

**TRADITIONAL VERSUS COMMERCIAL YOGURT  
BY BIOCHEMISTRY AND MOLECULAR BIOLOGY  
ANALYTICAL METHODS**

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**Summary**

We produced in our laboratory yogurt from fresh cow-milk and *Vaccinium vitis-idaea* (known as lingonberry or cowberry) – freeze, and from "home-made" classic jam and "home-made" jam with pectin. These yogurt products and another three types or commercial plain yogurt were analyzed. The results presented an improvement of nutritional quality for fruit yogurt compare to plain commercial or home-made yogurt. Also, our study had in view that for yoghurt products the most frequent fraudulent additions reported are soybean protein and maize starch. Those unlabelled addition are difficult to detect by protein based analysis due to manufacture processing. Molecular methods for detection of adulteration in dairy products are based on a specific DNA sequence identification by PCR amplification. If present even in trace quantities, those sequences can be detected by PCR method in any type of product, more or less processed. In this experiment, yoghurt samples were subjected to sequences of soybean and maize DNA identification. Small traces of vegetal DNA were detected in all analyzed samples, but in specific reaction for soybean and maize only the commercial samples were found positive, yet unlabelled accordingly.

**Key words:** yogurt, *Vaccinium vitis-idaea*, nutritional facts, PCR

## **BREEDING AND EXPLOITATION OF BOARS ON COMMERCIAL FARM**

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Breeding and exploitation of boars on commercial farms aimed at producing sperm doses for personal use. The lifetime of boars and therefore the length of their exploitation largely depend on their health. Therefore, control of the health status of the boars, quality control sperm for artificial insemination by overseeing the entire process of taking to sperm quality insemination dose optimization and comprehensive environmental conditions hold (accommodation, microclimate, food, power, attitude of employees), represent important parameters in terms of health control themselves boars, health control of the entire herd or economic parameters and productivity of farms and the profitability of the entire production. On a commercial farm at a total of 28 boar, race Landrace and Jokshir who were in exploitation during one calendar year following parameters: the number of inseminated gilts, sows number insemination, repeated heats, the number of pollinated piglets, number of live births, and the number of stillborn piglets. Of all the 28 boars that were in exploitation were took blood. Sera boars we used to study prevalence porcine circovirus antibodies to type 2 (PCV2) using the ELISA test. We found that out of 28 tested samples was positive 21 samples. We have established the prevalence of antibodies to porcine circovirus type 2 PCV2 in tested boars.

**Key words:** boars, holding, exploitation, PCV2, comercial farm

**EREDOPATHOLOGICAL STUDY OF A CAUCASIAN SHEPHERD PUPPY WITH GENETIC ABNORMALITIES**

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**Summary**

Histerotomy practiced for solving dystocia in a Caucasian Shepherd breed female, resulted in the "birth" of 8 puppies. Seven of them were healthy, and one had multiple abnormalities in the head region: abnormal collection of fluid, bounded by incompletely developed epithelium, prominent in dorsal cervical region, - right eyeball uncovered by eyelids and discontinuity of the palate.

The eredopatological investigation (clinical, cytogenetic and *genealogical* examination) concluded that newborn present two hereditary abnormalities: *dermoid cyst and palatoschisis*.

**Key words:** carnivores, Caucasian Shepherd, dermoid cyst, palatoschizis

**DIFFERENT WAYS OF FEEDING TURTLES (*CHRYSEMYS SCRIPTA ELEGANS*)**

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**Summary**

The turtle with red temples or Florida (*Chrysemys SCRIPTA ELEGANS*) although originally from North America, is now becoming more widespread in Europe and in our country. For this reason feeding them in captivity become a challenge. Two batches of turtles in 2 months of age were fed for 10 weeks with beef. Additionally batch E1 was fed with Tubes (genus *Tubifex*) and batch E2 was fed with dry crayfish (genus *Gammarus*). Body mass growth rate highest in recorded E1 batch ( $18.116 \pm 0,588$  g average final table) and batch E2 obtained lower performance, making only reached 89.23% by weight of the first batch ( $16.166 \pm 2.588$  average final table g). Feeding turtles with live food (*Tubifex*) is top than with dry food (with 10.77%). It is found that, in general, variability in batch E1 increases with age. This could be possible due to competition between individuals of the same batches for turtle.

**Key words** : turtles, feeding, tubes, beef

## **COMPARATIVE APPLICATION OF TWO MUMMIFICATION TECHNIQUES ON RABBIT AND CAT CADAVERS**

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### **Summary**

Human and animal cadaver preservation techniques have been known since antiquity, starting with the most basic ones, like freezing or simple mummification, up to artificial mummification via arterial injection and immersion. Several combinations of chemical are used to achieve this, such as preservatives, to maintain tissue structure, disinfectants, to stop decomposition, humidifying agents and coloring agents. This research aimed to obtain two mummies, one of a rabbit and one of a cat, using two improved techniques. The material used were: one cat cadaver, one rabbit cadaver, dissection kit, 7%, 10% and 15% formalin solutions, technical glycerin, technical ethylic alcohol, coloring agents. Cat body mummification process: it was successively injected with 7% and 15% formalin solutions, respectively, allowing it to fixate post-injection for 5 and 10 days, respectively. The skin and subcutaneous conjunctive tissue were then removed, and the musculature highlighted. The body was once again mounted and dehydrated by freezing for 14 days. After de-freezing it, the technical glycerin and the colorant agents were applied. The piece was kept on the base to dry until the induction of the mummification. Rabbit body mummification process: it was first injected with 10% formalin solution, mounted on a base, left to fixate for 3 days, injected with technical ethylic alcohol, re-mounted and left to degrease and fixate for 5 days. Next, the skin and the subcutaneous conjunctive tissue were removed, underlining the muscles. We re-injected them with technical ethylic alcohol, re-positioned the piece on the base and froze it for 10 days, to continue the degreasing process. The piece was then left at room temperature, adding an acrylic coloring agent, by brushing. The body was mounted on the final base and dried with the aid of a ventilator. We conclude by underlining the fact that both these preservation methods met the requirement of maintaining the anatomical characteristics.

**Key words:** mummies, cat, rabbit

## DIETARY SELECTION IN SHEEP AND GOATS UNDER FREE-GRAZING AND PENNED CONDITIONS IN THE NEGEV, ISRAEL

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### Summary

The foraging behaviour and dietary selection of free-ranging Awassi sheep and Negev goats when shepherded in the Negev Desert was determined. Measurements were made from the beginning of February, following winter rains and emergence of annual plants, to the end of March, after the herbaceous vegetation dried up. Since sheep are grazers and goats are intermediate feeders, we predicted that goats would browse more and consume proportionately more browse than sheep. These predictions were only partially supported. It was concluded that vegetation availability and foraging habits affected dietary selection. Both sheep and goats only grazed when herbaceous plants were abundantly available; differences between ruminant species were apparent when herbaceous plants became scarcer, at which time goats browsed more and consumed proportionately more browse than sheep.

In a laboratory cafeteria trial, six fodder plants consisting of two leguminous trees, *Acacia salicina* and *Acacia saligna*, a leguminous shrub, *Cassia sturtii* and three halophytic shrubs, *Atriplex canescens*, *Atriplex halimus* and *Atriplex nummularia* were offered *ad libitum* to four fat-tailed Awassi sheep and four local Negev goats. Leguminous plants are characterized by high tannin contents and halophytes by high ash contents. We asked whether: (1) fodder selectivity by these small ruminants and (2) the ranking and proportionate feed intakes differed between sheep and goats. Total dry matter intakes were similar in sheep and goats and feed selection in goats tended to be positively correlated with that of sheep. *Acacia saligna* was the most preferred feed in both small ruminants and the two *Acacia* species comprised more than 86% and 70% of dietary intakes in goats and sheep, respectively.

**Key words:** sheep, goat, free grazing

## THE MORPHOLOGY OF THE VERTEBRAL COLUMN IN BENGAL TIGER (*PANTHERA TIGRIS TIGRIS*) – CASE STUDY

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### Summary

In order to describe the anatomical configuration of these species, were used bones from a dead body of a Bengal tiger male (*Panthera tigris tigris*), which was donated for teaching purposes from N & Variety Circus GLOBUS Bucharest. This exemplar died at age of 9 years. Being a protected species we have found necessary to describe its morphology, due to the fact that it can be useful to the veterinarians and biologist from zoo, parks and protected areas. It can also be helpful for customs authorities, given that it is possible to discover poached and illegally transited specimens or bones traffic. The tiger is a strictly protected species and included of the Red List of IUCN. The pieces were obtained after removal of soft tissue and subjected to maceration process. After using this process, the bones were washed and dried. Bones were measured and described in accordance with Nomina Anatomica Veterinaria – 2005. The results were compared with the ones existing for the jaguar (*Panthera onca*). The atlas, the first cervical vertebra, shows a sharp reduction of the body and is represented by a vertebral arch, showing the ventral tuber reduced spine aspect. The axis, the second cervical vertebra, presents the face elongated dorsal spinous process cranio-caudal developed with the free edge slightly thickened and finished with a clear caudal tubercle. The body of the other cervical vertebrae decreases from the third vertebra to the seventh vertebra. The tiger has 13 thoracic vertebrae. The seven lumbar vertebrae have a developed body, flattened dorso-ventral increasing cranio-caudal direction width. Sacral vertebrae, 3, are welded to each other to form the sacrum. The tiger has 22 caudal vertebrae. All studied vertebrae have the general features presented in cats. In comparison with the jaguar, tiger's vertebrae are significantly bigger. We consider that the differences can be one of the criteria of establishing bones origin when required.

**Key words:** Bengal tiger, vertebral column, bones, measurement

## **A STUDY ON FORMALLY INSPECTED DAIRY COWS' MILK – A CASE STUDY**

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### **Summary**

Formal control of the dairy cows' milk productions grants information on each cow's production quality and quantity. The results of the analysis report should be used both for the individual cows, and for improving the dairy farm management. Fat to protein ratio (F/P) and the milk urea nitrogen (MUN) or somatic cells count (SCC) provide information useful to farmer. As per various studies, F/P <1.1 indicates lack of fiber or energy surplus; and the ratio F/P > 1.5 indicates surplus fiber or energy deficit. A low MUN value under 8 indicates low crude protein in the ratios, improper mix of undegradable and degradable protein, and/or high rumen fermentable carbohydrates (NFC); and rates above 14 indicate crude protein possibly too high, rumen fermentable NFC possibly too low, or protein and NFC improper mix in food. SCC over 300,000 / ml milk requests inspection for detection of subclinical mastitis; while SCC over 1 million cells / ml milk requires antibiogram and mastitis treatment.

Depending on the farm size and number of cows in milk control, the study indicates energy deficit for 5 to 45% of cows; protein deficit for 0 to 20% of the farms; excess energy for 0 to 15% of the farms; excess protein in 2 to 35% of the cows; subclinical mastitis prevalence with 5 to 35% of the cows; and clinical mastitis prevalence with 2 to 10% of the cows.

Given the current social and economic background, such diagnosis requires greater involvement of the dairy associations, in order to improve the feeding and milking technologies on the dairy farms in Romania

**Key words:** dairy, milk constituents, formal recording



## CONSIDERATIONS ON LACTATION IN CATTLE UNDER ROMANIAN FORMAL RECORDING

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### Summary

We have charted the lactation curves for four cattle breeds considered, i.e. 4638 Holstein cows, 97 Red Holstein, 6107 Romanian Spotted-Simmental and 872 Monbeliard, which were subjected to formal milk production control during October 1<sup>st</sup>, 2013 to September, 30, 2014.

Recorded normal lactation of the Holstein cows, through 33,137 control actions, indicates the daily average as 21.16 kg milk, 3.96% fat and 3.31% protein (ratio F/P=1.19); and the breed average as 6453.91 kg milk. For total lactation, the top yield recorded was 17,919 kg milk. Recorded normal lactation of the Red Holstein cows through 686 control actions, indicates the daily average as 21.51 kg milk, 4.18% fat and 3.33% protein (ratio F/P=1.23); and the breed average as 6561.2 kg. The top yield recorded was 11,202 kg / total lactation. 42,288 inspections were run for the Romanian Spotted-Simmental cows, on normal lactation production; the recorded daily average was 18.10 kg milk, 3.96% fat and 3.46% protein (ratio F/P=1.15); the recorded breed average production was 5,419.52 kg. Top recorded production was 14,119 kg / total lactation. 6,999 control actions were run for the Monbeliard cows, on normal lactation production; the recorded daily average was 21.03 kg milk, 4.12% fat and 3.51% protein (ratio F/P=1.18); the breed average recorded was 6,413.28 kg. The top yield recorded, as brought to maturity equivalent, was 11,484 kg / total lactation.

Breed differences are relatively small, although marked for the milk production. i.e.  $F = 13.81$  with  $p < 0.001$ ; fat -  $F = 5.95$  with  $p < 0.001$ ; protein -  $F = 15.17$  with  $p < 0.001$ ; and ratio F/P ratio  $F = 9.20$  with  $p < 0.001$ ; which may mean that nutrition needs to be improved; and feeding technology needs to be thoroughly sustained, especially for the Holstein type breeds.

**Key words:** dairy breeds, lactation, formal recording

**THE ASCENDING AORTA IN PIGS  
- ANATOMICAL ASPECTS -**

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**Summary**

The aorta presents a very short ascending segment, so that certain anatomists have even asserted that it does not exist (6). It continues with the aortic arch, which gives off the branches providing the blood supply for the head and for the cranial segment of the organism - the brachiocephalic trunk and the left subclavian artery. The brachiocephalic trunk splits itself into the right subclavian artery and the bicarotid trunk. The latter advances cranially and ends cranially to the plane of the first rib, by division into the common carotid arteries. The terminals of the common carotid arteries are given off under the *alla* of the atlas and are represented by the external carotid artery and by a common trunk, composed of the internal carotid artery and the occipital artery. Our present study has investigated the anatomic particularities in pigs of the aorta, of the brachiocephalic trunk, of the bicarotid trunk and of the common carotid arteries.

**Key words:** ascending aorta, brachiocephalic trunk, bicarotid trunk, pig

**THE POSTDIAPHRAGMATIC SEGMENT OF THE  
GASTROINTESTINAL TRACT IN THE DOG AND IN THE CAT  
- A COMPARATIVE ANATOMICAL STUDY -**

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**Summary**

The current study provides a more detailed anatomical description of the features of the external surface of the postdiaphragmatic gastrointestinal tract for the main pet species - the dog and the cat. The importance of the digestive pathology in both species and the necessity to adapt treatments in order to better suit their particularities - linked mainly to nutrition differences, underlines the need of a more detailed knowledge of the gastrointestinal segment anatomy of these domestic carnivores.

The project was carried out in the Comparative Anatomy Laboratory of the Faculty of Veterinary Medicine of Cluj-Napoca, consisting of the dissection of 5 dog corpses and 5 cat corpses followed by the examination their gastrointestinal tracts. The focus was on the general features of each species, while avoiding breed particularities.

Our study has demonstrated that the main morphological external differences at this level, between the dog and the cat, are found in the stomach, in the duodenum and, in a smaller degree, in the other segments of the intestinal mass.

**Key words:** digestive tract, anatomy, dog, cat

## **THE ASSESSMENT OF SEROTONIN IN DOGS**

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### **Summary**

The aggressive behavior of dogs has a negative impact on public safety and health, the number of people getting bitten by dogs increasing each passing day.

The aggressive behavior also has an impact on animal welfare, representing one of the most common causes of abandonment and euthanasia.

A major role in displaying the aggressive behavior is played by serotonin, a hormone that can be correlated with an obsessive-compulsive behavior, with aggression and anxiety.

In the present study, a sorting in two lots of dogs has been made, aggressive and non-aggressive, based on serotonin concentration. The dogs which displayed aggressive behavior had lower concentrations of this neurotransmitter, in comparison to the non-aggressive lot of dogs.

**Key words:** aggressive, dog, serotonin

## **ANIMAL MODELS IN VETERINARY MEDICINE FROM ANATOMICAL PERSPECTIVE**

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### **Summary**

Animal use as an experimental model for different pathologies brings a substantial contribution to the understanding of various diseases pathogenesis mechanisms leading to the development of new diagnostic techniques. Also, the primary pharmacological models are performed on the animal models, from the simplest vaccines testing to the complex antitumor therapies.

All these are justified reasons in a research approach to highlight the anatomical particularities of the most commonly used experimental models due to which these animals have predilection for a particular field of research. Large animals are also used in research, having anatomical similarities with humans, but these animals are difficult to obtain and the maintenance costs are high. Also, the follow up of the entire process in real time and the needs of many subjects for statistical relevance are impediments that must be taken into account. In this context, nowadays, small animals are preferred as experimental research models. This study performed a review of anatomical particularities of small animals commonly used in medical research related to the specific domain of use. Also, depending on the degree of anatomical similarities, this study provided a critical analysis of the opportunity of using animals in specific medical domain, wanting to be a guide in planning research protocol.

**Key words:** anatomy, experimental models, lymphatic system, digestive system

**FOCUS GROUP (TEACHERS) RESEARCH IN THE FRAME OF  
PROJECT "ADOPTING OF PROBLEM-BASED LEARNING INTO  
VETERINARY NURSE PROFESSIONAL TRAINING"**

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**Summary**

The main aim of the project is to adopt innovative instructional strategy – Problem-based learning – into programme of Veterinary Medicine. Necessity of Focus group research appears in order to define the most relevant learning content for application of problem based learning instructional strategy on the one hand and to hear the voice of the employer or Veterinary nurse practitioner – on the other. Also it's important to reflect on tutors' (teachers) and students' attitudes concerning Problem-based learning (PBL) and Problem-based teaching (PBT) instructional strategies. Focus group was composed of 10 teachers of the Faculty of Veterinary Medicine Timisoara who responded to a total of 10 questions. The conclusions is that PBT/PBL facilitators (teachers) need proper training in the application of this method in class/laboratory despite the fact that they already sue it without being aware of it, that they agree PBT/PBL can be applied in the teaching of their subjects, and that they identify the advantages and disadvantages of PBT/PBL correctly. They also claim adopting PBT/PBL in veterinary medicine would be hindered by two facts: students no longer read in the process of learning; there is inertia in our educational system.

**Key words:** project, focus group, professional training

**RESEARCH ON THE CORRELATION BETWEEN WATER  
TEMPERATURE AND HEMATOLOGICAL PARAMETERS OF FISH  
IN A TROUT FARM IN VÂLCEA DISTRICT**

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**Summary**

Increased demand for fish consumption intensive exploitation of trout turned into a necessity that can be supported by a correlation between the quality of living environment and their health status correlated with density, optimum transport and proper handling. In this research were conducted in a trout farm in Vâlcea District, where was monitored water temperature for a period of six months (in summer and winter) and blood samples were taken from trout, which were determined: the total number of red blood cells, the hematocrit and leukocytes (neutrophils, lymphocytes, monocytes and eosinophils). The methods used were those recommended by the Council for Standardization in Hematology and the results were compared with reference values from the literature, were processed and interpreted statistically.

The dynamic evaluation of main parameters of blood, was synthetic and comparative assessment and follows that: the average values of dominants of blood erithrom level (erythrocytes and hematocrit) and white line (lymphocytes, monocytes and eosinophils) were significantly higher in terms statistically in the winter months compared with those determined in the summer months, indicating haemoconcentration correlated with physical activity of fish, water temperature and ambient temperature; mean values of neutrophils were significantly higher in the summer months compared to those determined in winter, which indicates a particular type response to the action of various factors and / or environmental aggression factors.

**Key words:** water, trout, blood samples, haematological parameters

## **METHODS AND PROCEDURES FOR HEART DECELLULARIZATION**

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### **Summary**

Heart failure is the end-stage of many cardiovascular diseases and cardiovascular disease is one of the leading causes of death in the Western world. Most of the synthetic grafts, made of bio-inert materials used as replacements of damaged valves and vessels, fail when it comes to biointegration. Over the past two decades cardiomyoplasty, which involved administration of cells with regenerative properties, has been the aim of most research studies in heart regeneration. More recently, researchers are focusing on generating bioartificial hearts by decellularization and preservation of supporting structures in order to repopulate with new vascular and muscle tissue. Decellularization is a procedure which involves chemical, physical or enzymatic treatment of an organ or tissue from humans or animals to eliminate all resident cells in order to obtain an extracellular matrix (scaffold). The scaffolds obtained through the decellularization process mimic nature's design to a degree that it can't be reproduced with any synthetic materials. The aim of this procedure is to obtain an intact extracellular matrix of an organ or tissue which will be used in regenerative medicine, transplantation and/or bioartificial organs. In this review, we examine the most frequently used methods and procedures for heart decellularization and latest achievements.

**Key words:** decellularization, recellularization, bioartificial heart, scaffold



## **THE MORPHOPATHOLOGICAL PREVALENCE OF UNINFLAMMATORY NEPHROPATHIES IN DOGS**

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### **Summary**

The morphopathological study of uninflammatory nephropathies in dogs has been conducted using macroscopic and microscopic identification and description of renal lesions as well as establishing their prevalence.

The research has been done in the period of October 2011-November 2014 through anatomopathological examination of eviscerated kidneys from 40 dog corpses, of different age, sex and breed. The dogs came from private owners, kennels and animal shelters and they were necropsied during Forensics classes at the Faculty of Veterinary Medicine in Timisoara.

Out of a total of 40 necropsied cases, 22 cases (55%) presented uninflammatory nephropathies: adaptive nephropathies-2 cases (5%), circulatory nephropathies-5 cases (12.5%) and degenerative- 15 cases (37.5%).

The microscopic exam of the histopathological preparations, obtained from renal samples and processed using the paraffin technique, cut at 6  $\mu$ m and stained using the HFA method, Congo red method and Perls method, reveal the following nephropathies: renal atrophy caused by cystic compression, passive renal congestion and renal steatosis, granular and vacuolar tubulo-nephrosis, hyaline, amyloid and hemosiderin glomerulo-nephrosis and tubulo-nephrosis. The dystrophic lesions were dominant and they were represented by lipid, protein and pigmentary nephrosis.

**Key words:** morphopathological, uninflammatory nephropathy, dogs

## **MORPHOPATHOLOGICAL QUANTIFICATION OF INFLAMMATORY NEPHROPATHIES AND TUMOURS IN DOGS**

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### **Summary**

The research of the present study was conducted through observation, description and microscopic and macroscopic interpretation of renal inflammatory and tumor lesions and based on their prevalence in dogs.

The study was conducted in the period October 2011-November 2014 by anatomopathological examinations of kidneys eviscerated from 40 dog corpses, of different ages, sex and breed, coming from private owners, kennels or animal protection services in the Timis and Arad County. The bodies were necropsied In the Forensics section of the Veterinary Medicine Faculty in Timisoara.

From these cases, seven dogs were diagnosed macroscopically and microscopically with inflammatory nephropathies and one case was diagnosed with renal adenoma. The histopathological exam of the preparations obtained using the paraffin technique and stained using the HEA method showed the following: inflammatory nephropathies represented by membranous glomerular nephritis, 2 cases (5%); fibrous glomerular nephritis, one case (2,5%); purulent interstitial nephritis, one case (2,5%); interstitial limphohistiocytic nephritis, 2 cases (5%); fibrous interstitial nephritis one case (2,5%) and as tumors we discovered one case with renal adenoma (2,5%). The noticed renal lesions developed simultaneously or successively in several segments or renal tissular structures.

**Key words:** morphopathological, inflammatory, tumor, dogs.

## **CHONDROGENIC DIFFERENTIATION OF PERIODONTAL GRANULATION TISSUE DERIVED STEM CELLS**

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### **Summary**

Recent studies have shown successful isolation of mesenchymal stem cells (MSCs) from oral cavity such as dental pulp, exfoliated deciduous teeth, periodontal ligament, dental follicle, apical papilla etc. Adult MSCs were also isolated from inflammatory tissue. The aim of this study was to harvest MSCs from periodontal granulation tissue in order to further characterize their chondrogenic potential using specific differentiation medium or co-culture system. The granulation tissue was collected from a patient with chronic periodontitis treated with a pocket reduction surgical approach. After morphological, functional and immunophenotypic characterization the cultures were treated with chondrogenic differentiation medium and co-cultured with mouse chondrocytes. The differentiation potential of granulation tissue derived MSCs was evaluated after 24 days. Our study revealed that the selected biomaterials are biocompatible and can be used as scaffolds for mesenchymal stem cells delivery especially for periodontal regeneration. MSCs isolated from inflamed tissue demonstrate their proliferative capacity and chondrogenic differentiation in both systems and may represent a good source of MSCs for regenerative therapy.

**Key words:** stem cells, chondrogenic differentiation, granulation tissue

**COMPARATIVE FUNCTIONAL ASSESSEMENT OF PALATAL  
AND UMBILICAL CORD BLOOD MESENCHYMAL STEM CELLS**

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**Summary**

Mesenchymal stem cells are (MSCs) considered a good sources for regenerative therapy, because possess self-renewal and multilineage differentiation potentials. MSCs were identified and isolated from bone marrow, placenta tissue, amniotic fluid, umbilical cord blood, adipose tissue, dental pulp, periodontal ligament, exfoliated deciduous teeth, dental follicle etc. The aim of this study was to compare MSCs from palatal tissue and umbilical cord blood in terms of morphology, proliferation and migration capacity as well as trilineage differentiation capacity. Umbilical cord blood MSCs shown higher proliferation capacity but no phenotypic and morphological differences were observed. The number of colony forming unit-fibroblast for umbilical cord blood derived MSCs was significantly higher than that of palatal tissue derived cells. A higher population doubling time and reduced migration potential were recorded in palatal tissue derived cells, but both cell lines demonstred trilineage potential after 21-28 days of induction.

**Key words:** mesenchymal stem cells, differentiation, CFU-F, regenerative therapy

## A STUDY REGARDING ANTIMULLERIAN FACTOR'S ACTIVITY IN BASSET HOUND PUPPY MALES YOUNGER THAN 120 DAYS

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### Summary

Persistent müllerian duct syndrome (PMDS) is a congenital disease, frequent in many breeds (especially miniature schnauzers and basset hounds) and is defined by the presence of the body, uterine horns and oviducts (in some cases), in fertile males. In most cases, PMDS evolving subclinical thus difficult to suspected in the absence of obvious characteristic symptoms. Antimüllerian Hormone (AMH) - a family member transforming growth factor  $\beta$  (TGF- $\beta$ ), is known primarily for its role in regulating the differentiation of male embryonic period. Thus, the hormone produced by Sertoli cells, induces regression of fetal müllerian ducts, primordial elements of the female reproductive tract and thereby contributes to the normal development of male genitalia. The aim of this study was to evaluate the AMH activity in the first 120 days of life in basset hound puppy males suspected being affected by PMDS. The study was conducted on 9 male canine patients, pure breed Basset Hound. Age subjects of this study were 8 weeks for five individuals and five weeks for the rest of them. Blood samples without anticoagulant were taken in vacutainers without clot activator and serum was separated by centrifugation. All samples were analyzed on the day of harvest. In order to establish AMH concentration in subjects included in the study, we used immunochemical methods of analysis electrochemiluminescence (ECLIA). US in B-Mode: all underwent ultrasound males after the age of one year (minimum age required for the realization of diagnostic imaging PMDS), in order to establish the status of the subjects included in the study. Analyzing data obtained from the determination of serum AMH we observed a significant variation in the level of activity of this factor, the values were between 12.8 respectively 114.3 ng / ml serum. The mean value was 49,14 ng/ml serum. Of the nine males examined, one of them was diagnosed positive during by ultrasound exam. Uterine body and the rudiments of uterine horns located on the medial aspect of the vas deferens were identified. In this male also found low activity AMH serum concentration was below the limit of 15 ng / ml (12.8 ng / ml). AMH causes apoptosis of specific Anti-Müllerian inhibiting substance (MIS) receptor-bearing cells, while having no effect on cells without receptors. In dogs, inadequate embryonal AMH activity can lead to the Persistent Müllerian duct Syndrome (PMDS), in which a rudimentary uterus is present and testes are usually undescended. The AMH gene (*AMH*) or the gene for its receptor (*AMH-RII*) is usually abnormal. AMH measurements have also become widely used in the evaluation of testicular presence and function in infants with intersex conditions and cryptorchidism.

**Keywords:** antimüllerian hormone, persistent müllerian duct syndrome, dog

**REACTION TO HUMANS IN TETHERED STALLIONS USING  
QUALITATIVE BEHAVIOURAL ASSESSMENT**

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**Summary**

Qualitative Behaviour Assessment uses qualifying terms to describe how the animal interacts with the environment in certain situations, considering that the dynamic style (body language) adopted reflects the animals' previous experiences. This type of assessment is more difficult if the animals' reactions are restricted by tethering, but using well-defined descriptors it is possible. The aim of this study was to reveal if there are breed related differences regarding the reactions towards familiar and unfamiliar humans in stallions housed in tethered conditions. A total number of 34 stallions were assessed, comprising 16 Lipizzaner and 18 Romanian draft horses. All the stallions were managed in similar environmental conditions, being housed in the same barn of the same farm. A standardized assessment protocol was designed for the study, employing predefined descriptors in order to qualify the stallions' reactions. Even if not statistically significant, several differences were found in the stallions' human related reactivity, depending on their breed and especially on familiarity to the person involved in their testing. The results of the study suggest that the horses' welfare quality can be improved by achieving a better human-animal relation. Moreover, this study proves that the behavioural responses of the horses towards humans can be recognized even if the animals are restricted by tethering.

**Key words:** qualitative behavioural assessment (QBA), human-animal relationship (HAR), stallions, tethered housing

**VETERINARY RECORDS AND OWNERS PERCEIVED HEALTH PROBLEMS IN HORSES: AN EPIDEMIOLOGICAL STUDY**

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**Summary**

The epidemiological study represents an important tool in all the veterinary databases worldwide. The aim of this study was to compare the evidences recorded in veterinary registers with the perception of the horse owners, regarding the health problems of their animals during one year. The records of a veterinary practice were consulted and all the data about treatments applied to horses during the past year were grouped by disease diagnostics and also by treatment length. Using a questionnaire, the horse owners in the same veterinary practice were asked to remember and declare all the treatments applied by the veterinarian to alleviate the health problems of their animals in the past year. The prevalence of certain diseases and the duration of the necessary treatments were calculated from the veterinary record and from the declarations of the horse owners, than the obtained data were compared. This procedure revealed significant differences between the two different data sets. Besides these results, the paper also discusses the possible reasons for the differences obtained. The information gathered by this study, the first one of this type in Romania in our knowledge, can present an indication on the perception of horse owners regarding the disease episodes experimented by their horses.

**Key words:** horses, disease prevalence, veterinary records, questionnaire

## **GROSS ANATOMY OF DIGESTIVE SYSTEM IN EASTERN GREY KANGAROO (*MACROPODIDAE* FAMILY)**

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### **Summary**

Mammal's millennial evolution led to adaptive anatomical changes of each species. The main feature of marsupials is based on their particular reproductive system. Also, what differentiates from placental mammals is their digestive anatomy. The present research aims to provide a detailed morphological description of the digestive tract in kangaroo (Eastern grey kangaroo, Macropodidae family).

Kangaroos are strictly herbivores mammals. Oral cavity is characterized by the presence of three sets of upper incisors, dentition being of polyphyodont type. The slender, long esophagus presents longitudinal folds on its internal surface. The large stomach is the main component of digestive tract where microbial fermentation takes place. The stomach is divided in two distinct segments: anterior and posterior. The great curvature has a notched pattern and the small curvature is relatively flat. The first, anterior segment, more developed is composed from a small sacular segment, blind ended; "S" shaped which is separated from the posterior segment by an obvious fold. The posterior spiral segment has a storage function. External conformation is marked by the presence of three muscular bands which delimited correspondent haustra, giving the stomach "colon" like appearance. Small intestine is relatively long compare to the colon which has fewer and small haustra. The cecum is well defined. In conclusion, even if the kangaroos share the same type of digestion with the ruminants, major differences exist in anterior digestive tract especially in stomach morphology. The anatomical particularities of digestive tract of kangaroos are the response of their needs to increase fiber digestibility for easy subsequent absorption of nutrients.

**Key words:** kangaroo, anatomy, digestive system



**DEEP PECTORAL MYOPATHY (GREEN MUSCLE DISEASE) IN A  
HOUSEHOLD REARED AND SLAUGHTERED BROILER  
CHICKEN – A CASE STUDY**

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**Summary**

Deep pectoral myopathy is considered a degenerative disease and a great challenge for the broiler meat industry. The disease appears as a surprise before preparation because of the unpleasant aspect. This gets a lot of consumer complaints. Even if the consumer safety is not jeopardized the raw meat is organoleptic compromised and unfit for consumption. The paper describes a case of deep pectoral myopathy in a broiler chicken reared in backyard conditions in order to offer important information in the disease recognition, especially for the public consumer. Visual inspection carried out on the sectioned breast level revealed bilateral macroscopic modifications consisting of a well delimited greenish color of the breast muscle with slightly friable consistency, crumbly and dry look. The disease diagnosis was established on the basis of the presence of characteristic color changes (green) at the muscle level. In addition, histopathological examination showed characteristic lesions including necrotic and hyalinized muscle fibers with discoid degeneration and frontier mesenchymal reaction. Data presented in the current case study are of public interest, with important contributions to the knowledge of consumers about this "hidden disease".

**Key words:** myopathy, pectoral, grouse, friable

**THE ROLE OF LYMPH NODES PATHOLOGICAL LESIONS IN  
ASSESSING THE EVOLUTION OF RESPIRATORY PRRS  
SYNDROME**

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**Summary**

Pig reproductive and respiratory syndrome (Porcine Reproductive and Respiratory Syndrome - PRRS) is a disease infectious with viral etiology, characterized by symptoms and lesions localized to the respiratory and genital tract. After the official reporting in the U.S. in 1987 the disease quickly spread being reported in Germany and the Netherlands and subsequently in many countries.

In 1998, the disease was officially diagnosed in Romania, currently having widespread in intensive swine both sows and the young after weaning, causing significant economic losses.

The research covered in this paper was performed in order to elucidate the pathological lesions found in young swine after weaning in respiratory location.

**Key words:** PRRS, lymph nodes, pigs.

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**Summary**

The welfare of dairy cows was assessed for 106 cows from three farms: A (38), B (21) and C (47). In all the three farms cows were kept in loose housing and milking was done in the milking hall. WQ evaluation system was used and found that cows that did not allow approaching and touching were 37% in farm A, 38% B and 11% in farm C. And those that did not allow the approaching to less than 1m were 37% in farm A, 24% in farm B and 66% in farm C. These differences can be explained by the fact that in farms A and B housing lots were almost equal to the number of cows compared to farm C where the populating degree was only halfway.

Animal welfare is a controversial and yet not completely defined issue. One of the definitions refers to the effort the animal puts into dealing with the environmental conditions, within the group it is part of, maintaining the reproductive functions and the productive potential. One of the used criteria in assessing welfare is the relation between man-animal, studied in this paper.

**Key words:** welfare cow, human-animal relationship

## **MAINTAINING THE OPTIMUM MICROCLIMATE BY ENSURING THE REQUIRED AIR VOLUME**

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### **Summary**

Providing air volume for each animal is a necessity because on this parameter depends the shelter microclimate, health and, implicitly, the animal production. We have studied three farms: farm A with 100 dairy cows, farm B with 2000 swine and farm C with 65,000 laying hens. For a better assessment, everything was expressed as LU (livestock unit) resulting 730. Farm A (100), B (370) and C (260).

In the cow farm, because of the great volume of the housing, location and natural ventilation, there were no problems with providing the necessary air volume.

In the pig farm, it was constantly needed to adjust the sensor and correlate their flow with the external temperature.

In the poultry farm, in addition to modifying the moment of manure evacuation, it was required the setting, that is the connecting or disconnecting of the fans in order to try to maintain an optimum microclimate.

**Key words:** effective temperature, cow, pigs, poultry

## PLURIPOTENT STEM CELLS FOR CARDIAC REPAIR AND RECELLULARIZATION

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### Summary

The adult human heart has very limited capability to regenerate and that is why it is necessary to determine the optimal, effective and safety cardiac cell therapy in different cardiac diseases such as in myocardial infarction.

Using stem cell – based therapies for people suffering an acute myocardial infarction or those with congestive heart failure has encountered the imagination of both the medical and public individuals. For these porpoise human embryonic stem cells (hESC), pluripotent stem cells, and human induced pluripotent stem (iPS) cells are important sources for different methods used for cardiac repair and most recently for creating a bioartificial heart by decellularization and recellularization. For example human ES cells can differentiate into spontaneously beating cells with a cardiomyocyte phenotype. Other potential sources of cells which are used for cardiac repair are the autologous skeletal myoblasts because of their biological properties. Bone marrow stem cells promote cardiomyocyte and endothelial cell formation after myocardial infarction and congestive heart failure. Mesenchymal stem cells can differentiate into cardiomyocytes and endothelial cells in vivo after transplantation in both noninjury and with myocardial infarction hearts. Hematopoietic stem cells (HSCs) are multipotent stem cells, which can also have the capacity to differentiate into a number of cells, including cardiomyocytes and endothelial cells. It has been discovered that the heart has endogenous regenerative potential by resident cardiac stem cells. Umbilical cord blood (UCB) is an important source of both hematopoietic stem cells and mesenchymal precursor cells. Other important sources are induced pluripotent stem cells which are reprogramed adult somatic cells into pluripotent stem cell lines that can differentiate into functional cardiomyocytes. Using stem cells for cardiac repair and recellularization of bioartificial hearts is a real challenge for both researchers and clinical practitioners. Herein we review the current status of the cardioregenerative role of pluripotent stem cells.

**Key words:** bioartificial heart, cardioregenerative, cardiomyocyte, recellularization, stem cells