirmation.
- Diagnoses supported by clinical, histological, or imaging evidence.

Data Collected:

- Age at diagnosis
- Breed (when available)
- Health condition type (mammary tumor, pyometra, vaginitis, etc.)
- Reproductive status (spayed vs. intact)

Descriptive statistics were used to analyze the frequency of disorders. Comparative analysis was applied to assess the influence of reproductive status and age on disease prevalence.

Results

From a total of 842 female dogs examined during the study period:
- Mammary tumors were identified in 51.4% of cases.
- 55% of these were classified as malignant.
- Pyometra was diagnosed in 29.3% of dogs, particularly those over 5 years old.
- Vaginitis and other reproductive conditions made up 19.3% of cases.

Age Distribution:
- Dogs aged 6–10 years showed the highest incidence of mammary tumors and pyometra.
- Younger dogs (<3 years) presented more commonly with vaginitis.

Reproductive Status:
- 89% of the affected dogs were intact.
- Spayed females exhibited a significantly lower frequency of reproductive disorders.

Other Observations:
- Dogs with multiple litters had a higher occurrence of mammary tumors.
- Cases were often diagnosed late, leading to complicated treatment or euthanasia.

Discussion

The findings reveal a high prevalence of genital and mammary disorders in female dogs at the Giurgiu shelter, highlighting the impact of limited preventive care and delayed spaying. Mammary tumors and pyometra, the most common conditions observed, are strongly linked to reproductive status. The absence of early sterilization programs in shelters significantly contributes to the high disease burden.

Implementing routine spay/neuter programs, regular medical screening, and community education are critical strategies to address this issue. Additional research should explore long-term health outcomes following intervention efforts in shelter settings.

Conclusion

Genital and mammary affections are highly prevalent in the female dog population at the Public Shelter in Giurgiu. Mammary tumors and pyometra are especially common among intact and older dogs. Proactive health management, including early spaying, is essential to reducing the frequency of these conditions. Investment in veterinary care infrastructure within shelters could lead to better outcomes for vulnerable animal populations.

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COMPARATIVE STUDY OF NORMAL AND TOTAL LACTATION IN DAIRY COWS AT PANTELIMON FARM OVER THE LAST FIVE YEARS

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Abstract

The purpose of this study was to analyze the differences between normal lactation (305 days) and total lactation in Holstein-Friesian cows from Pantelimon farm over a five-year period (2020–2024). By evaluating production parameters including total milk yield, lactation duration, and average yield per cow per year, the study aimed to highlight the productive potential of extended lactations and their economic implications. Data were collected from the farm's digital management system and statistically processed to identify significant trends. The results showed a consistent increase in both normal and total lactation yields, with a growing gap in favor of total lactation, indicating potential benefits of extending milking periods under optimal management conditions. The findings support the development of tailored lactation management strategies to improve dairy farm profitability and sustainability.

Keywords*: milk production, lactation duration, dairy cattle, Holstein-Friesian, farm performance, Pantelimon*

Introduction

Milk production remains a fundamental pillar of modern animal husbandry, being both a key indicator of farm efficiency and an essential source of high-quality nutrients for human consumption. In recent decades, the dairy sector has experienced considerable technological progress, leading to improvements in herd productivity, animal welfare, and milk quality.

Lactation in dairy cows is a complex physiological process influenced by a multitude of genetic, environmental, and managerial factors. The standard lactation length—305 days—is widely used as a benchmark for evaluating dairy performance. However, in practice, cows often continue to produce milk beyond this standardized period, contributing to what is defined as total lactation. Understanding the differences between these two categories is crucial for optimizing herd management strategies and economic efficiency.

Pantelimon Farm, located on the eastern outskirts of Bucharest, represents a semi-intensive dairy unit that integrates modern technology, selective breeding, and precise feeding strategies. With an average of 90–100 lactating Holstein-Friesian cows annually, the farm provides a relevant model for investigating milk production dynamics under commercial conditions.

This study aims to assess and compare the performance of normal and total lactations over a five-year period (2020–2024) at Pantelimon Farm. The results will contribute to the identification of best practices in dairy production and offer practical recommendations for enhancing productivity and sustainability in similar farming systems.

Materials and methods

Study location and herd description

The present research was conducted at Pantelimon Farm, a commercial dairy unit located in Ilfov County, in the peri-urban area east of Bucharest. The farm operates in a semi-intensive production system and houses a herd of Holstein-Friesian cows selected for high milk yield. The average number of lactating cows during the study period (2020–2024) was approximately 95 head. The farm benefits from modern infrastructure, including a free-stall housing system, Total Mixed Ration (TMR) feeding, and an automated milking parlor of the "herringbone" type, equipped with sensors for milk flow and individual yield recording.

The cattle were grouped based on their lactation stage (early, peak, mid, late), reproductive status (pregnant, dry, open), and lactation number. The herd consisted of cows in their 1st to 7th lactation, allowing the evaluation of performance across different physiological stages. A computerized herd management system was used to track individual animal data including milk production, health status, insemination records, and calving intervals.

Data collection protocol

Data were collected continuously over a five-year interval (January 2020 – December 2024), using the farm's integrated electronic data system. For each cow and lactation cycle included in the analysis, the following variables were recorded:

- Animal ID
- Lactation number
- Date of calving
- Date of lactation end (dry-off)

- Duration of lactation (days)
- Milk yield during first 305 days (normal lactation)
- Total milk yield until dry-off (total lactation)
- Average daily milk yield
- Calving interval
- Incidence of clinical conditions (e.g., mastitis, metabolic disorders)

To ensure data consistency, only lactations completed without major interruptions were included. Lactations shorter than 200 days, or those affected by early culling, abortions, or severe illness, were excluded. The final dataset consisted of complete lactation records from a statistically representative sample of cows per year.

Parameters analyzed

The primary parameters analyzed were:

1. Normal lactation yield (liters) – total milk produced during the first 305 days post-calving.
2. Total lactation yield (liters) – total milk yield from calving until dry-off.
3. Lactation duration (days) – number of days from calving to dry-off.
4. Difference between total and normal lactation yield (liters and percentage)
5. Average daily yield (liters/day) – calculated for both normal and total lactations.
6. Annual herd production – aggregate yearly milk yield normalized to average herd size.

Statistical analysis

Raw data were exported to Microsoft Excel for preprocessing and cleaning, and subsequently imported into IBM SPSS Statistics for detailed analysis. Descriptive statistics (mean, standard deviation, minimum, maximum) were calculated for all variables.

For inferential analysis, paired-sample t-tests were used to assess statistical differences between normal and total lactation yields. Pearson correlation coefficients were computed to evaluate the relationship between lactation duration and total milk yield. Linear regression analysis was performed to identify predictors of extended milk production.

Additionally, the coefficient of variation (CV) was calculated to assess herd uniformity in production traits. Results were visualized using graphs (line and bar charts), and key trends were highlighted by year.

All statistical tests were performed at a significance level of $\alpha = 0.05$.

Results and Discussion

The analysis of milk production data collected from Pantelimon Farm over the period 2020–2024 revealed clear trends in both normal (305-day) and total lactation performance. The results demonstrate the productive potential of Holstein-Friesian cows under consistent management practices and provide insights into the economic viability of extended lactations.

Comparison between normal and total lactation yields

As shown in Table 1, both normal and total lactation yields exhibited an upward trend over the five-year period. The average milk yield during the standardized 305-day period increased from 8,700 liters in 2020 to 9,500 liters in 2024, marking a growth of approximately 9.2%. In parallel, the total lactation yield rose from 10,200 liters to 11,350 liters, representing a more pronounced increase of 11.3%.

Table 1. Average milk yield per cow by year (normal vs. total lactation)

Year	Normal Lactation (liters)	Total Lactation (liters)	Average Duration (days)
2020	8,700	10,200	305
2021	9,100	10,800	322
2022	8,900	10,500	317
2023	9,300	11,100	330
2024	9,500	11,350	335

The progressive increase in both categories indicates a general improvement in farm performance, attributed to factors such as better reproductive synchronization, improved nutrition (TMR adjustments), and enhanced health monitoring.

Difference and implications of extended lactation

The absolute difference between normal and total lactation yield varied from 1,500 liters in 2020 to 1,850 liters in 2024. Expressed as a percentage, this represents a production gain of approximately 17.2% to 19.5% beyond the 305-day benchmark. These additional liters can be economically advantageous if the marginal cost of maintaining the animal in lactation is offset by milk revenue.

Fig.1 Normal vs. total lactation (liters) 2020 to 2024

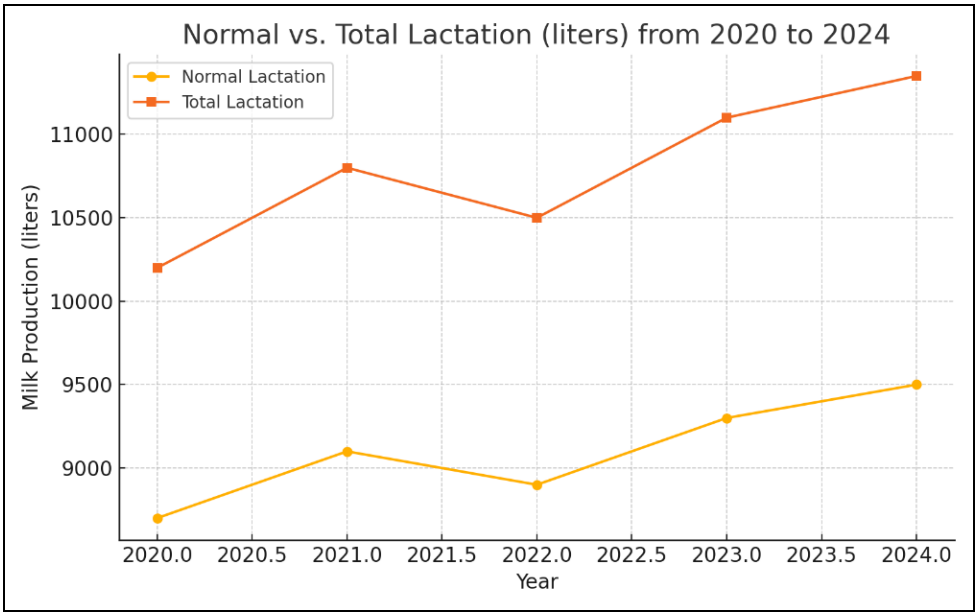
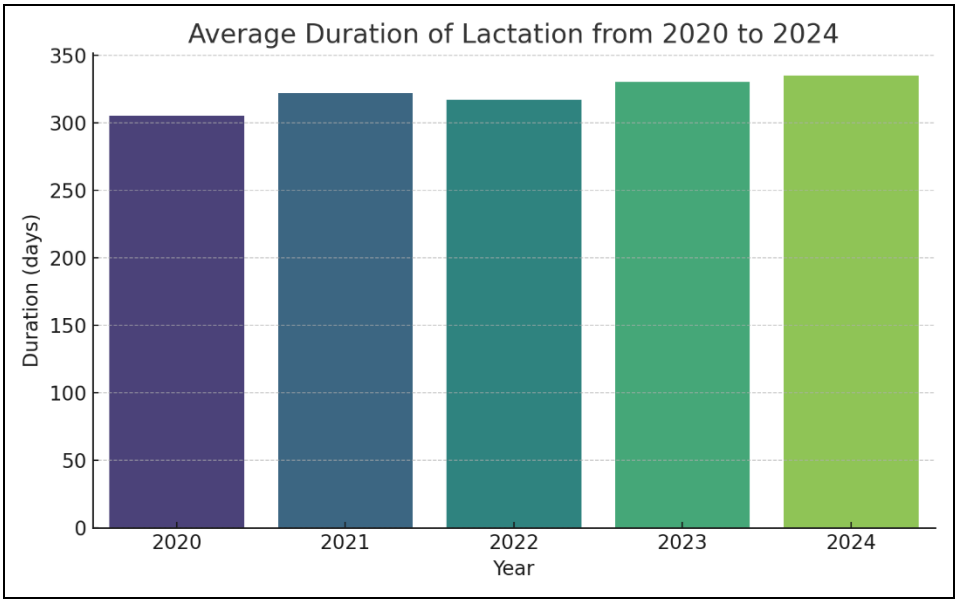


Figure 1 illustrates the increasing trend in both normal and total milk yields. Notably, the gap between the two curves widens over time, confirming the farm's strategy to maximize milk extraction from high-persistence cows.

Fig.2 Average duration of lactation from 2020 to 2024



Lactation duration and productivity

As shown in Figure 2, the average duration of lactation also increased from 305 days in 2020 to 335 days in 2024. This gradual extension was accompanied by a sustained increase in total milk yield, indicating a positive correlation between lactation length and production volume.

However, it is important to emphasize that longer lactations do not always guarantee economic efficiency. The return on investment depends on the persistence of milk production beyond day 305. Cows with steep production decline after peak lactation may not justify extended milking.

Statistical interpretation

A Pearson correlation analysis between lactation duration and total milk yield resulted in a positive correlation coefficient ($r = 0.84$, $p < 0.05$), indicating a strong association. Additionally, the paired-sample t-test confirmed a statistically significant difference between normal and total lactation yields for each year ($p < 0.01$).

These results support the hypothesis that extended lactations, when properly managed, can enhance overall production efficiency, especially in cows with high persistency and without reproductive delays.

Discussion

Our findings are consistent with data published in the literature regarding Holstein-Friesian performance in semi-intensive systems. Similar trends have been observed in farms that use TMR strategies and digital herd monitoring to select and retain high-yielding animals. The farm's ability to maintain herd health, ensure timely calving intervals (~390 days), and reduce early culling contributed significantly to the productive consistency.

While prolonged lactation offers an opportunity to increase output, it must be strategically applied. Overuse without reproduction control may increase the calving interval and reduce lifetime productivity. Therefore, the decision to extend lactation must be individualized, considering the cow's physiological capacity, body condition score, and reproductive status.

Conclusions

The five-year study conducted at Pantelimon Farm has revealed significant insights into the productive dynamics of Holstein-Friesian cows under semi-intensive conditions. The consistent increase in both normal and total lactation yields reflects effective herd management, optimized nutrition, and reproductive efficiency. Key conclusions are as follows:

1. Extended lactation brings measurable benefits: Total lactation yields were on average 1,500–1,850 liters higher than normal lactation yields, representing a gain of 17–20%, justifying strategic prolongation of milking in persistent cows.
2. Lactation duration is positively correlated with milk yield: The average lactation length increased from 305 to 335 days, accompanied by corresponding increases in total milk production. A strong positive correlation ($r = 0.84$, $p < 0.05$) confirms the productive advantage of prolonged lactation under suitable conditions.
3. Yearly improvements suggest continuous progress in farm performance: The progressive rise in both types of yields suggests the successful implementation of data-driven practices and decision-making based on real-time monitoring.
4. Extended lactation must be individualized: While beneficial in many cases, longer lactations require careful management to avoid negative impacts on reproductive cycles or overall profitability.
5. Digital systems enhance production monitoring: The integration of automated milking, digital recording, and software analysis allowed precise performance evaluation, aiding in better selection and herd planning.

These results support the adoption of flexible lactation management strategies that account for both biological potential and economic return. Future research may focus on the reproductive implications of prolonged lactations and their impact on lifetime productivity.

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ASPECTS OF URINARY TRACT INFECTIONS IN DOGS AND CATS

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Abstract

Urinary tract infections in cats and dogs are commom conditions that mainly caused by bacteria that invaded the urinary sistem and cause discomfort and inflammation.

In this paper,we will examine the structure of the urinary system in dogs and cats,urinary tract infections in two species,and diagnostic and treatment modalities.

In dogs,infections are much more common than cats.

In felines,infections are rarer and are confused with non-infectious inflammatory conditions,but which can lead to serious complications,especially in cats.

Because of infections,diagnosis relies heavily on laboratory tests to ensure that there is a diagnosis of certainly.

Treatment will be carried out following a definitive diagnosis and the use antibiotics is most often recommended.

Keywords: *bacteria,antibiotics,diagnosis,analysis*

Introduction

Urinary tract infections in cats and dogs are a problem in veterinary medicine and affect the animals quality of life and can lead to serious complications if not treated in time.

The urinary system,which consists of the kidneys,bladder,urethra and ureters,has the role of eliminating waste from the body through urine.

Urinary tract infections affect all of these components,but the bladder and urethra are most affected.

One cause of infections is the introduction of bacteria into the urinary system and these can come from the external environment and reach the urinary tract through the urethra.

The urinary tract has mechanism to prevent the growth of bacteria,but sometimes these bactereia manage to multiply and cause infections.

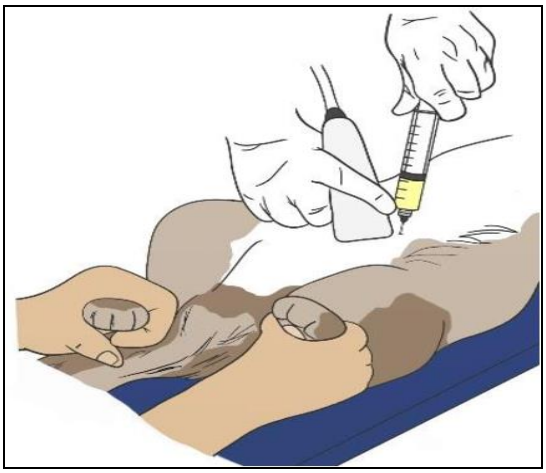
Dogs are more often affected by infections than cats.

Materials and working methods

The medical study was conducted on a 1 year old female cat and 6 year old male dog to diagnose whether they had bacteriuria.

Urinalysis is a simple test that is used to assess the health of the urinary system and kidneys.

The reference method for collecting urine was cystocentesis,which is done with a syringe and a fine needle.The needle penetrates through the abdominal wall into the bladder,and urine will be aspirated directly into the syringe.The urine will be sent to the analysis laboratory in a disporable container that is used for its collection.



Results and discussion

The results obtained from the analysis reports indicated that bacterial flora did not develop on the culture media.

Determination of chemical parameters including

leukocytes,proteins,glucose,ketone bodies showed a negative result.

Volume,color and claeity are within normal limits.

The animals Ph was within nomal limits,by Ph can vary depending on diet.

It is a good idea for the veterinarian to recommend special food to owners to keep the animals Ph within normal limits.

URINE SAMPLE	RESULTS	UM	REFERENCE RANGE
VOLUME	5	ML	
COLOR	YELLOW		YELLOW
CLARITY	SLIGHTLY CLOUDY		CLEAR
PH	7		6-7.5
LEUKOCYTE	NEGATIVE	LEU/UL	NEGATIVE
PROTEIN	NEGATIVE	MG/DL	NEGATIVE
GLUCOSE	NEGATIVE	MG/DL	NEGATIVE
KETONE BODIES	NEGATIVE	MG/DL	NEGATIVE

Conclusion

It is recommended that owners take their pets to the vet at least once a year to have a urinalysis done and to monitor their health.

For animals that have urinary problems,urine tests should be done more frequently,sometimes even monthly,but this depends on how serious the condition is.

Another important aspect is animal feed that ensures low urinary Ph and low levels of magnesium and calcium.

It is important that animals consume adequate water to prevent urine stagnation.

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STUDY ON THE ANTINEOPLASTIC POTENTIAL OF CANNABIDIOL BY INDUCING APOPTOSIS

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Abstract

Cannabidiol (CBD), the main non-psychoactive compound in Cannabis sativa, is known for its anti-inflammatory, antioxidant, and pro-apoptotic properties. This article presents the results of a study that aimed to evaluate the antineoplastic effect of CBD by quantifying the induction of apoptosis in tumor cells derived from RS-1 murine hepatoma originating from laboratory animals treated per os, sublingually, with a 20% CBD oil suspension at a dose of 60 mg/kg at 24-hour intervals. Thus, by flow cytometry with Annexin V/PI, a significant increase in apoptosis was observed 14 days after treatment (22.35%). The results indicate a potential antitumor effect of CBD, manifested by the induction of programmed cell death in the experimental hepatoma.

Keywords*: hepatoma RS1, Canabidiol, tumour cell, apoptosis*

Introduction

Cannabidiol (CBD) is one of the main phytocannabinoids extracted from Cannabis sativa, along with tetrahydrocannabinol (THC), but unlike tetrahydrocannabinol (THC), CBD does not exhibit psychoactive effects, making it a promising candidate for medical applications. It was first isolated in 1940, and its chemical structure was determined by Mechoulam and Shvo in 1963 in the classic paper *Hashish-I: The structure of cannabidiol (*Mechoulam & Shvo, 1963). This marked the beginning of a new direction in cannabinoid pharmacology.

The therapeutic use of cannabis has a long history, being documented in sources from ancient China, Egypt and India, where the plant was used to relieve pain, inflammation and neurological disorders. The re-emergence of modern research on cannabinoids has been highlighted by

Zuardi (2006) in the paper *History of cannabis as a medicine*, which emphasizes the evolution of CBD from a historical compound to a molecule of major biomedical interest (Zuardi, 2006).

Pharmacologically, CBD exerts a wide range of effects through polymodal interactions, without directly binding with high affinity to CB1 and CB2 receptors. Instead, it acts on TRPV1 ion channels, 5-HT1A, PPARγ and GPR55 receptors, thereby influencing processes of inflammation, oxidative stress, neurotransmission and apoptosis. These molecular mechanisms were reviewed by Ibeas Bih and co-workers in the article *Molecular targets of cannabidiol in neurological disorders* (Ibeas Bih et al., 2015).

CBD has been approved in the US and Europe in the form of Epidiolex® for the treatment of rare forms of epilepsy, but its applications extend far beyond the field of neurology. Preclinical research has demonstrated CBD's ability to modulate the immune response, reduce neoplastic cell proliferation, and induce programmed cell death in various tumor lines. In the article *Cannabidiol as potential anticancer drug*, the authors detail these effects in models of breast cancer, glioblastoma and cholangiocarcinoma (Massi et al., 2013).

In the context of hepatocarcinoma, one of the most aggressive forms of liver cancer, CBD has been studied for its potential to reduce the expression of proliferation markers (e.g. Ki-67) and to activate apoptotic pathways through oxidative stress and caspase activation. A relevant example is the study by Moreira, *Cannabidiol inhibits liver tumor growth in a murine model of hepatocellular carcinoma*, publishing in Frontiers in Pharmacology, demonstrating inhibition of liver tumor growth by multiple cellular mechanisms (Moreira et al., 2021).

However, the therapeutic use of CBD is not without risks. Oral administration has been associated with increases in liver enzymes (AST, ALT), bilirubin, and histologic changes including edema and centrilobular hypertrophy. Ewing and coworkers documented these effects in the paper *Hepatotoxicity of a cannabidiol-rich cannabis extract in the mouse model*, showing that toxicity is dose-dependent and duration of exposure (Ewing et al., 2019). Furthermore, the Phase I clinical trial by Watkins showed hepatotoxicity even among healthy adults untreated with other concomitant drugs (Watkins et al., 2021).

In parallel, discussions on CBD regulation are still active, with considerable legislative variation between countries. While some countries authorize the use of cannabidiol for controlled medical purposes, others restrict the use of products containing high concentrations of cannabinoids, citing a lack of robust clinical studies on long-term safety.

Therefore, exploring the anti-tumor effects of cannabidiol on hepatoma, with a focus on molecular markers of apoptosis is not only scientifically justified but also topical, with major clinical implications for the future of personalized cancer therapy.

Material And Methods

The study was conducted on a murine RS-1 hepatoma model induced in laboratory animals. Tumors were developed by subcutaneous inoculation with a suspension of viable cells from the murine RS-1 hepatoma line, in accordance with standard protocols for the induction of experimental tumour.

After confirmation of tumor development (palpable/measurable), the animals were divided into two experimental groups:

- Control group (control) - tumor-bearing, untreated;
- Treated group - tumor-bearing, treated with CBD.

Animals in the treated group received CBD at a dose of 6 mg/100 g body weight (equivalent to 60 mg/kg), administered orally, sublingually, at 24-hour intervals for 3 weeks. The administrations were performed in a volume adjusted to individual body weight, using a volumetrically controlled, homogenized oil suspension.

Tumor samples were collected weekly, starting on day 7 until the end of the treatment period (week 3). The animals were euthanized in accordance with ethical regulations and the protocol approved by the bioethics committee, and the excised tumors were processed for flow cytometric analysis.

The FITC Annexin V Apoptosis Detection Kit I (BD Pharmingen, code 556547) was used to identify apoptotic cells. This kit allows the detection of phosphatidylserine exposed on the surface of early apoptotic cells using FITC-Annexin V fluorescent conjugates in combination with propidium iodide (PI).

Experimental protocol: the excised biopsy fragments were mechanically and enzymatically dissociated into cell suspensions; the cells were washed in cold PBS, resuspended at 1×10^{6} cells/ml in 1X binding buffer; 100 µl of suspension were incubated with 5 µl FITC-Annexin V and 5 µl PI, for 15 min in the dark at room temperature; 400 µl of 1X binding buffer was added, and the samples were analyzed within 1 hour by flow cytometry.

Controls included: unstained cells; FITC Annexin V-labeled cells only; PI-labeled cells only; positive control (5 µM camptothecin, 6 hours).

Results and Discussions

Apoptosis, also known as programmed cell death, is a fundamental mechanism of tissue homeostasis, ensuring the elimination of abnormal, aged, or damaged cells without generating an inflammatory response. In the context of oncology, the disruption of this process contributes significantly to the development and progression of malignant tumors, allowing neoplastic cells to avoid death and proliferate uncontrollably (Massi et al., 2013). Thus, the ability of a therapy to reactivate apoptotic pathways in cancer cells is considered an essential criterion for its therapeutic efficacy.

The induction of apoptosis in tumor cells has a dual strategic value: on the one hand, it promotes tumor regression by eliminating malignant cells resistant to other forms of cell death; on the other hand, it limits systemic adverse effects by preserving healthy cells that possess intact self-regulatory mechanisms (Solinas et al., 2020). Consequently, exploring the molecular pathways involved in the initiation, regulation, and execution of apoptosis is a priority in oncological research, both in human and veterinary medicine.

Studying therapeutic agents with pro-apoptotic potential—from classic chemotherapeutics to natural compounds or targeted molecules—opens up new perspectives for personalized, safer, and more effective treatments. The selective induction of apoptosis in tumor cells is not only a promising strategy but also a therapeutic ideal that underpins the transition to modern oncology, centered on cellular and molecular mechanisms (Moreno et al., 2018).

The results obtained in this study indicate a significant difference in the proportion of cells undergoing apoptosis between animals treated with cannabidiol (CBD) and control groups, highlighting the pro-apoptotic potential of CBD in the context of experimental neoplasia. The temporal progression of the apoptotic effect—with values of 3.43% at 7 days (Fig. 1), 22.35% at 14 days (Fig. 2), and 10.76% at 21 days (Fig. 3) - suggests robust initial antitumor activity, followed by a possible attenuation of therapeutic efficacy in later phases.

This phenomenon of a decrease in the proportion of apoptotic cells after 21 days of treatment can be interpreted as a tumor adaptive mechanism. Specifically, the early death of CBD-sensitive cells may lead to the selection of resistant tumor subclones that develop mechanisms to avoid apoptosis. Such mechanisms may include overexpression of anti-apoptotic proteins (such as Bcl-2), alteration of cannabinoid receptor expression, or activation of alternative cell survival pathways (PI3K/AKT, MAPK). The current literature supports the hypothesis that acquired resistance to pro-

apoptotic compounds can occur even in the absence of continuous selective pressure if cell subpopulations have pre-existing functional heterogeneity (Massi et al., 2013; Solinas et al., 2020).

On the other hand, the relatively high level of apoptosis in the control groups can be attributed to hypoxia and central necrosis frequently found in

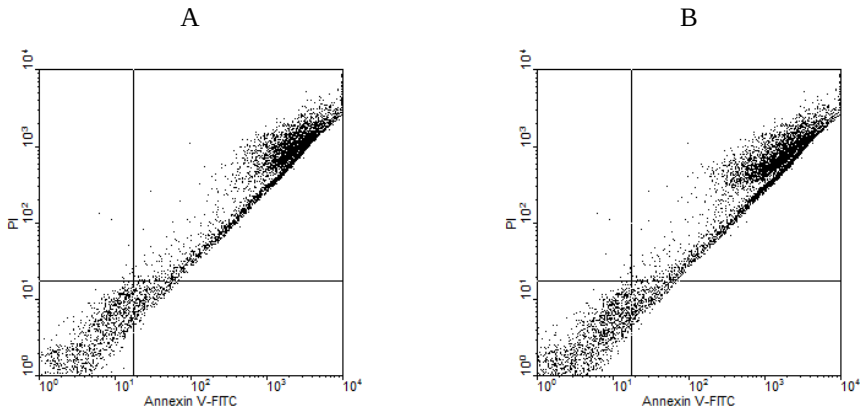

Fig. 1 - Analysis of apoptosis by flow cytometry (dot plot graph): (A) RS-1 tumor cells from untreated animals (control) vs (B) RS-1 tumor cells after 7 days of treatment with CBD; 3.43% apoptotic cells

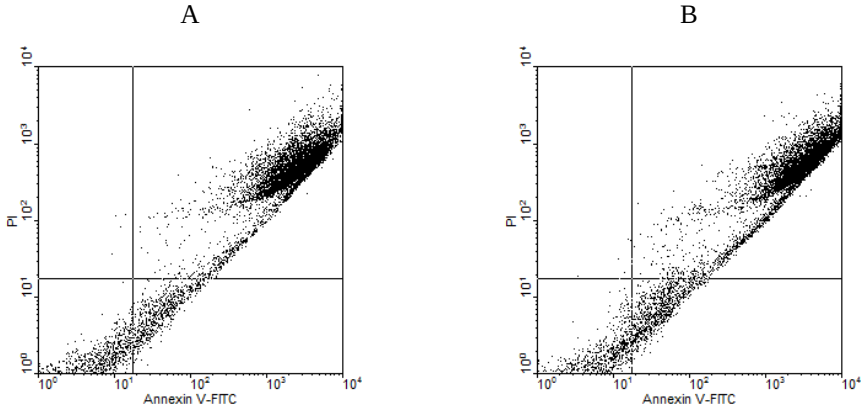

Fig. 2 - Analysis of apoptosis by flow cytometry (dot plot graph): (A) RS-1 tumor cells from untreated animals (control) vs (B) RS-1 tumor cells after 14 days of treatment with CBD; 22.35% apoptotic cells

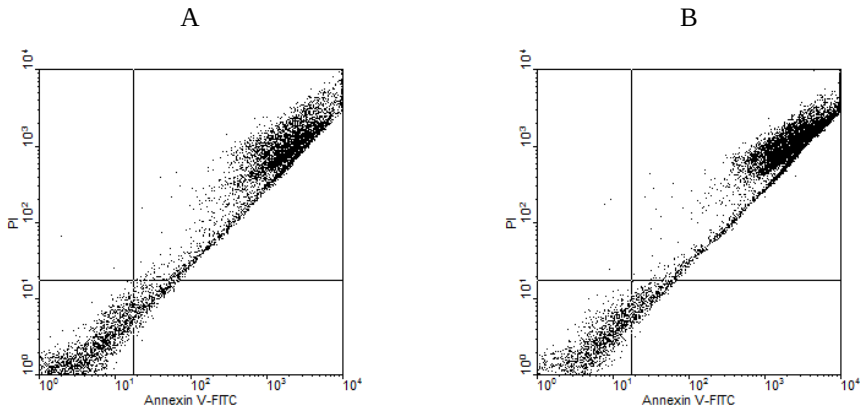

Fig. 3 - Analysis of apoptosis by flow cytometry (dot plot graph): (A) RS-1 tumor cells from untreated animals (control) vs (B) RS-1 tumor cells after 21 days of treatment with CBD; 10.76% apoptotic cells

large tumors. Hypoxic areas induce severe oxidative stress and disturbances in mitochondrial metabolism, which can trigger intrinsic apoptosis independently of therapeutic intervention. In addition, in the absence of treatment, rapid tumor progression leads to imbalances between vascular supply and metabolic demands, favoring the emergence of microenvironments hostile to tumor cells, incompatible with their survival.

Comparing the two situations, it can be seen that spontaneous apoptosis in untreated tumors is most likely the result of microvascular and metabolic collapse, while CBD-induced apoptosis appears to be the result of direct activation of controlled apoptotic pathways, possible through interaction with CB2 and GPR55 receptors, as suggested in other experimental models (Moreno et al., 2018). This differentiation has major therapeutic significance, as pharmacologically directed apoptosis can be used for selective control of tumor cells, reducing the impact on healthy cells.

Overall, the data obtained support the pro-apoptotic activity of CBD, but also highlight the limitations of chronic monotherapy, which can lead to tumor adaptation. This underscores the need to explore combined therapeutic strategies designed to prevent the development of resistance and maximize long-term antitumor effect.

Conclusions

1. Cannabidiol (CBD) is an active substance extracted from the *Cannabis sativa* plant, currently being intensively studied for its numerous pharmacological actions, including antitumor activity.

2. The murine hepatoma RS1 is a valuable experimental tool for oncological research, both for studying the processes involved in tumor progression and for testing therapeutic treatments in dynamics.

3. The results obtained suggest that CBD has the ability to induce apoptosis in tumor cells, with a maximum effect observed around the 14th day of treatment.

4. This study demonstrates the potential of cannabidiol as a therapeutic agent in cancer treatment, highlighting the need to optimize its administration.

5. Cannabidiol could be a valuable adjuvant option in cancer therapy, provided that its administration is well timed and adapted to the cellular response.

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LABORATORY INVESTIGATIONS PERFORMED ON SUCKLING PIGLETS RAISED IN SUBSITENCE HOUSEHOLDS HOLDINGS

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Abstract

This paper presents a field-based veterinary microbiology study focused on suckling piglets raised in traditional Romanian backyard farms. The objective was to identify major neonatal bacterial pathogens and evaluate practical diagnostic approaches applicable in low-resource settings. The investigation targeted three key pathogens: enteropathogenic Escherichia coli (ETEC), Salmonella spp., and Streptococcus suis. Samples were processed using selective culture media, followed by biochemical identification and antibiotic susceptibility testing via Kirby–Bauer disk diffusion.Results revealed a high prevalence of E. coli infections (detected in 60% of samples),followed by clostridium perfringens. (24%) and S. suis (16%). Antimicrobial susceptibility profiles indicated widespread resistance to ampicillin and tetracycline, especially among enteric isolates. The integration of clinical signs with laboratory findings allowed for the development of practical recommendations: improving hygiene and housing conditions, implementing targeted vaccination programs for sows (particularly against E. coli fimbriae F4 and F5), promoting antibiotic stewardship based on antibiograms, and reinforcing on-farm biosecurity.The study emphasizes the essential role of accessible and accurate laboratory diagnostics in guiding treatment decisions, reducing neonatal piglet mortality, and controlling infectious diseases in small-scale pig farming systems.

Keywords: *suckling piglets,laboratory investigations,infectious diseases*

Introduction

In Romania, pig farming is more than just a common activity—it holds a special significance due to its connection with one of the most important holidays of the year. It's almost unthinkable to celebrate Christmas without having pork dishes on the table; for those who value tradition, the slaughtering of the pig around this time of year is a true ritual.

Beyond its traditional aspect, pig farming is also a profitable venture, considering that pigs are the only animals from which nothing goes to waste after slaughter. However, until the time of slaughter, pigs require proper

feeding, shelter, and a great deal of attention. In this article, we offer you some key guidelines for taking care of them.

Objectives

- In-depth evaluation of the physiological, metabolic, and immunological status of suckling piglets, aimed at identifying imbalances and their underlying causes that may negatively affect development and health status.
- Formulation of practical recommendations for field veterinary medicine.
- Establishment of early diagnostic protocols.
- Development of effective prevention, nutrition, and treatment strategies with a direct impact on growth rate, viability, and productive performance of pig herds.

Methodology

The study was conducted on a total of **37 suckling piglets**, aged approximately **5 days**, originating from **three different household farms** located at distances of 13 km and 25 km from the diagnostic center.

Sample Collection

The biological samples collected included:

- **Blood** (for hematological examination)
- **Fecal samples** (bacteriological investigation)
- **Intestinal fragments and internal organs** (collected post-mortem)

The materials used for sample collection consisted of:

- Sterile test tubes containing anticoagulant for blood collection
- Sterile containers for fecal samples
- Sterile receptacles for organ and tissue collection during necropsy

Bacteriological Analysis

Bacterial isolation was performed using **selective culture media**. Intestinal content was inoculated onto:

- **MacConkey agar** for the isolation of *Escherichia coli*
- **Blood agar** for the detection of *Clostridium perfringens*

Intestinal culture remains the gold standard for identifying enterotoxigenic *E. coli* (ETEC) and *C. perfringens*. After incubation, colonies were subjected to:

- **Biochemical identification**
- **Toxin typing** (where applicable)
- **Antimicrobial susceptibility testing (antibiogram)**

Hematological Examination

Complete blood counts (CBC) were performed to evaluate general physiological and immune status. Parameters assessed included leukocyte formula, erythrocyte indices, and platelet count.

Bacteriological Results

- **Escherichia coli**: Enteropathogenic *E. coli* (EPEC) was identified in **60%** of the cases.
- Further results (e.g., presence of *C. perfringens*, antibiotic resistance profiles, toxin genes) should be detailed here if available.

Conclusions and Practical Recommendations

Early Diagnosis and Monitoring

The identification of enteropathogenic *E. coli* in 60% of investigated cases underlines the importance of **early microbiological screening**, especially in suckling piglets exhibiting nonspecific clinical signs such as diarrhea, dehydration, or growth retardation. Routine hematological profiling may also aid in detecting early deviations from normal

physiological parameters, serving as a valuable tool in the **preclinical diagnosis** of systemic or localized infections.

To facilitate **early intervention**, it is recommended that:

- Farms implement periodic fecal sampling and basic hematological monitoring during the first 2–3 weeks of life.
- Veterinary practitioners develop simple, field-adaptable screening protocols for high-risk piglets.

Nutritional and Preventive Strategies

A significant proportion of the observed imbalances may be linked not only to infectious agents but also to **nutritional deficiencies** and **poor colostrum intake**, which compromise passive immunity. Based on the findings, the following strategies are advised:

- Ensure **timely and sufficient colostrum intake** within the first 6 hours of life.
- Supplement sows' diets with **essential trace elements** (e.g., iron, selenium, zinc) and **vitamins** during late gestation to improve colostrum quality.
- Introduce **probiotics and prebiotics** in neonatal feeding protocols to support intestinal microbiota and enhance local immunity.

Therapeutic Interventions

In light of the bacteriological findings, particularly the frequent isolation of *E. coli*, the following therapeutic measures are recommended:

- Use of **narrow-spectrum antimicrobials** based on antibiogram results, to minimize resistance development.
- Consideration of **antitoxin therapies** or **bacteriophage-based treatments** where available.
- Application of **supportive therapy**, including electrolyte solutions and anti-inflammatory agents, to maintain hydration and reduce intestinal inflammation.

Impact on Growth and Viability

Implementing these combined strategies is expected to have a **direct and measurable impact** on:

- Daily weight gain
- Survival rates in early postnatal life
- Long-term productivity and feed conversion efficiency

The integration of **early diagnostics, targeted therapy, and preventive nutrition** can significantly reduce pre-weaning morbidity and mortality, ultimately contributing to improved animal welfare and economic efficiency in small-scale pig farming systems.

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