

**TESTING THE EFFICACY OF IVERMECTIN 2% (ORAL PASTE)
BY FECRT METHOD IN HORSES FROM TIMIȘ COUNTY**

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Summary

The development of chemoresistance (an inherited trait of larvae from adult parasites) in the cyathostomin population to one or more antiparasitic substances is a highly topical issue. A very good method for identifying chemoresistance is the faecal egg count reduction test (FECRT), a cheap but effective method, which is also considered the gold-standard. This method is based on the results (number of eggs) obtained before (day 0) and after treatment (day 14), in the same horses. The objective of this study was to establish the efficacy of ivermectin 2% in horses from several cities from Timiș County. Fresh faecal samples were taken from 75 horses (five cities) from Timiș County, only horses that had several eggs per gram of faeces (EPG) greater than or equal to 200 were selected. Larval cultures were also taken to identify cyathostomins and large strongyles. 55 horses were tested for the effectiveness of ivermectin 2% and 20 horses had EPG<200 and were excluded from testing. Before the treatment larvae of *Strongylus vulgaris* (23.63%) in 13 horses and larvae of the subfamily *Cyathostominae* (100%) in all 55 horses, with different percentages for types A, B, C, D, F and *Gyalocephalus capitatus* were identified. After treatment only cyathostomins larvae type A and D were identified in 1 group of horses. In 55 horses administered ivermectin 2% (oral paste, 20mg/100 kg body weight, single dose) it was observed that both individually and in groups, the antiparasitic substance showed efficacy (>95%).

Keywords: cyathostomins, chemoresistance, ivermectin, horses.

THERAPEUTIC INDICATIONS AND TECHNICAL FEATURES IN PERITONEAL DIALYSIS IN CATS

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Summary

The most important indication for peritoneal dialysis in dogs and cats is anuria caused by acute kidney injury (AKI) refractory to fluid therapy. Dialysis is also indicated in patients with severe acute non-anuric uremia, in whom the blood urea nitrogen (BUN) exceeds 100 mg/dl or in whom the creatinine level is greater than 10 mg/dL. Peritoneal dialysis is also indicated in case of increased levels of creatinine and urea, hyperkalemia, hyperphosphatemia, hypercalcemia or metabolic acidosis, when they do not yield to other treatments. Peritoneal dialysis is contraindicated in patients with peritoneal adhesions, fibrosis, malignant tumors and pleuroperitonitis. The presence of adhesions and fibrosis reduces the surface area and efficiency of peritoneal dialysis. Patients with a severe hypercatabolic status may experience complications due to massive protein loss correlated with the duration of peritoneal dialysis. The 2 types of peritoneal dialysis practiced in cats are continuous peritoneal dialysis and intermittent peritoneal dialysis. The ideal catheter for peritoneal dialysis allows the adequate administration and evacuation of the dialysate, causes minimal subcutaneous losses, minimizes infection, both in the peritoneal cavity and in the subcutaneous tissue. The specific composition of the dialysate is an important factor to consider when performing peritoneal dialysis. Dialysate solutions differ based on the buffer component, electrolytes and/or osmotic agents used. The ideal peritoneal dialysis solution should achieve low-absorption clearance of osmotic agents, supply deficient electrolytes and nutrients, correct acid-base problems, inhibit microbial growth, and be inert to the peritoneum.

Keywords: indications, technics, peritoneal dialysis, cats.

RESEARCH ON THE EFFECT OF BIOLOGICAL EXTRACTS IN THE TREATMENT OF ALLERGIC DERMATITIS IN DOGS

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Summary

Recently, in a previous study regarding the *in vitro* antibacterial efficacy of plants from the Fabaceae family, we reported high antibacterial efficacy especially on *Escherichia coli*, *Salmonella typhimurium*, *Pseudomonas aeruginosa* and *Streptococcus pyogenes* stains. This study was therefore, designed to test the *in vivo* efficacy of two plants belonging to the Fabaceae family, namely *Robinia pseudoacacia* and *Melilotus officinalis*. A number of 30 dogs, diagnosed with atopic dermatitis, were chosen to test the antibacterial effect of the extracts. The efficacy of the extracts was monitored by evaluating the total germ count and total staphylococci isolated from the skin. After testing the *M. officinalis* and *R. pseudoacacia* extracts, a decrease in the microbial load was observed. In this sense, the extract of *R. pseudoacacia* had the strongest effect of reducing microorganisms, followed by the extract of *M. officinalis* and the extract obtained from the mixture of the two plants. Regarding the reduction of staphylococci, the *M. officinalis* extract had the strongest effect in reducing the bacterial load, followed by the mixture extract and the *R. pseudoacacia* extract. The study revealed that the plant extracts can reduce the bacterial load, however the reduction level was too low to be considered an effective antibacterial solution.

Keywords: *Melilotus officinalis*; *Robinia pseudoacacia*; microbiological activity.

**PRELIMINARY RESEARCH ON THE ECONOMIC ADVANTAGES
AND DISADVANTAGES OF HYBRIDS DERIVED FROM THE
CROSSING OF TURCANA AND TSIGAI BREEDS**

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Summary

Due to the growing demand for meat on the market, breeders must find the easiest economic methods that they can implement in their farms. In sheep, one such method is the hybridization of compatible breeds and observing if this can be satisfactory. The study takes into account the *Turcana* and *Tsigai* breeds, respectively the comparison of the production indicators between the *Turcana* lambs and the *Turcana x Tsigai* hybrid lambs (f1). The study took into account 2 groups of lambs, 20 each, and the differences such as weight at calving and average daily gain were monitored. Among the first advantages observed, we can mention the higher weight of the hybrid lambs at calving as well as a higher average daily gain in the first weeks, and as disadvantages, we can mention the occurrence of dystocia at calving due to the large size of the hybrid lambs.

Keywords: lambs, average daily gain, hybrids, *Turcana*, *Tsigai*.

STUDY REGARDING ULTRASOUND AND RADIOGRAPHIC EXAMS RELEVANCE IN URETHRAL LITHIASIS IN DOG

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Summary

The pathology of the urinary tract in dogs take on different aspects, and urolithiasis represents one of the most frequent causes for being presented to the veterinary specialist. Urolithiasis refers to the development of uroliths along the urinary tract, which can be found in the kidneys, urethra, urinary bladder and/or urethra. The aim of this study was to describe the clinical signs and diagnostic imaging of urolithiasis in a group of dogs evaluated in the Faculty of Veterinary Medicine Bucharest. During the study there were examined 28 dogs, using general methods (inspection, palpation) and paraclinical exams (radiographic and ultrasound exams, urinary sediment), obtaining data regarding breed and age for every patient. Urolithiasis is the result of complex disorders at the level of the urinary tract, but also at the level of the whole body. In practice, a complete clinical evaluation is necessary in order to apply an appropriate therapeutic approach.

Keywords: radiography, urolithiasis, ultrasound, dog.

EFFECTS OF ACUPUNCTURE IN PATIENTS SUFFERING OF DEGENERATIVE MYELOPATHY – SYSTEMATIC REVIEW

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Summary

Acupuncture is one of the fifth branches of the Traditional Chinese Veterinary Medicine (TCVM) and it has been used in China since 3000 years ago. It is presumed that in the year 300 BC, it has been used on horses, by people called "Horse priests" at that time. The first official documentation of acupuncture in veterinary medicine was reported in 1971, in United States (USA), when Gene Bruno and John Ottaviano started to use acupuncture for treating horses and small animals. Nowadays, the benefits of acupuncture were forth in medical conditions such as: back pain, neck pain, osteoarthritis, headache, peripheral neuropathy, rheumatoid arthritis, tendinopathy and so on. In the veterinary community, the efficacy of acupuncture is still a controversial subject although the results from human medicine revealed beneficial data. The benefits of acupuncture are presented through their way of action, by choosing the key points on the patient's body and the insertion of the needles in the muscles stimulates the body to produce his natural healing substances, for example endorphins with the role of pain-relieving. The term "acupuncture" it generally covers a lot of subdivisions of its action, such as laser acupuncture, electroacupuncture, acupressure, all used to treat the pain and stimulate the body. Degenerative myelopathy (DM), is a common neuropathy in old canine patients, and it is found with predilection in German Shepherd dogs. DM affects the spinal cord and has many ways of manifestation, from patients without showing signs of pain, to patients that have neurological deficits of variable severity on the hind legs. Even though acupuncture is not considered the first option of therapy for these patients, there are some studies and data suggesting that using acupuncture or electroacupuncture alongside medical treatment, improved the functional recovery for patients suffering from neurological deficits. However further research and evidence is needed to conclude if acupuncture can be seen as a beneficial post-operative method in the veterinary field.

Keywords: acupuncture, electroacupuncture, German Shepherds, DM.

A COMPARATIVE STUDY REGARDING THE MICROSCOPIC AND CULTURAL MORPHOLOGY OF *BACILLUS ANTHRACIS*, *BACILLUS CEREUS* AND *BACILLUS MYCOIDES* SPECIES

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Summary

Bacillus anthracis, *Bacillus cereus* and *Bacillus mycoides* species show many biological similarities, especially of microscopic morphology and cultivability (2, 3, 4, 9). They belong to the genus *Bacillus*, family *Bacillaceae*, along with numerous other species (17). Contrary to the mentioned similarities, the high pathogenicity factors are found only in the *Bacillus anthracis* species. Because identification of the morpho-cultural pathogenic species can be confusing, it must be well evaluated. For this purpose, we analyzed the characteristics of the three microbes in the usual culture medium, but also in liver and blood (plasma separately as well, experimentally inoculated). We used the vaccine strain of *Bacillus anthracis* 1190-R (prof. Nicolae Stamatina) and two laboratory strains: *Bacillus cereus* and *Bacillus mycoides*. We followed the shape of bacteria, the size and appearance of their extremities, the association of bacteria in their own characteristics, the formation of species and their positioning and the capsulogenesis. We also noted down the characters of the pure cultures. The information we used from external sources can be found in the bibliographical reference.

Keywords: *B. anthracis*, *B. cereus*, *B. mycoides*, characteristics.

**CYTOPATHOLOGY AND HISTOPATHOLOGY IN DIAGNOSIS OF
MALIGNANT CUTANEOUS AND SUBCUTANEOUS
MESENCHYMAL NEOPLASMS IN DOGS – A REVIEW**

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Summary

Cutaneous and subcutaneous tumors have a high prevalence of 51% of all tumors in dogs, malignant mesenchymal (soft tissue) skin neoplasm representing about 20% to 40% of malignant tumors of the skin, as previously reported in recent studies. The aim of this present study is to summarise recent reported cytological and histopathological features of mesenchymal malignant cutaneous/subcutaneous tumors of dogs in order to give further aid for pathological differential diagnosis of these neoplasms. In case of canine skin pathology, mesenchymal neoplasms include malignant tumors of fibrous, adipose, vascular and perivascular tissues, smooth and striated muscle, nerve sheath, mesothelial and extra-skeletal chondro-osseous tumours. In addition, mast cell tumor, canine cutaneous histiocytoma and epitheliotropic lymphoma are included in malignant soft tissue tumors category, even some authors describe them as hematopoietic/lymphopoietic neoplasms. More prior studies have examined pathological findings of malignant soft tissue neoplasms affecting cutaneous and subcutaneous regions, mast cell tumor, histiocytoma, hemangiosarcoma being the most frequent malignant skin neoplasms noticed in canine skin pathology. Each malignant mesenchymal tumor in this study is classified in correlation with the third edition of International Histologic Classification of Tumors of Soft Tissues of Domestic Animals. After individually describing gross and microscopical aspects of the reviewed tumors, comparative cytopathological and histopathological findings are included in summary tables. Cytological and histological aspects may be useful to differentiate types of malignant soft tissue tumors, however, immunohistochemistry is required for identifying tumors subtypes.

Keywords: mesenchymal, tumors, skin, cytology, histopathology.

PREVALENCE OF *MICROSPORUM* SPP. IN FELINE POPULATIONS FROM A SHELTER IN WESTERN ROMANIA

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Summary

Dermatophytosis, a zoonotic disease caused by species of the *Microsporum* genus, continues to be an important subject in veterinary and human dermatology, due to its increased prevalence. In cats, *Microsporum* spp. causes a skin disease, characterized by circular, alopecic, crusty and erythematous lesions. However, it is well-known that many cats can act as asymptomatic carriers. The aim of this study was to evaluate the prevalence of *Microsporum* spp. among shelter cats, with or without suggestive clinical signs, to determine the extent to which this zoonotic disease is spread among the population of adoptable cats, which, in turn, will continue to spread it to their possible future owners, and to bring new insight into the epidemiology of the disease with the final scope of aiding the staff from shelters to properly apply prevention and treatment methods. The study was conducted on 40 cats from a shelter located in Băile Herculane, Caraș-Severin County, from January to May 2022. Hairs were collected from cats equally divided into two categories: cats with suggestive clinical signs (n=20) and asymptomatic cats (n=20). The hairs were transferred on dermatophyte specific culture media (DTM), followed by a microscopic exam of the resulting cultures in order to confirm the presence of *M.canis*. The results indicated a significant prevalence rate of this dermatophyte among the shelter cat population (48%), with no significant differences based on sex but with significant differences based on age (68% positivity in cats under the age of 1 year) as well as in cats displaying clinical signs (85% positivity) as compared to asymptomatic cats). This high prevalence rate leads to the conclusion that shelter cats represent a significant hazard in the spreading of this zoonotic disease, not only to other shelter cats, but also posing a risk for their future adoptive families and other household pets.

Keywords: *Microsporum* spp, shelter cats, asymptomatic, prevalence.

RESEARCH ON THE AEROBIC MICROBIOTA ISOLATED FROM THE HORSE NASAL CAVITY

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Summary

The research aimed to evaluate the aerobic microbiota in the nasal passages of horses with clinical signs and clinically healthy horses. The samples were collected from a number of 30 horses with clinical signs and clinically healthy horses, from the western part of Romania. The samples came from *Nonius*, *Romanian Half-Heavy*, *Ardennais*, *Purebred Arabian* and half-breed horses between the ages of 5 months and 9 years. From the 30 collected samples, 49 bacterial strains were isolated and identified, distributed as follows: *Streptococcus equi* subsp *zooepidemicus* 21 strains, *Staphylococcus* sp. 23 strains, *Pasteurella* sp 2 strains, *Proteus* and *E. coli* one strain each. The staphylococcal strains isolated were 100% sensitive to the following antibiotics: ampicillin/sulbactam, novobiocin, ceftriaxone, ceftiofur, cefaclor, rifampicin and ciprofloxacin, and to tetracycline and doxycycline the staphylococcal strains showed increased resistance. *Streptococcus equi* subsp *zooepidemicus* strains were 100% sensitive to the following antibiotics: ampicillin/sulbactam, ceftriaxone, ceftiofur, cefaclor, ciprofloxacin, rifampicin, methicillin, novobiocin, vancomycin and resistant to lincomycin and polymyxin.

Keywords: *Streptococcus equi* subsp *zooepidemicus*, *Staphylococcus aureus*.

DETERMINATION METHODS OF CORTISOL LEVELS IN DOGS- OVERVIEW

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Summary

Cortisol is quantitatively the major glucocorticoid product of the adrenal cortex. Cortisol is often used as a stress indicator in animal behaviour research. This hormone can be measured using several different mediums like blood, saliva, urine, hair and even nail clippings. These parameters provide an acute, time-point measurement of cortisol concentration. When using invasive methods such as blood sampling, the measured cortisol concentration can be affected by several factors, such as circadian rhythms, handling, restraint, and degree of habituation or acclimation. In practical medicine, the aim of determining cortisol levels dictates the method used by the practitioner. In recent years, this hormone was up to debate whether measuring its levels can truly be an objective method of determining stress. Investigations in many species often rely exclusively on non-invasive sampling methods, because commonly applied analyses using plasma would be either not possible or simply inappropriate because their high invasiveness can cause stress responses. Initially principally measured in blood, cortisol measurement methods are now evolving towards lower invasiveness and allowing repeated measurements over time. In the case of small animals, especially dogs, in practical medicine, cortisol is often used as an indicator of hormonal diseases and salivary cortisol has been mainly used as a measure of the stress response, because saliva collection is less invasive than blood sampling, resting cortisol concentrations are routinely measured in dogs with chronic gastrointestinal signs to rule out hypoadrenocorticism.

Keywords: cortisol, stress, method, dog.

OPTIMIZATION OF GENETIC DIAGNOSIS IN FELINE POLYCYSTIC KIDNEY DISEASE

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Summary

According to the data from the specialized literature, the usefulness of such tests in the certainty diagnosis of ADPKD is unanimously accepted, being the only ones capable of highlighting the diagnosis from birth (even intrauterine, although in practice such tests have not been performed) . Similar to the ultrasonographic examination, this investigative method is also extremely permissive in the sense that an extremely wide range of biological matrices can be analyzed, including gingival swabs, which makes the testing minimally invasive for the patient. Furthermore, sampling can be done by the owner himself, with minimal stress on the patient. Genetic testing was performed on 11 blood samples from individuals from susceptible breeds, following the protocol by genomic DNA extraction and point mutation identification by the Real Time PCR technique coupled with HRM. The results obtained show a uniform amplification of the analyzed samples, as well as the identification of individuals carrying the mutation, alongside individuals free of the mutation. According to the results obtained, the technique chosen for the extraction of the genetic material proved to be one suitable for the purpose, being able to extract the genetic material from samples considered to be difficult (whole blood).

Keywords: PCR, PKD, genetic diagnosis, cats.

MANAGEMENT OF WHITE CLOVER PASTURE IMPACTING BOTH ANIMALS AND THE ECOSYSTEM

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Summary

The purpose of this paper was to analyze retrospectively the physiological requirements of white clover in order to have a culture that can be used for the benefits of clover in terms of nitrogen fixation in the soil and CO₂ reduction in the air, responsible for the transformation of this into animal feed, thus having a double use. White clover swards are highly nutritious for both cattle and sheep which results in improved intakes and animal performance. Clover pastures fit well into forage or arable rotations and thus have a positive impact on soil fertility and structure. Ruminants have evolved to eat and utilize the nutrients in forage. However, methane emissions from livestock increase as forage quality reduce. Clover species are also important for providing honeybee forage and white clover is a major nectar flow for beekeepers. White clover can play an integral role in intensive grazing systems in terms of animal performance and herbage production. White clover (*Trifolium repens* L.), a species of plant in the Fabaceae family, is grown in diverse environments and is distributed in temperate and subtropical regions of the northern and southern hemispheres. Due to the high content of crude protein, white clover is widely grown as a fodder crop of legumes. White clover is often included in the perennial pastures of ryegrass (*Lolium perenne* L.). This mixed system is considered to be a high-quality feed, while improving the fertility of the soil, since legumes can fix atmospheric nitrogen with symbiotic bacteria. White clover is very demanding on the water factor. However, the content and persistence of white clover are often irregular both during years and over the years and between cultivated land on the same farm.

Keywords: white clover, animals, management, CO₂.

SOME ANATOMOPATHOLOGICAL LESIONS OF *PASTEURELLA* INFECTIONS IN RABBITS

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Summary

The paper presents the results of the necropsy examinations that were made on a total of 37 dead rabbits, with pasteurellosis as the cause of death, from 7 locations, females and males, of different ages. Most of the rabbits presented specific signs of pasteurellosis before death, symptoms such as sneezing, ocular secretions, and whitish nasal. Some of the rabbits presented subcutaneous abscesses, the most frequent locations of abscesses were in the head, neck, and limbs, both in the thoracic and pelvic limbs. Abscesses on the nipple chain, otitis, torticollis, and dental infection were observed, but with a lower frequency. At the necropsy examination characteristic lesions of pasteurellosis were highlighted, lesions such as active pulmonary congestion and fibrinous pleurisy, pyometra, abscesses on the lungs, hydrothorax, pyothorax, peritonitis, and abscesses. The histopathological examination revealed massive interstitial leukocyte infiltrations and the presence of abundant fibrin deposits at the tissue level. The diagnosis was confirmed by a bacteriological examination.

Keywords: *Pasteurella*, rabbits, lesions, abscesses, histopathological.

STUDY REGARDING THE IMPORTANCE OF COLOSTRAL FEEDING IN NEW BORN CALVES

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Summary

At the moment of parturition, the calf makes contact for the first time with the new environment, being subjected to a continuous adaptation of the organism. Due to the fact that it does not have a well-developed immune system, in order to defend the body against infectious agents, it is very sensitive to diseases and prone to stressful factors, including the possibilities of proper feeding. Therefore, the main issues that must be considered are the administration of quality colostrum and the optimal passive transfer of immunity from mother to newborn. Colostrum is the first food to which the newborn has access, being considered indispensable for its optimal growth and development. Calves are born with a deficiency in vitamin A at the hepatic level and a major immune deficiency, because at the placental level, during intrauterine development, immunoglobulins and essential vitamins cannot cross the barrier. The properties of colostrum are due to its rich content in IgG₁ and IgM immunoglobulins. In addition to the role of immune protection, colostrum also contains a series of non-specific antimicrobial factors: lysozyme, lactoferrin, lactoperoxidase/ thiocyanate/ hydrogen/ peroxide, xanthine oxidase, vitamin A, B12 and folic acid. Another important characteristic is the absorption capacity at the intestinal level compared to the immunized components and its dynamics. Thus, intestinal permeability is limited in time, being maximum in the first 6 hours of life, then gradually decreasing. Failure to comply with this short period of time can cause hypimmunoglobulinemia, severe disease and high percentage of cattle mortality.

Keywords: cattle, colostrum, feeding.

EPIDEMIOLOGICAL RESEARCH REGARDING THE EVOLUTION OF TRICHINELLOSIS IN MARAMUREȘ COUNTY (ROMANIA)

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Summary

Trichinellosis is a non-contagious, cosmopolitan parasitosis, found in several species of mammals and in humans, produced by nematodes that are part of the *Trichinellidae* family. Human trichinellosis in Romania is a zoonosis with a high incidence, with the consumption of uncontrolled pork and game being incriminated as the leading cause of human infection. The aim of the present study was to evaluate the evolution of *Trichinella* spp. infestation in wild boars from Maramureș County during 2017-2021. The study was carried out through the collaboration between the Faculty of Veterinary Medicine Timisoara and the Sanitary Veterinary and Food Safety Directorate from Baia Mare. The epidemiological data collected in the period 2017-2021 have been processed. The muscle samples from the boar have been examined by direct trichinelloscopy and artificial digestion. In 2020 highest number of positive cases was recorded from the total of muscle samples examined (7.29%), compared to the year 2021 in which the prevalence of trichinellosis in wild boar was 0. Concluding, the surveillance and control of *Trichinella* infection in wild boars must be maintained and promoted.

BONE MARROW CORE SAMPLES. COMPARATIVE STUDY BETWEEN ILIAC AND HUMERAL BIOPSIES IN DOGS

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Summary

Bone marrow evaluation in veterinary medicine is less used due to the high costs, but also due to the need of special knowledge and specific techniques. The literature in the field points out the importance of evaluating the bone marrow, showing its implications both in the field of internal medicine and oncology, but also in the field of infectious diseases and parasitology. The purpose of this study is to determine if there are differences between bone marrow samples collected from the iliac site and humeral site. The specimens were collected from 14 dogs shortly after death using a 13 G Jamshidi needle. Samples were collected from the dorsal iliac crest and from the great tubercle of the humerus from each dog. The histopathological assessment was done using the parameters proposed by Abrams Ogg et al. in 2012, thus, each biopsy received a quality score based on the number of intra-trabecular spaces free of artifact. Other parameters taken in consideration were the cell density, megakaryocyte density and the presence or absence of iron stores. Results show that the iliac biopsies had a better-quality score (mean score – 2.85) compared to the humeral biopsies (2.07). 12/28 biopsies had an acceptable score, with 9/12 being collected from the iliac site. In most of the samples (11/14), there were no significant differences between the iliac and humeral samples. Major differences were recorded in 3/14 cases involving the megakaryocyte density. Differences were correlated with a lower biopsy score. There were no significant differences regarding the cell density and iron stores. High quality samples are essential for an accurate evaluation of the bone marrow. Although the iliac samples were of higher quality, humeral biopsy remains a preferred site, being more accessible, especially in small animals considering the sizes of the biopsy needles, which are designed for human use.

Keywords: bone marrow, core biopsy, histopathology, veterinary hematology.

**ECHOSTRUCTURE AND ECHOANATOMY DATA OF
ULTRASONOGRAPHIC EXAMINATION IN ALPACAS
(VICUGNA PACOS)**

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Summary

The ultrasound examination, due to the relevance of the information obtained regarding the topography, size/volume, echostructure and echogenicity of the examined structures, is among the most accessible imaging diagnostic methods in field conditions in animals. Due to the increase in popularity of this species in Romania in the last decade, it is opportune to enrich the literature data for the veterinarian in order to optimally manage organopathies and systemic diseases in alpacas. The study was carried out over a period of 2 years 2020 - 2022, on a number of 6 alpacas from the Bucharest Zoo and, respectively, some private leisure properties in Bucharest. Animals are integrated into the leisure service as well as therapy animals. An ESAOTE FALCO 100 ultrasound machine with a 5 MHz linear probe and a 5 MHz convex probe was used in the study. The ultrasound examination of the 3 gastric compartments was possible and easy respecting the eco-anatomical approach characteristic of the species, providing imaging data in real time regarding the topography, the degree of distention, the type and quantity of the content, the motility and thickness and the preservation of the characteristic parietal architecture. Ultrasonographic evaluations of the small intestine and the large intestine were possible, allowing to obtain information on the characteristic tone and peristalsis, along with the highlighting of the parietal components for the small intestine and more difficult for the large intestine, where the presence of gases artifactually limits the identification and appreciation of the distal wall of intestinal contents (gas). The examination of the spleen was possible following the approach in the area of choice (at the level of the left hypochondrium), obtaining information regarding the size, echostructure and echogenicity of the lienal parenchyma, in the patients evaluated clinically and sonographically, no changes in the characteristic parameters were recorded.

Keywords:ultrasonography, *Alpaca*, *Vicugna pacos*.

STUDY REGARDING THE CLINICAL-THERAPEUTIC MANAGEMENT OF RESPIRATORY DISEASE IN 9 CALVES

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Summary

The aim of the present paper is formulate out an integrated study of the results of our own investigations with the current ones from the specialized literature in the complex of respiratory diseases in cattle, mainly of the data regarding the clinical diagnostic algorithm and the optimization of their therapeutic approach. The first objective of the conducted studies was to identify the epidemiological and the inducing context, in order to optimize the clinical-therapeutic management of this condition in calves. The study was carried out in the period 2021 (January) - 2022 (March), within the Bucharest Sanitary-Veterinary Circumscription and the Gruiu farm, during which the disease was recorded in a number of 9 calves. The periodic clinical screening carried out at the level of this farm and the holdings of the Bucharest Veterinary Sanitary District, followed by early identification during the study period, allowed the structuring of patients thus affected into several groups, each benefiting from an individually modulated and adjusted antibacterial therapy in dynamics, depending on the therapeutic response and the evolution of the cases. In this sense, we tried to optimize the therapeutic approach, especially the anti-infective one, based on a curative efficiency. The groups of animals (lots) included patients classified on the basis of the intensity and extension of the pathological process, of clinical suspicion at the time of the preliminary evaluation. The criterion on the basis of which the study groups were created was based on the intensity and persistence of the functional and physical signs at the level of the respiratory system, the reduction or remission of which allowed the assessment of the degree of efficiency of the therapeutic protocol.

Keywords: calves, respiratory disease, therapy.

STUDY REGARDING THE THERAPEUTIC PROTOCOL IN CANINE PATIENTS WITH ACUTE GASTROINTESTINAL DISORDERS

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Summary

The aim of our case study is to identify an efficient treatment protocol for canine patients with gastrointestinal disorders, emphasizing on restoration of the hydro electrolytic balance and dietary changes. The prevalence of gastrointestinal disorders in dogs has increased constantly in the last years, being, most often, caused by errors in the patient's alimentation. The present study was conducted on 10 canine patients with various gastrointestinal disorders, to which a diagnosis protocol consisting of anamnestic data and paraclinical exams (blood test and ultrasonography) was applied. After establishing the diagnosis, a treatment protocol consisting of electrolytes, vitamin B supplements, psyllium, prebiotics, and diet changes was applied. Of the total number of patients (n=10), 70% (n=7) showed significant improvement of the clinical status just two days after starting the treatment protocol, with remission of the initial clinical signs (diarrhea, vomiting, apathy) and 30% (n=3) of the patients showed improvement 4-5 days after starting the treatment. The success rate of the treatment protocol was 100%, all patients' clinical status improved, the total remission of the clinical signs being observed in all cases in maximum 7 days after the onset of our therapeutic protocol.

Keywords: acute gastrointestinal disorders, canine patients, therapeutic protocol.

RESEARCH ON THE LEVEL OF SOME CELLULAR AND MOLECULAR EFFECTORS IN FALLOW DEER (*DAMA DAMA*)

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Summary

Due to favorable environmental conditions, in Romania live numerous species of wild game animals, specific to each region and vegetation. The fallow deer (*Dama dama*), along with other cervids, but also rabbit, wild boar and pheasant, represent the game species of major importance in our country, hunted for their meat, which possesses indisputable dietary qualities. The aim was to highlight the main haematological parameters in males (bucks) and females (does) of *Dama dama* species from three hunting grounds, in comparison to haematological parameters found in blood samples taken from ten young bulls at around two years old (stirks). For this, 30 blood samples of fallow deer were examined, twenty from bucks and ten from does, collected immediately after the animals were shot, while the control group consisted of 10 samples taken from the jugular vein of stirks. The results showed close average values in fallow deer with no significant differences between males and females. Monocytes and leukocytes were found to be significantly higher in wild ruminants (fallow deer bucks and does) than in domestic ruminants (stirks). In the fallow deer, a higher number of leukocytes was associated with a lower number of lymphocytes, while in stirks, the ratio was reversed.

Keywords: fallow deer, haematological parameters, immunity.

**SERUM LYSOZYME AND SERUM PROPERDIN
IN FALLOW DEER (*DAMA DAMA*)**

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Summary

Immunity is the capacity of each organism to create a proper immune response after being exposed to an antigen (infections or diseases produced by potentially pathogenic microorganisms). Mammals utilize both, innate and adaptive immune systems together to protect themselves against infectious and non-infectious stressors. As in domestic animals, the immunocompetence of wild animals is controlled by endogenous and exogenous factors. Moreover, the defensive capacity of the animals is also influenced by the amount of morphological and functional development of the humoral and cellular primary effectors that participate in the immune reactions. Through serological and immunological tests, sufficient data can be gathered for the characterization of the immunological profile and immunological mechanisms, in order to accurately assess the immune system's response capabilities. On this premise, the study aimed to examine non-specific immunity in wild ruminants (*Dama dama*) using two humoral immunological indicators, lysozyme and serum properdin, whose analysis provides solid data on an organism's immune response potential.

Keywords: lysozyme, fallow deer, immunity, serum properdin.

**THE SURVEY OF THE ISOLATION FREQUENCY OF
CAMPYLOBACTER SPP. IN POULTRY ORIGIN SAMPLES – A
PRELIMINARY STUDY**

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Summary

The food-borne origin *Campylobacter* spp. infections are recognized as the main cause of gastroenteritis in humans, worldwide. The consumption of undercooked poultry or other cross contaminated foodstuffs are considered mains sources of human campylobacteriosis. Considering the importance of the monitoring of this important food-borne pathogen within the entirely food chain, the present study aimed to provide data on the frequency of isolation of *Campylobacter* spp. in poultry origin samples collected from slaughterhouse, as well as retail level. A total of 48 samples were collected, consisting in neck skin sample mass (n=15) and fresh cecal samples (n=23) from healthy slaughtered broiler chickens in two slaughterhouses of Timiș and Hunedoara counties, as well as from retail raw chicken meat (n=10) sold directly to the consumer in the aforementioned counties. The sampling methodology was based on the requirements of European Union Regulation no. 2017/1495, regarding the presence of *Campylobacter* in chicken samples. Overall, *Campylobacter* spp. was identified in 39.6% (19/48, 95% CI 27.0 – 53.7) of the examined samples, with a distribution of 20.0% (2/10) in the raw meat, 47.8% in the cecal samples, and 40.0% (6/15) at the neck skin level, respectively. The study results strengthen the fact that chicken origin samples constitute an important *Campylobacter* reservoir, and, at the same time, open the opportunity for further epidemiological studies based on molecular characterization, as well as on the monitoring of phenotypic and genotypic antimicrobial resistance profile of the isolated strains.

Keywords: *Campylobacter*, bacteria, isolation, frequency, poultry.

**PRELIMINARY STUDY OF THE ISCHIO PUBIC SYMPHYSIS
THROUGH PELVIC RADIOGRAPHIC INVESTIGATIONS IN THE
AFRICAN PYGMY HEDGEHOG (*ATELERIX ALBIVENTRIS*)
FEMALES**

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Summary

The potential risk of fusion in the ischiopubic symphysis of the female African hedgehogs that have never been bred before the age of 1.5 years is mentioned in the literature. However, no study was conducted in order to prove this issue. The objective of this study was to show if age in correlation with parity has an influence on the fusion of the ischiopubic bones in the African pigmy hedgehog. The study was performed on sexually mature African hedgehog females. Both nulliparous and multiparous females were studied. Four categories (C1-C4) were constituted having the age and parity as criteria: C1, nulliparous and younger than 1.5 years; C2, multiparous and younger than 1.5 years; C3, nulliparous and older than 1.5 years; C4, multiparous and older than 1.5 years. The *Atelerix albiventris* females were anesthetized to perform the imagistic investigations on their pelvic region. In order to carry out the radiographies the animals were placed in ventrodorsal recumbency with their limbs stretched. The results of the study showed the fusion of ischiopubic symphysis in the hedgehog older than 1.5 years with no history of breeding, while in the other categories of hedgehogs, fusion was not encountered.

Keywords: African pigmy hedgehog, ischiopubic symphysis, nulliparous, multiparous, pelvic radiographs.

RESEARCH REGARDING PREVALENCE OF CHOLECYSTITIS IN DOGS

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Summary

Canine gallbladder related diseases are being reported with an increased frequency by specialists working in small animal veterinary medicine. Investigations carried out on 186 patients revealed that prevalence is greater with females 62.90% (n=117) and with dogs between the ages of 6 to 10 years old 43.01% (n=80). Most common breed identified with cholecystitis is mixed breed 22.58% (n=42). The majority of patients were brought in because of acute symptomatology - 58.06% (n=108) and the most common identified symptom was emesis, in 76.34% (n=142) of cases. After analyzing the data collected from all the patients 58.06% (n=108) were diagnosed with acute cholecystitis accompanied by cholestasis in 43.51% of cases (n=47), microlithiasis in 29.35% of cases (n=32), comorbidities in 20.37% of cases (n=22) or trauma in 6.48% of cases (n=7). 41.93% (n=78) of the patients included in the research were diagnosed with chronic cholecystitis accompanied by cholestasis in 29.48% (n=23) of cases, gallbladder lithiasis in 12.82% of cases (n=10), comorbidities in 34.61% of situations (n=27), microlithiasis in 11.53 % (n=9) of cases and gallbladder mucocele in 6.41% (n=5) of cases. Chronic cholecystitis was also identified as a consequence of extrahepatic gallbladder obstruction in 5.12 % (n=4) of the cases analyzed. After applying routine diagnostic exams in 64 patients, 32.81% (n=21) of them were found manifesting the disease systemically. Most common identified hematological variations was inflammatory leukogram in 21.87% (n=14). Most often identified changes in biochemical exams were hyperbilirubinemia 9.35% (n=6) and an increase in activity of serum transaminases in 15, 62% (n=10) of patients. Most common identified ultrasonographic changes were mucosal hyperplasia in 81.81% (n=18) of patients and the presence of intraluminal sediment in 72.72% (n=16). Finding of this research can help elaborate diagnostic protocols concerning cholecystitis in dogs and characterize the canine population most at risk.

Keywords: cholecystitis, cholestasis, prevalence.

RESEARCH REGARDING THE USE OF KRILL OIL IN CANINE PATIENTS SUFFERING FROM HYPERLIPIDEMIA

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Summary

Krill Oil is a sustainable source of Omega 3 polyunsaturated fatty acids, rich in eicosapentaenoic acid and docosahexaenoic acid. Salmon oil is another natural source of polyunsaturated fatty acids transported with the aid of triglycerides, whereas krill oil fatty acids are transported using phospholipids and phosphatidylcholine. The benefits of krill oil and salmon oil are being exploited by veterinary clinicians specialized in hyperlipidemic pathology for their ability to regulate cholesterol and triglycerides levels in canine patients. After conducting a statistical analysis on a group of 87 canine patients, divided in 6 groups according to their body conditions score, all of them receiving variable doses of Krill oil and salmon oil, and centralizing the data collected from the analyses, it was concluded that krill oil and salmon oil prove to be efficient in statistically lowering cholesterol and triglycerides level in 83.33% (n=5) of cases. Furthermore, the research shows that doubling the dose of Krill oil does not lead to a greater decrease in cholesterol and triglycerides levels. Krill oil was found to be more effective than salmon oil in lowering serum lipidic values. Nevertheless, both were proved to be efficient in influencing serum lipidic values and can be considered of aid in treating disease associated with hyperlipidemic pathology.

Keywords: hyperlipidemia, krill oil, salmon oil.

THE AGE INFLUENCE ON THE INCIDENCE OF FELINE CHRONIC KIDNEY DISEASE

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Summary

The prevalence of chronic kidney disease in cats increased significantly in recent years, requiring the identification of the etiopathogenetic context in correlation with the systemic effects and functional organ disorders, for the application of a diagnostic algorithm and the optimization of the curative protocols. The study was conducted over a period of two years, within the University Emergency Hospital Prof. Univ. Dr. Alin Bîrțoiu, Bucharest on a number of 20 cases of felines with suspicion of chronic kidney disease, 10 of these, ranged in age from 5 to 18 years, being considered eloquent for our study. The clinical examination was performed on each patient separately, by general methods, as well as by special, paraclinical methods, such as: biochemical and hematological examination, urine sediment examination, ultrasound examination and in some cases, cardiological exam. The results obtained from the paraclinical examinations and the physiological limits were specified in each individual case. Regarding the age of the patients that had a positive diagnosis of chronic kidney disease, the oldest age was recorded in the sixth case (18 years), in the third, fourth and last case, the age of the patients was 15 years. There were 2 patients aged 12 years (cases eight and nine) and a single patient aged 10 years (the second). There were 3 patients under the age of 10, namely: the first case, the fifth and the seventh. Of the patients with chronic kidney disease included in the present study (n=10) belonging to the European race (100%), 6 females (n=60%), 4 males (n=40%), 7 individuals (70%) belonged to the age group > 10 years, and the rest (n=3), under this age. Therefore, 70% of the diagnosed cases were recorded in geriatric patients with ages ranging from 10 to 18 years, only 30% of the cases being recorded in younger (less than 10 years old) patients.

Keywords: felines, chronic kidney disease, geriatric patients.

THE USE OF THE SYMMETRIC DIMETHYLARGININE (SDMA) SCREENING IN THE DIAGNOSIS OF FELINE CHRONIC KIDNEY DISEASE

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Summary

The renal biomarker symmetric dimethylarginine (SDMA) is currently considered by specialty literature as the only early indicator in chronic kidney disease. SDMA highlights the alteration of the glomerular filtration rate's normal functioning, from the point when the nephrons have been damaged and destroyed in a 25% percentage. SDMA is an important biomarker in the early detection of kidney disease and can be interpreted in correlation with the serum creatinine level, but also evaluated alone, symmetric dimethylarginine being much more sensitive in early detecting chronic kidney disease than creatinine. Our study was performed on a group of 10 feline patients with different stages of chronic kidney disease, studied over a period of two years at University Emergency Hospital Prof. univ. Dr. Alin Bîrțoiu, Bucharest. The investigative ensemble used for identifying, confirming, and evaluating the stage of the chronic kidney disease, in addition to the clinical examination included hematological investigations (complete blood count), blood biochemistry (urea blood nitrogen, creatinine, total serum proteins, albumin, phosphorus, sodium and serum potassium) in all 10 patients and symmetrical dimethylarginine (SDMA) in 5 patients (50%). In order to confirm the diagnosis ultrasound examination was also performed in all patients. With maximum accuracy in establishing (according to the IRIS staging) the degree of functional impairment, the use of the SDMA test performed in 50% of the patients allowed us to confirm the diagnosis and to establish the optimal therapeutic protocol, in the case of the patients with SDMA values over 20 micrograms/dL.

Keywords: symmetric dimethylarginine, SDMA, felines, chronic kidney disease.

STUDY ON THE CLINICAL-THERAPEUTIC MANAGEMENT OF ANEMIAS IN COMPANION ANIMALS

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Summary

The medical literature data clearly highlights the rigor and the major importance of the clinical examination in establishing the diagnosis, but to the same extent considers that, in the current era, modern paraclinical methods of great precision and finesse, have considerably widened the field of investigation, offering a scientific model of interpretation of symptoms and diagnosis. The present study represents a concentrated update of bibliographic data regarding anemias in companion animals. The work comes as a response to the requirements of the veterinary medical practice, which is faced with a very diversified casuistry from the point of view of the etiopathological complex of anemia, which implies a differentiated clinical-therapeutic approach. Managing the cases included in the report, we followed a unitary investigative protocol, aimed at recording, drawing up clinical observation sheets, the general clinical examination, the functional and physical examination of the circulatory system (in correlation with the data of the other existing devices), hematological and biochemical investigations aiming especially the red line.

Keywords: anemia, pets, hematological.

**THERAPEUTIC EFFICACY ASSESSMENT OF OXYCLOZANIDE
AGAINST PARAMPHISTOMUM IN CATTLE**

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Summary

Cattle are one of the most important species of domestic animals raised in Romania. Parasitic elements identified in cattle are very diverse and common. The aim of this study was to determine the efficacy of oxyclozanide against paramphistomosis in cattle under conditions of natural infestation. The cattle taken into study were randomly divided into two groups of 10 individuals. One group was the untreated control group and the other group was treated with oxyclozanide administered orally at a dose of 20 mg/kg body weight. Feces were collected from each animal from the rectum on days 0, 7, 14, 21 and 28 and examined using the McMaster method. The efficacy of oxyclozanide was 91% on day 7 and 100% on days 14, 21 and 28. In conclusion oxyclozanide has proved effective in treating *Paramphistomum* spp. in cattle.

Keywords: cattle, EPG, efficacy, oxyclozanide.

MITOCHONDRIA - AN ESSENTIAL COMPONENT OF THE OOCYTE

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Summary

Oocyte maturation represents the successfully end of the complex process of growth and development occurring in the ovarian follicle. Fully grown oocytes become able of undergoing the three main aspects of maturation: nuclear, epigenomic and cytoplasmic. These three processes must be achieved simultaneously. In addition, oocyte maturation directly depends on the ability of mitochondria to ensure bioenergetic reserves. These are highly dynamic organelles that constantly move, fuse and divide in response to the various energy demands of the cell, the dynamics being mediated by large dynamin-GTPases (DRPI, OPAI, MFN1 and MFN2) contained in mitochondrial membranes. Optimal mitochondrial activity relates to mitochondrial structural changes, mutation load, available mtDNA copy number, as well as mitochondrial motility. Mitochondria produce reactive oxygen species (ROS) which are the toxic residues resulting from the OXPHOS process. These cell organelles integrate temporary permeability pores (mtPTPs) that initiate cell death through their opening when the energy-generating function of the mitochondria declines. As a result, mitochondrial dysfunctions that will inhibit OXPHOS and allow the production of higher amounts of ROS will lead to apoptosis. Mitochondrial functions can be affected by increased ROS levels. Mitochondrial oxidative phosphorylation is the primary source of ROS. The importance of ensuring a minimum threshold number of mitochondria that ensures developmental capacity has determined the use of medicinal agents to increase mitochondrial mass or to improve mitochondrial function. Thus, this study includes information related to antioxidant substances, such as *alpha-ketoglutarate*, *resveratrol*, *CoQ10* and how they act on amplifying the functioning of mitochondria and suppressing oxidative stress at the level of oocytes.

Keywords: mitochondria, oocyte, apoptosis.

ETIOTROPIC MANAGEMENT OF NEONATES DIARRHEA IN LAMBS

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Summary

In the intensive breeding of farm animals, the neonatal period constitutes a critical window of maximum vulnerability due to the lack of an own functional immunology system and dependence on passive immunity - acquired through absorption colostrum immunoglobulins, in the first 24 hours of life. The lot included 40 lambs, of which 18 were males and 22 females, from 25 ewes. In this group, 12 animals developed the symptoms of neonatal diarrhea syndrome, thus, it was decided to divide it into two subgroups, further noted 7A and 7B, each of which includes 6 individuals, aged between 3-6 days of life. The diagnosis was done with the Rainbow Bio K 316 rapid test, resulting in a pronounced infection with *Cryptosporidium parvum*. The therapeutic management of the subgroups involved the administration in the form of protocols of Paromomycin at a dose of 100mg/kg GC, per os, once a day, for 11 days and Halofuginone at a dose of 100mg/kg per os, once a day, for 7 days. The approach of a correlated etiological treatment, after the identification of the primary responsible pathogen agent, and the implementation of a modular therapy, individually adapted, allowed the reduction of mortality of young sheep which present peri- and neonatal diarrhea syndrome.

Keywords: lambs, diarrhea, neonatal, therapy.

IMPROVING THE PERFORMANCE OF PIGLETS

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Summary

In this paper, we wanted to present the results of the analysis of the reproductive performance of 400 sows found in maternity, at which had been reported deaths until the 28th-day p.b (postbirth), of 27%, unlike 16-18% that was expected. In this study, 90 sows were observed, 9 sows/day, and their offspring were weighed at birth, 24 hours postbirth and 28th day. Because of the nature of the technological flux, it was not the preferred method of analysis. In the end, the experiment was carried out over 11 days, the motive being the incapacity of weighing the piglets on the 28th day. For the experiment to be carried out properly, the subjects were separated into 5 groups: the first group represents the category of piglets of 100g or below, the second 100g-150g, the third 150-200g, the fourth 200-250g, and the last one the piglets that died in less than 24 hours. A correlation between the weight at birth, the quantity of the colostrum sucked, the weight at weaning and death can be seen after the analysis of the data was made.

Keywords: sow, reproduction, piglets, weigh.

IN VITRO/VIVO PRODUCTION OF BOVINE EMBRYOS

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Summary

The term *in vitro fertilization* (IVF) suggests the fact that the union of the gametes is carried on outside the body, in a special environment under the control of successive stages, the result being of embryos. *In vitro embryo production* (IVP) is a technique that includes a combination of oocyte maturation, sperm capacitation, oocyte fertilization and in vitro embryo culture. IVP significantly contributes to increasing reproductive efficiency as a tool for shortening the interval between generations, intensifying selection, improving genetic material of economic interest. More than one million bovine embryos obtained through IVP were registered in 2018, representing 68.7% of the total. Among the 43 countries that reported ET-related data, 29 (67.4%) reported the use of *in vitro embryo production* (IVP). Since 2016, the production of embryos obtained in vitro (IVP), as an embryo generating technique, exceeded the number of embryos obtained in vivo (IVD) by 5.3%. In 2017, approximately 992,289 embryos were transferred following IVF and approximately 495,054 through IVD which indicates an approximately two-fold increase in favor of IVF. This increase in the number of embryos obtained in vitro is given by the increase of 164.7% in Europe and 82.7% in the USA, compared to 2016. Between 2007-2016, 605,550 embryos were obtained by IVD and 751,044 embryos were obtained through IVP. In Europe, in 2016, 19,974 IVFs were obtained and in 2017 a number of 52,879, representing a major increase in the use of this embryo production technique. Of the total embryos obtained in 2017 in Europe, Russia obtained 26,762, representing 51.5% of the total in Europe. In Romania, no data were reported regarding the production of embryos by this technique during the study period.

Keywords: embryo production, in vitro.