

**UNIVERSITY OF AGRONOMICAL SCIENCES AND  
VETERINARY MEDICINE - BUCHAREST  
FACULTY OF VETERINARY MEDICINE**



**SYMPOSIUM  
„CONTRIBUTIONS OF SCIENTIFIC RESEARCH TO THE  
PROGRESS OF VETERINARY MEDICINE”**

**INVITATION**

**PROGRAMME and ABSTRACTS**

**November 18<sup>th</sup> -19<sup>th</sup> 2010**

## **Organizing Committee:**

**PRESIDENT,**  
Prof. Gabriel PREDOI, DVM PhD

### **Members:**

Professor C. VLĂGIOIU, prorector UASVM  
Professor Manuella MILITARU, prodean FVM  
Professor Doina DANEȘ, prodean FVM  
Associated Professor T. LEAU, prodean FVM  
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Lecturer Florin FURNARIS  
Lecturer Iuliana IONAȘCU  
Lecturer Niculae TUDOR

**SCIENTIFIC SECRETARY FVMB**  
Professor N. CORNILĂ, DVM PhD

**Mr. (Mrs.)**

.....

We have the great pleasure to formally invite to participate, together with your collaborators to our symposium entitled “CONTRIBUTIONS OF SCIENTIFIC RESEARCH TO THE PROGRESS OF VETERINARY MEDICINE”, held to Bucharest, Faculty of Veterinary Medicine, November 18<sup>th</sup> – 19<sup>th</sup> 2010.

Cordially,

**Dean,**

**Prof.univ.dr.Gabriel PREDOI, DVM, PhD**

**Scientific secretary,**

**Prof.univ.dr.Nicolae CORNILĂ, DVM, PhD**

## SYMPOSIUM PROGRAM

### **November 17<sup>th</sup>, 2010**

17:00 – 19:00 - Accommodation and registration of Romanian and foreign guests

### **November 18<sup>th</sup>, 2010**

8:30 – 9:15 - Guest reception and registration

9:15 – 9:45 – Symposium opening and Dean speech

Aula „Prof. Dr. Aurel POPOVICIU”

**10:00 – 11:15 – HONORIS CAUSA AWARD CEREMONY: PROF.DR. CLAUDIO GENCHI**

11:15 – 11:30 – Coffee break

**11:30 – 12:30 - Plenary session**

12:30 – 14:00 - Lunch

**14:15 – 17:30 - Concurrent scientific session, oral presentations Building A**

Section I – **N. Stamatini Hall**

Section II – **Al. Locusteanu Hall**

**17:30– 18:30 – Poster session I, II, III**

Building A - **FIRST FLOOR**

**19:00 - Gala dinner, Restaurant Salon albastru -USAMVB**

### **November 19<sup>th</sup> 2010**

**10:00 – 12:00 – Workshop - Alexandru. Locusteanu Hall**

12:00-12:30 Coffee break

**12:30 – Closing session, Al. Locusteanu Hall**

13:30 – Cocktail

15:00 - Guest departure

## PLENARY SESSION

November 18<sup>th</sup>, 2010

11:30 – 12:30

Aula „A.E. POPOVICIU,, Ground floor of Preclinic Department  
building

Chairman: NICOLAE CORNILĂ

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Professor Manuella MILITARU

Professor I. ȚOGOE

Associated Professor Elena MITRĂNESCU

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18. 11. 2010, 14:15 – 17:30

Moderators:

Professor Cl. GENCHI  
Professor L. LEONARDI  
Professor I. GROZA  
Professor A. BÎRȚOIU  
Professor Doina DANEȘ

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(PRECLINICAL SCIENCES)**

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18.11.2010, 17:30 – 18:30**

**Moderators:**

**Professor Maria CRIVINEANU**

**Professor Aneta POP**

**Professor N. DOJANĂ**

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**BUILDING A (FIRST FLOOR) 28 –50  
18.11.2010, 17:30 – 18:30**

**Moderators:**

**Professor C. CULEA**

**Associated Professor Iuliana NEAGU**

**Associated Professor L. TUDOR**

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**WORKSHOP**  
**on**  
**VETERINARY EDUCATION**

**19.11.2010, 10:00 – 12:00 Building A, First Floor,  
Al. LOCUSTEANU Hall**

**Moderators:**

**Professor dr.Gabriel PREDOI**  
**Professor dr. Aneta POP**

**COMPUTER-AIDED EDUCATION IN VETERINARY MEDICINE**  
(POSDRU/86/1.2/S/63654)

**STUDENTS' PERCEPTIONS OF LINKING THEORY TO  
PRACTICE IN VETERINARY CURRICULUM**  
(POSDRU/90/2.1/S/63915)

# **ABSTRACTS**



## **ANATOMICAL AND RADIOLOGICAL PARTICULARITIES OF THE AUTOPODIUM AT THE DOMESTIC SOLIPEDS**

**ADRIANA ALISTAR, G. PREDOI, C. BELU, C. VLAGIOIU**  
Faculty of veterinary medicine Bucharest

The carpal bones at donkey in generally have the shape similar to those of the horses. The most important difference is the flattening of the articular surfaces of the proximal row. The capitata connections with the second meta-carpus are extremely low or even absent. The main meta-carpal at donkey is narrower and less flattened than at the horse. The corresponding surface of capitata bone is more flat. The rudimentary meta-carpus are relatively longer than at the horse. The phalanx I is narrower, appearing longer than at the horse. There is also a reducing of the depth to the median groove on the proximal end. The small sesamoid is shorter and thicker, and the third phalanx is transversely narrower comparative with the one at the horse.

## **INFLUENCE OF COPPER AND ZINC SUPPLEMENT ON HOCK LESIONS SCORE IN ROMANIAN BLACK PIE DAIRY CATTLE**

**ALINA ANTON, G. SOLCAN, F. ROLLIN**  
USAMV Iasi University from Liege, Belgium

A 20 weeks follow-up was undertaken in a farm from Iasi in Romania, on four equal groups of ten Romanian Black Pie dairy cattle (copper, zinc, copper-zinc and control groups) 10 to 50 days in milk, with the aim of evaluating the hock lesions score and of correlating these score with their zinc and copper status according administration of these trace elements in the form of sulphates (2 versus 8,5 ppm copper and 9 versus 42 ppm zinc).

Of the 40 cattle examined, 22 (55%) had the hocks periartthritis of which 21 multiparous and one primiparous (group Copper-Zinc). During the study, hock lesions score showed higher values in cattle from Control group compared with cattle that received mineral supplements, the differences being statistically significant ( $P < 0.05$ ). The tarsal periartthritis did not significantly affect plasma copper and zinc. A high percentage of the hocks periartthritis in a farm signifies a stall too short, too narrow with insufficient bedding and slatted floors. Adding bedding several times per week may reduce the incidence of hock lesions.

## **CITOMORPHOLOGY OF DOG CANCERS**

**EMILIA BALINT, N. MANOLESCU**

Faculty of Veterinary Medicine Bucharest,  
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The authors present six rare cases of tumors in dogs diagnosed in the Medical Clinic of the Faculty of Veterinary Medicine Bucharest based on the citomorphological exam. These are:

- Histiocytic sarcoma with gigantic nucleolus
- Tiroidian adenocarcinoma with gigantic cells
- Chorioepithelioma
- Sympathoblastoma
- Leydig cells tomours
- Sensorial cells carcinoma on the middle ear

We consider these tumoral forms diagnosed by us rare because they are not quoted very often in the veterinary literature. The importance of the citomorphological exam results from the possibility of a clear diagnosis, but also from the differential with other tumoral forms.

## **HISTOPATHOLOGICAL, IMMUNOBLOTTING AND IMMUNOCYTOCHEMICAL ASPECTS IN SCRAPIE**

**FLORICA BĂRBUCEANU, N. ALEXANDRU, Ș.NICOLAE,  
DANIELA DRAGOȘ, CRISTINA DIACONU, DANIELA  
DENIȘAN, GABRIEL PREDOI**

Institute for Diagnosis and Animal Health - Faculty of Veterinary  
Medicine, *Spiru Haret* University, Bucharest - Faculty of Veterinary  
Medicine, USAMV Bucharest

As it is known, scrapie, widely regarded as the prototype heterogeneous group of transmissible spongiform encephalopathies (TSEs) in ruminants so feline, mink, deer and humans, was first diagnosed histologically and then by immunohistochemistry. The presence of PrP<sup>sc</sup> was demonstrated both in different segments of the brainstem and in some mucosal associated lymphoid structures.

This paper provides a comparative assessment of the presence of PrP<sup>sc</sup> and specific changes of the neuropil and pericaria in certain anatomic nuclei of the spinal bulb of sheep in relation to scrapie diagnostic significance. The researches have been conducted on a total of 17 cases of scrapie in indigenous sheep, the disease being confirmed histologically and immunohistochemically.

Research result of histological, immunoblotting and immunohistochemical showed significant comparative aspects for the diagnosis of scrapie, while the structures identified and subjected to further investigation of PrP<sup>sc</sup> by Western blotting method of differentiation, were relevant for the classical type of scrapie.

## **THE NEED FOR PROGRESS IN VETERINARY MEDICINE BETWEEN 2020-2050-2100 THROUGH SOCIAL KNOWLEDGE BASED ON SCIENTIFIC RESEARCH AND TECHNOLOGICAL INNOVATION**

**BOGDAN, A.T., PREDOI, G., CORNILA, N., SONEA, A.,  
IONITA, L., IVANA SIMONA, IPATE IUDITH, TOBA, G.F.**

Romanian Academy - National Institute of Economic Research,  
Research Center for studies in Agrosilvic Biodiversity "Acad. David  
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In 2011, the Romanian veterinary medicine celebrates 150 years since the establishment of the country's first veterinary school. This happily coincides with the celebration of the World Veterinary Day. Nowadays, Doctor of Veterinary Medicine is one of the highest-ranking professions.

Veterinary Medicine has been developed continuously into a complex science covering specific aspects: veterinary care and laboratory diagnosis, food production, control and innovative biotechnologies, each having the research and development base needed for comparative ecosanogenesis.

The present paper presents the evolution of and impact exerted by some aspects manifest in the years 2020-2050-2100, namely the population growth, the climate change and ensuring the food and energy support, in which the veterinary medicine, alongside other professions, will stay in the front line of the science of knowledge, based on technological innovation in the first place, sciences that provide economic and bio-economic solutions for the well-being of mankind in the years 2020-2050-2100 (according to prospective research conducted by the UN, FAO, the World Bank and other prestigious international institutions)

## **INVESTIGATIONS ON THE IMMUNOLOGICAL PROFILE, BY POTENTIATION OF IMMUNE RESPONSE IN RABBITS ,USING IMMUNOMODULATORS**

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Immunological responses of the body was followed ,as a result of potentiation with unspecific immunomodulators , to the immune response induced by vaccination against the rabbit haemorrhagic disease (specific immunomodulation) in rabbits reared in semi-intensive system. There were tested 30 rabbits in the form of three lots from the age of 180 days.

Lot 1 was used only as a witness being subjected to vaccination against rabbit haemorrhagic disease. In group 2, the animals received vitamin E and selenium, Romselevit product using a dose of 0.1 ml / kg. In group 3, animals received vitamin E and selenium using Romselevit product, the double dose. The two experimental groups were subjected to vaccination against the rabbit haemorrhagic disease.

The results obtained confirm the existence of an immunomodulatory action after treatment with vitamin E and selenium in normal doses, with positive influence on the immune status in rabbits. WBC counts presented at the end of the experiment, a striking decrease in statistical terms, in the group that received E and selenium, and the results confirmed the existence of an immunomodulatory action after treatment with vitamin E and selenium in normal doses, with positive influence on immune status in rabbits with high dose, compared with other groups. Immunostimulation by vitamin E and selenium increased the percentage of lymphocytes, in inverse proportion to the percentage of neutrophils, which fell from the same batch, the effect is increasing the percentage of antibodies against the rabbit haemorrhagic disease.

## **EPISOD OF PRRS - EPIDEMIOLOGICAL AND CLINICO- LESIONAL ASPECTS**

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Pig farmers have still serious problems with respiratory conditions contained in the so-called "porcine respiratory disease complex (PRDC), which is an interaction between viruses, bacteria, suppressed immune system and stress. PRDC has multiple etiology, which may include bacteria (*Mycoplasma hyopneumoniae*, *Pasteurella multocida*, *Actinobacillus pleuropneumoniae*) and viruses (Aujeszky virus, virus, porcine reproductive and respiratory syndrome (SRRP), influenza virus, transmissible gastroenteritis virus and respiratory coronavirus). The paper deals with epidemiological and clinical aspects lesion in an episode of porcine reproductive and respiratory syndrome (SRRP) wich has recently evolved in pigs exploited intensively.

## **TRANSMISSION OF *LISTERIA* SPP. BY FOOD PRODUCTS FROM ANIMAL ORIGIN**

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The *Listeria* genus is constituted of six species: *L. monocytogenes*, *L. ivanovii*, *L. innocua*, *L. welshimery*, *L. seeligeri*, and *L. grayi*. All of these species are found in the environment and only *L. monocytogenes*, resistant to low temperatures, is potent pathogen for human and animal organisms.

Different commercial food products (raw milk and diary, vegetables, raw meat, poultry and fish), as well as fast food preparations are frequently contaminated by *Listeria* germs and prove to be the source of *Listeria* infection manifested by different clinical

aspects of listeriosis (septicemia, meningitis, encephalitis, abortive disease), as result of the digestive transmission of these germs to humans.

By its implication in the public health, the contamination of food by *L. monocytogenes* raises an important economic problem concerning the food industry. The presence of *Listeria* spp. proved to be a useful indicator during all the stages of the food processing chain.

A total number of 56 strains of *Listeria* spp. were investigated for identification/confirmation. These strains were isolated from animal meat (sausages and other pork and beef preparations), poultry and diary products.

The bacterial identification included morphological (Gram staining, microscopic examination, motility, oblique illumination of colonies on blood-free agar) and biochemical (catalase, beta-hemolysis on 5% sheep blood agar, CAMP test, trehalose, mannitol, manose, rhamnose, xilose reactions) methods. *L. monocytogenes* strains were serotyped for serovar identification.

The investigations finally revealed: 7 strains (26.92%) *L. monocytogenes* (out of which 6 strains *L. monocytogenes* serotype 1a and 1 strain *L. monocytogenes* serotype 4b), 16 strains (61.53%) *L. innocua*, 1 strain (3.84%) *L. grayi*, and 2 strains (7.69%) *L. welshimery*.

## **A COMPARISON BETWEEN THE TOTAL GERMS NUMBER (TGN) ISOLATED FROM THE MEAT OF THE FOOD SNAILS COLLECTED FROM THREE DIFFERENT AREAS**

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Lately, in our country, the food snail *Helix pomatia* is much appreciated. Many people began to raise this specie in organized farms. The snails are processed or exported. *Helix pomatia* as a food snail can be collected from different areas: gardens, forests and farms, so our purpose was to see if there is a difference between the total germs number isolated from their meat, according to their growing area. The methods we used are: the serial decimal dilutions method and the inoculation on several media. High values of CFU/g were found in the meat of the snails collected from all the areas, due to their ecology. The values of the CFU/g isolated from the meat of the farm snails were lower than the values of the CFU/g isolated from the garden and the forest snails. This fact may be related to the fact that in farms, the snails are raised in a controlled environment, with more hygienic conditions.

## **THE CHARACTERIZATION AND IDENTIFICATION OF SOME MICROORGANISMS ISOLATED FROM THE MEAT OF THE FOOD SNAIL *HELIX POMATIA***

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Lately, the food snail *Helix pomatia* is very appreciated in our country. Many people raise it in farms and they also export the snails. Still, their microbiology has not been properly studied in Romania until now. This study's purpose was to isolate microorganisms from the snails meat on different media, to observe the colonies morphological aspects and to identify the isolated species. The colonies aspects were various, according to the medium on which they have grown. The predominant bacteria that we have identified in the snails meat belong to the genus: *Citrobacter*, *Pseudomonas* and *Enterobacter*. On only one medium for pathogenic bacteria, Chromogenic *Listeria* Agar, we could notice the growth of colonies, identified as *Listeria monocytogenes* and *Listeria innocua*. On the Sabouraud medium two species of fungi have grown: *Cladosporium* and *Chrysosporium*. Further researches are required in order to establish the influence of these microorganisms on the consumer's health.

## **IMPLEMENTATION OF A MASTITIS SURVEILLANCE AND CONTROL SYSTEM IN A DAIRY FARM**

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Mastitis continues to be a major cause of economic loss to the national dairy herd and combined with teat injuries it is one of the greatest aggravations to the herdsman management. Mastitis affects the farmer economically in two ways: through direct costs (discarded milk, drugs and veterinary costs) and indirect costs (decreased milk yield during remainder of lactation due to udder damage and subclinical infection, penalties because of increased cell count, extra labour requirements for treating and nursing, higher culling and replacement rates leading to loss of genetic potential, deaths. The purpose of this study is to evaluate the implementation of a mastitis surveillance and control system in a dairy farm. The infectious pressure was higher in groups 4 and 8, consequences of poor foets (60 and 55% notes of 3+4) and udders hygiene (65 and 25%). The resistance to infectious pressure is variable depending on body condition score and environmental condition; the holstein and red holstein cows (groups 2,3 and 8) had 15, 21 and 15% BCS values below 2,75 wich shows low resistance to the action of infectious agents. Was found failure in milking hygiene and average time for preparing and attaching the last cluster was 50 seconds (higher that limit of 30 seconds). Incidence of subclinical mastitis was higher in groups 2 and 6 (30

and 65%); clinical incidence has cross the limit (3%) in groups 2,3,5,6. This mastitis surveillance and control system can be used successfully in a small or large dairy farm.

## **FACE-TO-FACE AND ONLINE PROFESSIONAL COMMUNITIES FOR VETERINARY PRACTITIONERS AND STUDENTS – A STUDY USING A FOCUS GROUP**

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Web 2.0 is now the new concept, being generally understood as a group of web-based technologies which enable interactivity, creativity and information. Wikis, discussion boards, postcasts are the most popular tools, being readily implemented in medical education. This paper presents a focus group-based study conducted to investigate the perception of veterinary students and practitioners towards the face-to-face and online professional communities, as well as learning needs, current familiarity and use of Web 2.0 technologies to support their informal and lifelong learning. The recruitment of 10 students and 10 practitioners was followed by the answer to a structured questionnaire and aimed to provide information about face-to-face and on-line communities: communities participated in, reasons for participation, activities during participation, other communities known about, but not participated in, barriers to participation in communities in, challenges to participation in communities mentioned in, support required for participation. Students and practitioners declared that they are member of several face-to-face and online communities. Vets take part in a larger group of communities than students and both groups presented a larger interest in on line communities. Both categories of the focus group presented several similarities concerning the activities in face-to-face communities, social aspect being dominant and vets having a higher implication. Students are clearly opened towards online communities; they currently use different web-based tools for learning and pleasure. Both groups indicated several communities that they were aware of but did not participate in, and identified common barriers such as professional interest, cost and time related issues. The challenges were similar for both students and practitioners, but different between face-to-face and online communities. Challenges to face-to-face communities include cost, timing and the lack of professional expertise into a narrow specialty. Online communities are frequently suspicioned by technical issues, knowledge and issues of erroneous information. Financial support of the employer or faculty was frequently featured in most answers for face-to-face communities; technical assistance was required for online communities.

## **CONTRIBUTION IN *PASTEURELLA* SPP. DIAGNOSTIC AND TREATMENT ON RABBIT**

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The aim of this study was the isolation and the identification of the microbial agents involved in a rabbit's respiratory acute syndrome in an animal facility from an institute that uses rabbits for diagnostic serum product, for the control of biomedical products and for research. The diseases were started in a conventional area, at the beginning of the cold season and in 2-3 days 60% of the animals were involved. The most important clinical signs were the respiratory disturbing and the multiple edemas of the ears. From dying rabbits were taken bacteriological exam samples from nasal mucous, trachea, lung, heart, liver, bone and blood and for histopathological exam samples were taken from nasal mucous, trachea, lung, heart and liver. At bacterioscopic exam was put in evidence Gram positive cocci and Gram negative cocobacilli. For the isolation and identification of the microorganisms we are use, the cultivation on usual and special culture for *pasteurella*, *staphylococcus* and *streptococcus*. It was isolated in pure culture *Pasteurella multocida* from bones and *Staphylococcus aureus* from nasal mucous of rabbits and both bacteria from 3. The pathogenity was tested on NMRI mice by intraperitoneal inoculation of 0,5 ml suspension per mouse. The individual treatment was done with injection enrofloxacin and the treatment of all effective was done with amoxicillin in water. It was also made a bivalent auto-vaccin with the two microbiane strains isolated.

## **RESEARCHES REGARDING THE BODY SIZES DYNAMICS DEPENDING ON AGE IN RAINBOW AND SPRING TROUT**

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Due to its fast growing rhythm and also the efficient food using coefficient, the rainbow trout, or the American trout as it is called, has become the favorite fish in the consumption salmon fish breeding field. The present paper had in view the study of the body sizes dynamics in rainbow and spring trout, depending on their age. The researches were carried out in Pucioasa trout breeding unit, on the young and adult livestock. The young individuals reached a mean body weight of 38, 29±2, 89 grams and a mean body length of 13, 55± 0,905 cm at one year age and the adult individuals reached the mean body weight of 128, 37 grams and the mean body length of 26,7cm.



# **ROMANIAN MILITARY VETERINARY MEDICINE IN SURROUNDING OF THE FIRST WORLD WAR**

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The policy of active neutrality promoted by Romania between in 1914-1916 led to diplomatic actions undertaken by the Romanian government with a view to joining the Entente. The call to arms of 1916 represented a number of military men 7 times larger than the effectives in time of peace and the number of horses for the cavalry divisions was 281,210.

Before the First World War both the military and the civilian veterinary services were under the jurisdiction of the Human Medical Service. In order to receive the autonomy of the military veterinary service, then depending on the Military Medical Service, there was the need for an intense managing activity.

Separating the two services, medical and veterinary, was accomplished much later, through the law regarding the modification of the organizing and functioning of the Minister for National Defense, when the Military Veterinary Service is given autonomy by the founding of an autonomous Veterinary office.

Building in 1900-1901 a military veterinary hospital in Bucharest was a very important accomplishment during the time of Lt.-col. Nicolae Bădulescu as veterinary in chief of the army. The hospital comprised the following units: surgery, internal medicine and contagious disease and included a consultation service as well as a pharmacy and a laboratory with 2 units: bacteriology and pathological anatomy and biochemical tests. It included a library and a bacteriological and pathological anatomy museum which provided teaching and practical materials, horse orderlies, schools functioning next to the military veterinary hospital; this was where courses for the reserve veterinary officers took place.

## **ANATOMICAL STUDIES REGARDING THE VASCULAR SYSTEM VENOUS OF MAMMARY GLAND IN BUFFALO COW**

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Due to the mammary gland's specific functionality – milk production, the complexity of its own vascular system is explainable from the morphological point of view. Our observations regarding the circulatory venous system of the udder were performed by

taking into account the dry period (nonlactating period) and/or the functional activity of this gland. In consequence, the caliber size modifications of the mammary veins were well noticed, aspects that did not have as a result the morpho-topographic changes of the venous vascular system. Taking into account the above mentioned specifications, a major particularity of the venous vascular system of this organ is represented by the sinuous aspect of its trajectories and also the size caliber changes that led to an obvious sacculation, especially in the large caliber vessels.

Our study was developed by using and observing ten mammary glands isolated from buffalo cows sacrificed for commercial purposes. The procedure consisted of introducing a tube into the arterial vessels' lumen, through which we then injected a special material, consisting of the industrial product Palux and a red dye. The injected mammary glands were kept in 2% formaldehyde for 24 hours and then dissected, a process that was done both by direct observation and by using a magnifying glass, to enable a more accurate study of our samples.

## **COMPARATIVE HISTOLOGICAL STUDIES OF THE SEMINAL LINE CELLS AT BOAR 10-70 DAYS**

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At the age of 10 days, the seminiferous tubules are small and disseminated in a mass of connective tissue developed. Within the tubules were highlighted two types of cells and cells gonocytes support.

In histological sections of testis taken from boars of 14-28 days, there is an increase in the average number of cells and gonocytes support. In this age period were not reported degeneration of gonocytes. There was an increase in the number of mitoses which included 4-6% of gonocytes examined.

At 42 days, apart from increasing the number of gonocytes into mitosis and cell growth appears degenerate. Seminiferous tubule lumen is almost shaped, are tunneled seminiferous tubules, and vasculature develops.

At the age of 70 days with gonocytes seminiferous tubules are present in the spermatogonial observed.

## **MICROSCOPIC MORPHOLOGY OF THE SEMINAL LINE CELLS AT THE AGE OF 35 DAYS ON SMEARS AND TESTICULAR FINGERPRINT**

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Study of testicular imprints at 35 days stained by the method Toluidines Blanco revealed the presence of spermatogonial binucleate and multinucleated.

Type A spermatogonial dusty have nuclear chromatin with powdery appearance.

They divide mitotic and generate a spermatogonia by type A, which will continue to fulfill the role of stem cell for the line seminal and a spermatogonia intermediary.

The study of testicular imprints found this first-order spermatocytes and a spermatocytes by the second order.

The study of boar Leydig cells from testicular imprints multiple was observed the presence of nucleus multiple vacuolated in its peripheral area.

These cells appear polyhedral, irregular, nucleous are large, spheroidal, place eccentric with chromatin dense located peripheral, with nucleolus distincts, adjacent of nuclear membrane.

The study of testicular smeras using Bensley stain has revealed the presence of Leydig cells, some binucleate with nucleus polarized eccentric.

## **KINEMATIC MOTION ANALYSIS OF THE FORELIMBS IN HEALTHY DOGS**

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The aim of this study was to establish the most effective method of kinematic analysis in determining kinematic patterns of the thoracic limb joints in large breed dogs.

For this purpose two systems were used: first - APAS system - is based on video recording of passive reflective markers movements, markers that are fixed on reference points of subject' limbs (videography) and the second is based on measuring the propagation time of an ultrasonic pulse. Although Zebris cell offers good results for humans' gait, irrespectively of assessed subject disease, in dog's case permitted only the general data registering. APAS system proved to be a reliable technique which permits 3D kinematic assessment of dogs' gait.

## **LYMPHATIC DRAINAGE OF THE CRANIAL (T1) AND CAUDAL (T2) THORACIC MAMMARY GLANDS IN THE DOMESTIC CAT**

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The study initiated by us aims to describe, interpret and elucidate several aspects regarding the topography, the morphology and the drainage of the mammary lymphatic circulatory system in the domestic cat.

We have compared our results to data from specialized literature to determine what is common norm, individual particularity or aspects that have not been previously described regarding the radiographic indirect lymphography and the mammary lymph drainage in cats.

To identify and illustrate the topography of the lymphatic vessels, afferent and efferent lymph nodes of the mammary gland in the domestic cat, we have used as study method the radiographic indirect lymphography with a contrast agent.

The lymphographies were taken in the Radiology Laboratory of the Faculty of Veterinary Medicine, Cluj-Napoca, using a TEMCO GRx-01 type fixed radiographic equipment.

## **MORPHOLOGICAL STUDIES OF THE GENITALIA SYSTEM OF GILTS WITH DELAYED PUBERTY, WITH THE PURPOSE OF IMPROVING THE PARAMETERS OF REPRODUCTION ON BIOECONOMIC BASES**

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The optimal age for gilt insemination is 220-240-day-old, at the second or third estrus cycles. 147 gilts aged between 280 and 320 days with delayed puberty manifested through prolonged anestrus were eliminated from the reproductive circuit and slaughtered. The reproductive organs measured and grossly examined in order to detect the functional ovarian structures (ovarian follicles and corpora lutea in various evolutionary stages) which would help determine if the females which were studied had estrus cycles, and how many. The examinations revealed that 25% of the females were presenting severe genital infantilism, 40% of cyclic gilts have one and 35% of gilts have two estrus cycles. The results showed that a significant number of gilts with pre pubertal anestrus and delayed puberty are the result of deficient management

which does not detect in time and/or stimulates the estrus of females, which leads to significant losses to the economy.

## **RESEARCH REGARDING THE DISTRIBUTION OF MANDIBULAR BRANCH OF THE TRIGEMEN NERVE IN SMALL RUMINANTS**

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Because the mandibular branch of trigeminal nerve has a complex distribution and integrates both motor and senzitives nerves, with many individual variations, we conducted research on 10 goats and 10 sheep, pointing (noting) the most important aspects. Are described the features regarding the posting of the deep temporal maseterin nerve and those on the path of buccinator nerve. There were differences on the morphology of otic ganglion, not described in the literature yet. We met variants of superficial temporal nerve distribution and we have described in detail the two motor branches which have intimate relationships with the mandibular branch.

## **THE EFFECT OF SOME POLYPHENOLIC EXTRACTS UPON OXIDATIVE STRESS IN RATS WITH ASCITOGENOUS HEPATIC TUMORS**

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In this paper it is reported the effect of *Vaccinium myrtillus*, *Hypericum perforatum* and *Chelidonium majus* extracts (100 mg polyphenols / kg-1 body weight) on the antioxidant profile of rat liver. Activities of the antioxidant enzymes superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPx) were increased and reduced lipid peroxidation in liver homogenates. Administration of plant polyphenols to normal rats decreased TBARS levels by -90.9% (for normal control rats treated with bilberry extract) to -81.8 % (normal control rats treated with St. John's Wort extract), compared to the normal rats. The level of oxidative stress can enhance SOD activities in cancer: +44.68 % for implanted tumor rats treated with bilberry extract. The CAT activities were higher (by 41.6 %, 57.7 % and 52.9 % respectively) compared to control rats with implanted tumors. The administration of plant extracts to rats with cancer resulted in highly significant increase in GPx activities, as compared to normal control rats,  $p < 0.01$ .

## **EFFECTS OF VARIOUS PLANT POLYPHENOLS ON LIPID PEROXIDATION, REDUCED GLUTATHIONE AND SOME ENDOGENOUS ENZYMES IN STRESSED MICE**

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The aim of the study was to investigate the effect of hawthorn (*Crataegus monogyna*), wild pansy (*Viola tricolor*) and nettle (*Urtica dioica*) extracts on the occurrence of oxidative stress in the liver of mice by measuring the extent of oxidative damage as well as the status of the antioxidant defense system. Plant extracts were administered orally (100 mg/kg body weight) and the levels of thiobarbituric acid reactive substances (TBARS), superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx), glutathione-S-transferase (GST) and reduced glutathione (GSH) were estimated in oxidative stress induced on mice. The levels of TBARS were increased in stressed control mice by +249.02 % in comparing to the normal control group. Administration of plant extracts to stressed mice decreased the levels of lipid peroxidation. The decrease in SOD activity of the stressed mice liver was evident:  $9.2 \pm 0.8$  U/mg protein (normal mice) to  $4.8 \pm 0.7$  U/ mg protein (stressed mice). Plant polyphenols administration on stressed mice showed significant increase in CAT status:  $1.8 \pm 0,3$  U/mg protein for hawthorn (*Crataegus monogyna*),  $2.1 \pm 0,3$  U/mg protein for wild pansy (*Viola tricolor*) and  $2.5 \pm 0.4$  U/mg protein for nettle (*Urtica dioica*), while CAT level in stressed mice was  $1.4 \pm 0,2$  U/mg protein. Polyphenols plant administration improved GST activities in oxidative stress induced mice:  $5.4 \pm 0.3$  U/mg protein for hawthorn (*Crataegus monogyna*),  $6.1 \pm 0.4$  U/mg protein for wild pansy (*Viola tricolor*) and  $6.8 \pm 0.5$  U/mg protein for nettle (*Urtica dioica*). The activities of GSH were decreased in stressed mice:  $18.6 \pm 2.3$  mg/ 100 g tissue when compared to normal mice group:  $36.7 \pm 2.2$  mg/ 100 g tissue.

## **PRRS AND ENZOOTIC PNEUMONIA IN A FATTENING PIG FARM**

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The paper presents the investigations made upon the diagnosis of a mixed outbreak of infection with PRRS virus (PRRSV) and enzootic pneumonia.

By using serological ELISA test it was confirmed the infection with PRRSV, from 10 samples examined, 9 were positive.

From pig lungs with characteristics lesions of enzootic pneumonia there has been isolated and identified a strain of *Mycoplasma spp*, which proved to be *Mycoplasma flocculare* (*M. flocculare*).

There were made cultivations on special culture media for mycoplasmas. Based on cultural and morphological aspects there has been identified a strain of *Mycoplasma spp*. Using Multiplex PCR technique was identified *Mycoplasma flocculare* (Assuncao et al., 2005, Holko et al., 2004, Hovind-Hougen et al., 1991).

## **ISOLATION AND IDENTIFICATION OF OUTBREAKS WITH COLISEPTICEMIE APEC STRAINS FROM BROILERS**

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In this study are presented isolation and identification a some outbreaks with colisepticemie APEC strains from broilers, from 18 poultry farms located in the counties: Arad, Bihor, Caraș Severin, Cluj, Hunedoara, Satu Mare and Timiș. The percentage of mortality increased with the age of broiler chickens from 13.71% in the first week of life to 62.65% over the age of 14 days old. The frequency of APEC type strains isolated had gradually increased over the past three years. At the same time it was noted during our investigations, an increase in the territory of serious episodes of colibacillosis in broilers.

## **STUDIES ON DIAGNOSIS OF MAREK DISEASE IN BROILERS**

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In this study are presented the epidemiological characteristics, clinical and anatomopatological findings in Marek's disease, which has evolved in an effective of broilers. In case of broiler chickens, cumulative mortality recorded values of 12,06% beginning from the fourth week of life, of which 9% because of Marek's disease evolution in the effective. The visceral form of Marek's disease diagnosis, suspicion based on clinical signs and macroscopic lesions, was confirmed by histological examination too.

## **OSTEOLOGICAL FEATURES OF THE BONY HEAD IN THE REINDEER (RANGIFER TARANDUS)**

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Osteological features of the bony head in reindeer are in general similar with those from the ruminants with horns.

There are some specific particularities at the level of the bones of the head, such as occipital, frontal, nasal, temporal, sphenoid, orbit, zygomatic arch and hard palate.

## **RESEARCH CONCERNING THE CORRELATION BETWEEN HEPATOPATHIES IN BROILER CHICKENS AND FOOD SAFETY**

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The hepatic lesions in broiler chickens are considered to be an important source of economic loss in the poultry industry.

The increased demands of the consumer regarding the food safety and quality impose the poultry processors to monitorise the entire technological flow by applying the "from farm to table" principle.

The aim of this investigation was to link different types of hepatic lesions from young slaughtered poultry liver with the presence of pathogenic and conditional pathogenic microorganisms.

Grossly, 411 livers were examined and two types of lesions were observed: non-specific hepatopathy with diffuse degenerative features associated with vascular reaction (94,4% of samples) and multifocal miliary necrotic hepatitis (5,6 % of samples).

22 organs with representative gross lesions were submitted to cytological (May Grünwald Giemsa stain), histological (Masson trichromic and Congo red stains) and microbiological exams.

Miliary necrotic hepatitis was associated with *Pseudomonas spp* (5/7) while non-specific hepatopathies was correlated with *E.coli* (8/15), yeasts (8/15) and *Enterococcus spp.*(7/15).



# **STUDY REGARDING THE IMPLEMENTATION OF THE *LEPTOSPIRA SPP.* ISOLATION AND CULTURING METHODS FROM PATHOLOGICAL MATERIAL FROM EXPERIMENTAL AND NATURALE INFECTED ANIMALS**

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The study consisted by the assimilation, implementation and optimisation of the methodology regarding the leptospires isolation and culturing, based on the recomandations of the OIE Terrestrial Manual, edition 6, 2008.

Eight types of culture media was prepared, EMJH semi-solid with 4 combinations of antibiotics/chemotherapeutics which suppress contaminating bacteria, EMJH liquid, EMJH liquid with rabbit serum, Korthoff medium and Fletcher semi-solid medium.

The culturing was performed with pathological materials from exepriental infected animals and the M1 type of the EMJH semi-solid, with 100 $\mu$ g/ml 5-fluorouracil, was the best culture media for the optimal growing of leptospires. The M3 type of the EMJH semi-solid, with 300  $\mu$ g/ml 5- fluorouracil and 20  $\mu$ g/ml nalidixic acid, inhibited strongly leptospiral growth and we obtained just 18,2% positive results from liver. For the M4 type of the EMJH semi-solid, with 100 $\mu$ g/ml 5- fluorouracil, 10  $\mu$ g/ml rifampycin and 2 $\mu$ g/ml amphotericin B, we obtained 45,5% positive results from liver and 36,36% from kidneys, but the results were negative for all samples of fluid pericardic and peritoneal, probable caused by post mortem changes witch can rapidly reduce the number of viable leptospires.

We also perform the isolation and culturing of leptospires from urine and we obtained 18,2% positive results for M1 and M2, while for M3 and M4 the results were negative. The dark field microscopy of the urine and kidneys cultures from a dog with positive serology, which was performed at 26 days after the inoculation of the culture media, was positive for the types M1, M2 and M4 of the EMJH semi-solid and negative for the type M3, which was negative even at 8 weeks.

We succed to isolate leptospires from pathological materiales taken from an aborted animal foetus. The result was positive for both inoculations of the culture media, at 24 and 96 hours after the samples of the tissues were taken. So, if pathological materials are collected, stored and transported correct, leptospires can survive and the culturing and isolation of leptospires can be posible.

## **PRELIMINARY STUDY OF TOXOPLASMIC INFECTION IN DOMESTIC PIGS FROM TIMIS COUNTY**

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Seroprevalence of toxoplasmosis in domestic pigs was investigated in 32 localities (CSV) from Timis County. Serum samples from 1600 pigs were examined by ELISA (enzyme-linked immunosorbent assay). For this study 50 pigs were randomly selected from each CSV.

The prevalence rates of *Toxoplasma gondii* infection in domestic pigs was 21.93% in the Timis County, with variations between 0% and 80%.

## **THE TREATMENT OF LONG BONE DEFECTS IN DOGS WITH B -TRICALCIUM PHOSPHATE AND COLLAGEN MATRIX LOADED WITH PERIOSTEAL DERIVED CELLS**

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The literature studies regarding the bone substitutes used in dogs are not many, this study evaluate the healing process in the presence of  $\beta$ -tricalcium phosphate and collagen matrix loaded with periosteal derived cells for repair bone defects.

The bone healing process in all subjects is included in the physiological limits, increased density of the defects during the healing process is the consequence of calcium and hydroxyapatite presence at the mineralization site of the soft callus.

## **HETEROTOPIC NEO-OSTEOGENESIS FROM VASCULARIZED PERIOSTEUM AND BONE GRAFTS**

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In this study we have investigated the capacity of free vascularized corticoperiosteal flaps to generate heterotopic neo-osteogenesis. On eight common breed dogs,

heterotopic transplantation of some tibial corticoperiosteal flaps was realized into the popliteus muscle. The postoperative surveillance of the dogs was made by daily clinical examination for 63 days. The X-ray evaluation of the osteogenic potential of the corticoperiosteal flaps was performed by digital radioscopy at 7 day intervals for ten weeks. The dual-energy absorptiometry (DXA) was using to measure (at 1, and 2 months) bone mineral content (BMC) and bone mineral density (BMD) for compared tibial fracture healing at the donor site and the osteogenic potential of the corticoperiosteal flaps heterotopic transplantation. At the 63 days, biological samples were obtained for histological examination by classical microscopy and by fluorescent microscopy methods.

On all individuals the radioscopic exam revealed the presence of the corticoperiosteal flaps which maintained their position and radiographic density until 21 days. On radioscopic investigations performed after 21 days, a reduced radiodensity of the bone flaps was observed in all the subjects of the group, followed by accentuated mineral losing in the next 35-63 days.

The histological exam of corticoperiosteal flap tissue revealed a degenerative process of detached compact bone even in conditions of vascularisation and periosteal continuity maintaining. The presence of the fluorochromes indicates the location, time and amount of bone deposition. At the evaluation of the osseous tissue formed in the defect area (from where a corticoperiosteal fragment was detached) intense osseous growing activity inside the calcificated area was observed. The exam of the sample of corticoperiosteal fragment revealed a low bone growing activity. The results reveal a significant correlation between BMD and BMC and the histomorphometric determination of bone mass.

## **PRELIMINARY OBSERVATIONS ON THE DISTRIBUTION OF CANINE HAEMOPARASITES IN TIMIȘ COUNTY**

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In this study we have proposed ourselves to identify the haemoparasites of dogs from Timiș County. Venous blood was collected from 144 domestic animals of different sex, breed and age. In blood of dogs from Timiș County were identified four species of haemoparasites: *Dirofilaria immitis*, *D. repens*, *Babesia canis*, *B. gibsoni*. The prevalence of *Dirofilaria* spp. was 2.77% and *Babesia* spp. was identified in 9.02% from investigated samples. The sex, breed or age of dogs had no influence on distribution of haemoparasites. *Hepatozoon* spp., *Mycoplasma* spp. and *Ehrlichia* spp. were not identified.

## **EPILEPTIFORM EVENTS IN TWO DOGS WITH BABESIOSIS**

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Epileptiform episodes have neural origin. Different brain injuries, such as hypoxia, toxins, viruses, trauma, could alter the neuronal properties and the connections between them, leading to recurrent excitatory activity.

For a good functioning of the nervous system there is a balance between the excitatory potential and the inhibitory potential. Any imbalance, meaning the depression of the inhibitory synapses or the potentiation of the excitatory synapses may lead to neurological disorders manifested by epileptiform episodes.

This work aims to expose two cases of dogs, a mixed breed 3 months old and a rottweiler 13 years old with epileptiform events due to babesiosis and the subsequent anemia and hypoxia.

Because all the results of the ran tests in both dogs were good excepting the number of erythrocytes and the value of hemoglobin, we came to the conclusion that anemia and hypoxia were the etiologic factors of these epileptiform events.

We applied a complex treatment that contained the antidote for the babesial infestation and a supportive treatment; in any case we didn't recommend antiepileptic drugs.

Both patients reacted in early treatment, their state of health improved rapidly and epileptiform events never appear again.

The nervous system is very sensible to the lack of oxygen and it reacts to this in many ways. In these patients cases it reacted with epileptiform manifestations and it's a scientific reason as well as a personal particularity, because not all the patients we have seen with babesiosis and anemia reacted this way, this is the reason why we have found interesting these two cases.

## **IDIOPATHIC EPILEPSY IN 6 DOGS**

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Epileptic seizures are a manifestation of a change in forebrain activity. Forebrain is defined as the diencephalon and telencephalon as one functional unit. Neurologic signs associated with forebrain disorders include: behavioral changes, manege (circling) head turns on the side of the lesion, proprioceptive deficits, contra lateral hemi paresis, vision loss etc.

In this study we examined six dogs, all of them with epileptic seizures in young age. We proceeded for a clinical examination and a neurological exam for each patient. The results were good. After that, we performed several tests that included: biochemical panel, complete blood cell count, urinalysis, radiographs, ophthalmologic exam, cardiologic exam, MRI in order to establish the cause of the seizures. The results were

correlated with the history of each patient and after that we could determine a diagnosis and a treatment plan.

All six patients had generalized seizures episodes. All of them had specific manifestations of general seizures.

We performed complete biochemical panel, complete blood cell count, spinal column radiographs, cardiologic and ophthalmologic exams for all the patients. All of them had in range results.

Considering young age of all six patients in conjunction with the negative results of the clinic and paraclinic investigation and the positive details from the history (all dogs were vaccinated and dewormed, none was exposed to toxic substances or emotional shock, violence or trauma etc.) we concluded that there was idiopathic epilepsy we are dealing with.

## **PRESENTATION OF CERTAIN WILD BIRD SPECIES (AQUATIC AND LAND) THAT ARE SUSCEPTIBLE TO THE AVIAN FLU WITHIN THE BIODIVERSITY FRAMEWORK IN THE DANUBE DELTA – TULCEA AREA**

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The Danube Delta is considered the paradise of birds because, regardless of the season, it is brought to life by over 330 species of birds: As such, there is a great ornithological biodiversity in this area. Wild birds are both vectors and victims of the H5N1 virus. At the end of the past century, the avian flu was identified in domestic geese in the south of China in 1996 and in a human in Hong Kong in 1997. At the end of 2002, the first cases of avian flu were documented among migrating and water birds, the virus spreading quickly afterwards, with hotbeds of domestic and wild birds as well as other mammals being identified in over 60 countries. In response, over 200 million domestic birds were either killed by the virus or sacrificed in order to prevent it from spreading further. In the Danube Delta, the main link for the presence and transmission of the flu virus is represented by migratory birds (aquatic and land). In our study we will present the most often encountered birds that can transmit the aviary flu virus being rated reservoirs of passage (carriers and transmitters). They are as follows: Charadriiformes, Anseriformes, Ciconiiformes, Gaviiformes, Pelicaniiformes etc.

## **PRION PROTEIN GENE POLYMORPHISMS IN SCRAPIE- AT TURCANEA SHEEP**

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The Turcana sheep is the first most important romaine breed. Reported here is the prion protein (PrP) haplotype frequency distribution for scrapie-related codons (136, 154 and 171) and a sequencing study of the complete PrP gene open reading frame for this breed. The most frequent PrP haplotype in both scrapie was ARQ, which was found at significantly higher frequency in scrapie-affected sheep. The susceptibility-associated VRQ haplotype was found at low frequencies in seven sheep. The resistance-associated ARR haplotype was found in all breeds. 15 genotypes were defined, which are considered reliable in diagnosing the disease, genetic mutations affecting the sequence 136, 154, 171. It was identified ARR / ARR genotype, which determines resistance to scrapie. The research team collected samples from animals in the area to identify valuable genotypes in order to preserve the gene bank. The results of country analysis shows evidence Turdas 46 alanine (A) at codon 136 that confers resistance to scrapie prion structural changes. The presence of glutamine (Q) or histidine at codon 171 may send some characters of resistance to scrapie that was not detected in these samples. The analytical results from 56 samples the presence of glutamine (Q) in codon 171 of prion structural changes that confer resistance to scrapie prion. But classes G5-5 genotype 2 samples were detected with G4 genotype (ARR / VRQ) and 2 evidence-G5 (VRQ / ARQ), which are capable of prion disease. The best method for preventing scrapie from occurring in a flock or herd is to maintain a closed flock/herd, particularly with regard to breeding females. Any replacement females or breeding males should originate from flocks/herds not known to be affected with scrapie and under management practices precluding the introduction of scrapie or, in the case of sheep, should be of resistant PrP genotypes. This way it is possible to make the selection of individuals with the most valuable genotypes resistant to diseases such

## **IDENTIFICATION OF GENOTYPES VALUABLE RESISTANT IN SCRAPIE BY GENOTYPING METHODS**

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The best method for preventing scrapie from occurring in a flock or herd is to maintain a closed flock/herd, particularly with regard to breeding females. Any replacement females or breeding males should originate from flocks/herds not known to be affected with scrapie and under management practices precluding the introduction of scrapie or, in the case of sheep, should be of resistant PrP genotypes. Susceptible ewes of

unknown or questionable disease status should be bred to RR rams or separated from the rest of the flock prior to and following lambing until there is no vaginal discharge to minimize spread to other animals. Another method used by some producers is selective breeding to reduce overall flock susceptibility based on PrP genotype. This method consists of breeding only with rams that are RR or QR. In our study and research, the best genotype class G1 (ARR/ARR) and G2 (ARR/ARH) it was displayed in the samples of Totesti in percentage of 80%.

## **VIRULENCE GENOTYPE OF *PASTEURELLA MULTOCIDA* STRAINS ISOLATED FROM ATROPHIC RHINITIS IN SWINE**

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**Background.** *Pasteurella multocida* is the causative agent of numerous relevant diseases worldwide like hemorrhagic septicemia in cattle and buffaloes, enzootic bronchopneumonia in cattle and sheep, fowl cholera, snuffles in rabbit, atrophic rhinitis in swine.

Human infections with *P. multocida* predominantly occur following cat and dog inflicted injuries resulting in cellulitis and lymphangitis, sometimes complicated by abscess formation and septic arthritis.

**Results.** In this study *P. multocida* isolates were analyzed to discover the presence of the coding gene for the toxin (*toxA*) using protocol based on PCR assay, previously described by Lichtensteiger and col. (1996), which was later improved.

In this communication we explored the feasibility of PCR for accurate rapid detection of *P. multocida* from swabs.

We show that for our reaction conditions, PCR is specific and sensitive for toxigenic *P. multocida*. Sensitivity appear increased over reactions for a direct specimen assay. We show that toxigenic *P. multocida* is recovered efficiently from inoculated swabs without inhibiting the PCR assay.

**Conclusions.** The results show that PCR detection directly from swab specimen should significantly enhance the identification of pigs infected with toxigenic *P. multocida*.

## **MOLECULAR CHARACTERIZATION OF HUMAN *CRYPTOSPORIDIUM* ISOLATES IN BANAT REGION, ROMANIA**

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The aim of the present study was the genetic characterization of *Cryptosporidium* isolates, from humans with diarrhea attending to different hospitals located in Banat region. A total of 78 fecal samples were examined by modified Ziehl-Neelsen staining method. Five microscopically positive samples were investigated by PCR-RFLP of the SSU rRNA gene. The species and/or genotypes were determined using restriction endonuclease enzyme digestion with *SspI* and *VspI*. The results indicated the presence of *Cryptosporidium parvum* in three samples and *Cryptosporidium* cervine genotype in another two samples. These data suggest the animal origin of this zoonotic species and genotype.

This is the first study of molecular epidemiology in human cryptosporidiosis that has been made in Romania.

## **CLINICAL OBSERVATIONS REGARDING SURGICAL APPROACH IN A BEAR PAW WOUND**

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This paper presents a case study, a bear with a front paw wound. For reaching the wound we used a neurolept-analgesic protocol with xilazine and ketamine. The wound was made by an accidental straw puncture. We took out the straw and we cleaned the area.



## **THE USE OF ULTRASOUND EXAM IN VISUALIZING THE DISTAL INTERPHALANGEAL JOINT ANATOMY IN HORSE**

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The distal interphalangeal joint (DIPJ) represents the joint between the middle phalanx, the distal phalanx and the sesamoid bone. The clinical importance of DIPJ resides in its role in foot biomechanics and lameness. The equine foot is an anatomical part of the body that was considered hard to be imaged by ultrasound. Ultrasonography was found particularly useful in horses presenting foot lameness without significant radiographic findings (Denoix and Audigie, 2004). The major advantage of this procedure is its real-time, dynamic assessment (Denoix, 1996a). In order to obtain good quality images and to understand the ultrasonographic anatomy, precise knowledge of descriptive, topographical and microscopic anatomy is necessary. Reference ultrasound images are undoubtedly necessary for a correct interpretation of the clinical ultrasonograms in order to assess an accurate diagnosis and to avoid misinterpretation.

Our objective was to develop a systematic echographic approach of DIPJ and to present the accuracy of the ultrasound exam in the diagnosis of ligament and tendon injuries in the foot.

In order to obtain a complete examination of the distal interphalangeal joint, five different approaches have been used: dorsal, collateral lateral and medial, palmar and distal or transverse. For each approach, both longitudinal and transverse sections were realized. A standoff pad was used for the dorsal and abaxial approaches. The ultrasound of the foot has been done with a non-portable machine *Aloka Prosound Alpha 10* (Aloka Co. Ltd., 6-22-1 Mure, Mitaka-shi, Tokyo, 181, Japan). Linear, convex and microconvex multifrequency transducers, with a frequency varying between 5.0 to 10.0 MHz have been used. This technique allowed us to image almost all the components of DIPJ, with the specification that it presents some limitations in examining the articular surfaces and the deep part of the bone in the case of the distal phalanx and the distal sesamoid.

## **THE HEMILAMINECTOMY INTERVENTION IN DOG MEDULLARY COMPRESSION SYNDROME**

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In this study there have been made 18 surgical interventions of hemilaminectomy in dogs by different breed and ages. The medullary compression syndrome was installed suddenly in 16 cases and slowly in 3 cases. The reasons of the medullary compression appearance were traumatic factors in the most of cases. The surgical treatment was the hemilaminectomy intervention, followed by physiotherapy, massage and swimming. The patient's recovery have been made between 20 and 65 days, but the footing and slow displacement started in day 15 in small dogs breed and in day 30 in large dogs breed.

## **CLINICAL AND THERAPEUTICAL STUDY IN THE EQUINE KELOID**

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The present study contain observation about the horse keloid scar concerning his appearance, clinical and therapeutically manifestation. In this purpose the authors took 18 horses in observation, the horses were pure and mixed Romanian horse breed. The keloid scar have predilection for posterior lambs. The size of keloid scar in variable and different from the size of a chestnut to the size of a hand ball. The keloid scar structure is based on collagen fibers, confirmed by the histopathology tests were it can be seen the anarchic distribution and big diameter of the collagen fibers. The keloid scar therapy is uncertain because the attempts with corticosteroids bandage (Contratubex crème), triamcinolone acetoneid) and silicone gel had uncertain results. Good results were obtained after surgical treatment by ablation of the keloid scar, the skinless area was covered with skin and protected by a bandage. In cases of large keloid scars the results are inadequate because the diseases recur. In our casuistry we saw recur disease and complications in 4 cases. The complications were characterized by chronic *lymphangitis, chronic edema and skin sclerosis*.

## **HERITABILITY ESTIMATION OF SOME CHARACTERS IN A LAYING HEN LINE BREEDING OBJECTIVE**

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Heritability expresses the certainty of the phenotypic value as a guide of the breeding value or the correspondence range between the phenotypic value and breeding value. That is why the heritability is in the majority of the formulas used in animal breeding and several practical decisions depend on its size. Being ratio heritability is a feature belonging to a given character, and a given population. Every heritability value is available to a certain population, in some circumstances. The correct management of the breeding work supposes its calculation in every given generation.

## **ORGANIC LESIONS INDUCED BY MYCOTOXINS PRODUCED BY SOME FUNGI ISOLATED FROM FOOD**

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Mycotoxins are important pathogens because are mostly produced in large feed storage substrates, where fungi that produce those toxins find optimum conditions for development and their presence in food and animal feed is a matter of national interest. Among the species of fungi producing mycotoxins include those of the genera *Aspergillus*, *Penicillium*, *Fusarium* and *Cladosporium*. The most known toxins are: aflatoxin, ochratoxin, zearalenone, ergotamine and deoxynivalenol.

In the present study was used as matrix bread, bakery products, cheese and wheat, raw materials for bread production. Since the values of CFU / g product have exceeded the maximum allow values according the orders nr. 975/1998 and 976/1998, have led us to experience the effects of these toxins produced by mycetes on living organisms. To highlight the damage caused by these mycotoxins were inoculated white laboratory mice with 2.5 ppm and 4.5 ppm ochratoxin and total aflatoxin.

Ingestion of food containing mycotoxins can cause serious adverse effects on animals and consequently to human health.

## **INFLUENCE OF PLATING MEDIA ON DETECTION, NUMERATION AND SPECIES OF CAMPYLOBACTER SP. FROM NATURALLY CONTAMINATED CHICKEN SAMPLES**

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In the European Union, campylobacteriosis are the most frequently reported foodborne illnesses in humans. Broiler meat is considered to be an important food-borne source of these human diseases.

The purpose of this study was to determine which plating media has the best productivity using three different techniques of inoculation. There were tested 78 samples represented by leg and neck skin; the plating media were mCCD agar, Butzler agar and Karmali agar.

This study revealed that *Campylobacter* numeration is dependent on the used medium: Butzler agar presented the lowest productivity, while between Karmali and mCCD agar no significant differences were observed.

## **MILK CATTLE WELFARE IN ACCORDANCE WITH THE POLLUANT FACTORS IN VALCEA AREA AND THE HAEMATOLOGICAL PROFILE**

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The aim of the investigations presented in this paper was to follow the changings made by the polluting factors in the haematological profile and the use of the latter in monitoring the cattle welfare in this area, especially the milk cattle. 40 blood samples taken between September-November 2009 were analyzed. These samples were taken from milk cattle of different ages and physiological states, from areas situated near the industrial platform where productivity problems frequently appear (decrease in the milk production, infertility, repeated reproductions, unjustified weight loss).

The drawing and sending of the samples was made by the official veterinarian doctor from the outskirts of Ramnicu Valcea town. The samples were sent for analysis to the Institute of Diagnosis and Animal Health in Bucharest, in the National Reference Laboratory for Animal Welfare, where an evaluation of the animal welfare is done through a national surveillance programme in the context of protecting man's health and of ecosanogenesis. Changes of the haematological status were noticed translated

through the changes of the haematocrit value, the average erythrocyte volume, thrombocyte number, leucocyte formulae and citomorphologic examination. This data will be used to make and implement an integrated programme of animal welfare surveillance and to carry out a feedback by offering the results to the cattle breeders.

## **RADIOLOGICAL DIAGNOSIS IN EXPERIMENTAL RABBIT ENDOCARDITIS**

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Heart catheterization in rabbits for experimental purposes can, in time, cause endocarditis, because of the catheter acting like a irritating factor. The orientation of the endocarditis diagnosis can be done through a radiological examination while the confirmation or refutation of the endocarditis type, only by a morphopathological exam. Starting from this consideration, the rabbits used to demonstrate this hypothesis can be used as sentinels to determine the degree of sanitation of medical centers that perform heart surgery.

## **GREEN GENERATION AND FARM ANIMAL BIODIVERSITY**

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Rumors of the global heating of the Earth are increasing now days. Ecology as biological science concluded nature, without humans' implications, is in balance. The relations between living thing (biocenosis) and unanimated things where they live (biotope) are solved by the genetic variability of beings and through the natural selection controlled by environment. Biocenosis synthesizes organic matter from mineral compounds around: H<sub>2</sub>O, CO<sub>2</sub>, N, P and other chemical elements. Nature sustainability results from the primary and secondary trophic nets. When organic matter day it is mineralized. If part of it remains organic it is buried underground. Thus there are in nature "Telluric Carbon" underground, "Organic Carbon" inside the body of live or dead beings and "Atmospheric Carbon" as an external layer of Earth. Atmospheric carbon enters the composition of some gazes (CO<sub>2</sub>, CH<sub>4</sub>, and CFC) able to retain heat out of sun rays. They express the so called "green house effect" together with the NO<sub>2</sub> (Nitrogen protoxide) and H<sub>2</sub>O (water vapors). Global heating is due to the increase of green house gaze concentration which is saturated. All farm animals emit CO<sub>2</sub>. Grazing animals emit CH<sub>4</sub> as well. Demographic explosion of humans increased production of "Organic Carbon" to feed them. It also increased the need for

energy, most of it being obtained by burning “Telluric Carbon”. To control the quantity of “atmospheric carbon” emitted to produce it is proper to use less “fossil fuel”. “Biofuel” is of help. To decrease “Atmospheric Carbon” emission for feeding the same human population reducing the livestock of farm animals is possible if animal production performances are increased. Reducing the number of grazing farm animals in favor of grain consuming animals could help reducing CH<sub>4</sub> emission but will reduce resources of human food.

## **MONITORING OF PHARMACO-THERAPY INTERVENTIONS AND REARING MANAGEMENT IN WALLABIES GROUP IN BUCHAREST ZOOLOGICAL GARDEN**

**ILEANA CORNELIA PĂUNESCU, C. VIȘOIU, DANA TĂPĂLOAGĂ, IULIANA NEAGU, MIMI DOBREA, A. MARMANDIU, DANA BRESLAȘU, I. RĂDOI**

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The present paper reveals a mammal species– a marsupial -, characterized by an incomplete structured placenta, without corial villi , so the cub is early born and after that its development goes on in the marsupial pocket.

We were interested very much in captivity maintaining conditions, especially due to the fact that this species does not take part in the Romanian fauna; by the studied references we noticed that the rappers of the animal protection organizations show that there are still several animals kept in improper conditions, which do not achieve their biologic needs; so the animals often present psychological and physic disorders and no doubt express their stress status.

The Zoological Garden represents a new ecosystem for the captive animals, they being exposed during time to some imminent behavioural changes; this phenomenon, called *zoo effect* is a first step to individual domestication, leading to behavioural changes, a risk factor appeared in captive animals.

In the case of *safari parks*, even at the first sight they assure a very different environment beside the zoological garden, their success in keeping wild animals is not so emphasized: the taming is in this case significant because, finally, the man is the one who assure the food. On the other side, a safari represents less ways and opportunities to learn the visitors and with all the efforts animals live in simulated natural conditions, by exemplification, the giving birth and cubs maintaining are impossible without human intervention (cubs have as start an abnormal private relation with the one who takes care of.)

## **ALTERNATIVE METHODS FOR VISUALISATION THE BONES OF THE THORACIC LIMB IN HORSE**

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The new methods for teaching anatomy may have to be implemented also in the study of veterinary medicine. For the reconstruction and tridimensional visualisation of the bones of the thoracic limb in horse were used the following programs: Blender 3D, Ogre 3D and Microsoft Visual.

## **THE IDENTIFICATION OF SOME FALSE-POSITIVE REACTIONS FOR ANTIBIOTICS RESIDUES IN RAW MILK**

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Some studies in the specialty literature pointed out the possibility that some samples detected as positive or doubtful after the applying of a qualitative microbiologic test in order to detect antibiotics residues in raw milk actually to manifest a false-positive reaction due to the interference of some domestic antimicrobial agents (such as lactoperoxidase, lactoferrin or lysozyme), somatic cells increased numbers or free fatty acids. Also, the possibility of milk contamination with chlorine after the sanitation of milking equipments can be bound to these false-positive results.

The studied material was represented by milk samples with positive and doubtful results after the applying of a qualitative microbiologic test, the confirmation being made after thermal treatment of these samples at 82°C for 10 minutes. The applying of this method led to the decrease of positive and doubtful results.

## **STUDIES REGARDING QUALITATIVE DETECTION OF ANTIBIOTICS RESIDUES IN RAW MILK**

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The purpose of this research was to evaluate the contamination degree of milk with antibiotics residues, antibiotics-free milk being a desiderate in dairy industry. Study material was represented by raw milk sampled from collecting centers and farms.

To accomplish this purpose, it was used a qualitative microbiologic test, which is easy to apply and read, in order to detect the eventual inhibitors in milk.

The obtained results were considered normal and promising considering the fact that lately it is obvious the interest of farmers and milk industry to obtain dairy products with less chemical residues, even ecological.

## **RECENT CONTRIBUTIONS TO THE GENE THEORY OF SEXUALITY IN GALINACEAE.**

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**The gene theory of sexuality in Galinaceae.** The genetic determinism of sex and the equal male to female ratio in chicken was explained in literature by the existence of the male sex, homogametic ZZ, and of the female sex, heterogametic ZW, as well as by the existence of genes in chromosome Z, however, with no corresponding genes of it in chromosome W. This paper presents experiments of genetic recombination which allows the identification in generation F1 of the dominant sex gene linked to the gene that determines the monitored colour phenotype. In the same generation the recessive sex allele was identified in chromosome Z. In generation F2, males and females are in equal ratio in every category of genotypes. Three categories of feather colour genotypes were produced: dominant homozygous, heterozygous and recessive homozygous. The experimental results show the presence of two genes in chromosome W, the dominant sex gene and the gene transmitting the colour of the feathers, contrary to the hemizygotic theory of Morgan. The new theory is supported by the following practical applications: Thesis and antithesis of creation of new poultry breeds; Explanation of hermaphroditism in gallinaceae; Solutions to the litigious disputes between customers and suppliers of hybrid chickens, when the genetic formula for commercial layer production was not followed; Method to stop plumage discoloration and improvement of this trait in the commercial layer hybrids obtained by crossing red Rhode-Island males with white Rhode-Island females; Hybridization design for sexing day-old hybrid chicks by the down colour using heterozygous barred females and heterozygous silver females

## **EVALUATION OF IMMUNE RESPONSE IN BCG VACCINATED YOUNG CATTLE**

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It is known that tuberculosis is a major problem for human and animal health, the research and the evaluation of immune response are crucial for the development of modern methods of diagnosis and fight against tuberculosis.

In this study, we evaluated the cell mediated and humoral immune responses in vaccinated young cattle with a low dose (0.5 ml) of *Mycobacterium bovis* BCG. We used Immunoassay test for the detection of gamma-interferon (EIAs- $\gamma$ -IFN), Delayed hypersensitivity test (DHT) and ELISA for antibody detection (Anigen Rapid Bovine TB Ab).



BCG vaccination induced a rapid increase in the cellular immune response, which was observed in EIAs- $\gamma$ -IFN. There were significant changes regarding the moment of detection the positive level of  $\gamma$ -IFN after stimulation with different bovine PPD tuberculins. Positive cellular immune response to PPD B2 was detected after 3 weeks (52.9% of animals) and remained at a high level (41.2%) in seven weeks, compared with 29.4%, respectively 52.9% at PPD B1. IFN- $\gamma$  levels varied slightly from one animal to another. Cell-mediated immune response tested at 7 weeks after BCG vaccination had a sensitivity of 52.82% and 58.82% at the simple single tuberculinic test performed with Working Standard (WS) and International Standard (IS) PPD Bovin.

Antibodies against *M. bovis* BCG were detected in 11.76% of the animals (50 and 53 days after BCG vaccination), but with low intensity of the immune responses.

The results of this study demonstrate that the cell-mediated immune response is essential for early detection of TB infection in cattle. EIAs- $\gamma$ -IFN is more sensitive than the intradermal tuberculin test.

## **OPTIMIZATION OF METHOD FOR SEPARATION OF LYMPHOCYTES FROM CATTLE AND SHEEP BLOOD**

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The aim of this study was the optimization of methods for lymphocytes separation from the blood samples (cattle, sheep), taken on anticoagulant (Lithium-Heparin) in order to evaluate the immune response of animals by quantification of lymphocytes, their functional level, the functional differentiation of lymphocytes in effector cells. Then, we try to reflect all these studies in assimilation and implementation of the test for lymphocytes stimulation in pure culture for paratuberculosis diagnosis.

We used two methods which allowed the separation of different cell fractions from anticoagulant-treated blood, by centrifugation in density gradient, with appropriate culture media and compatible with living systems: Ficoll, Percoll.

This investigation reveals that we can not achieve the separation of lymphocytes in density gradient with Ficoll, Percoll medium, using anticoagulant-treated blood taken without dilution. The best results we obtain by blood dilution with an equal volume of RPMI 1640 medium and separation using the Percoll medium with 1,075 density (20°C-1800rpm, for 20 minutes; 20°C-2800rpm, for 20 minutes) of 3 ml of blood diluted 1/2 with RPMI 1640 and this will be added carefully in 3 ml Percoll 1,075.

## **HISTOLOGICAL ASPECTS OF GILLS IN FISH PRESERVED USING COLD**

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Acquiring detailed data about the alterations that occur in gills during the preservation of fish using coldness can only be favorable for elucidating some judicial aspects about the duration of time and the conditions of keeping for the fish that are to be delivered for consumption.

In order to contribute to the clarification of some problems regarding the alterations induced by the preservation process to the gills, we undertook researches on some species of fish ingathered from the Black Sea, in real legal fishing conditions and considering preserving the samples on ice for 24, 48 and 72 hours.

The researches have been made on three species of fish (garfish, black goby, horse mackerel) harvested from the Black Sea, from the waters limitrophe to Mangalia. The sampling for the histological processing has been done during fishing, then at 24, 48 and 72 hours.

The pieces have been fixed in formalin 10%, included in paraffin, sectioned into 6 microns slices and then stained using the Hematoxylin-Eosin and the Giemsa methods. The slides were then photographed and digitally enhanced, obtaining the images for the paper.

In the day of the harvesting, the gills presented normal aspects, appearing as membranous expansions layered on the branchial arches, presenting individual branchial blades that are moving freely in the subopercular cavity. They are layered with a pseudostratified epithelium, and the axe of the blade is represented by a vascular-connective blade, in which cartilaginous nodules can be found. Under the epithelium there is a connective condensation that gives them resistance to pressure underwater. Moreover the capillaries in the gills are kept open by special cells with retaining role that derive from regional fibroblasts, cells that permanently generate reticular fibers that attach to the basal membrane of the branchial epithelium strengthening it without interfering with the gas exchange between the blood and the water that suffuses the branchial structures.

Mucous cells, lining epithelial cells and chloride cells or ionocytes that play a role in regulating and maintaining the local osmotic pressure were observed in the epithelium that covers the branchial blades.

According to the time of keeping, different intensity alterations correlated to species occurred, both in the branchial axe and in the secondary branchial blades. The branchial covering epithelium presents necrotizing cells, the number of which depends on the preserving time. Some of these cells come off and are involved in the interlamellar mucus. Finally, the secondary branchiae are disintegrated and detached from the arches.

## **THE JOINTS OF THE PELVIC LIMB AT RED SQUIRREL**

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The stratigraphic studies by dissection of the pelvic limb in the squirrel showed some features of jointing surfaces and ligament structures in strict correlation with mode of travel required habitat conditions. Thus, the coxofemoral joint customizes a deep coxal jointing cavity and hemispheric aspect of the femoral head. Lengthening of the lateral condyle of the tibia and lateral meniscus caudally allow, in addition to knee joint flexion and extension, and latero-caudal rotation of the shank. At the tibio-tarso-metatarsal joint, the squirrel has high mobility due the three trochlea of the talus well revealed. The obliquity of the dorsal trochlea produces medio-dorsal displacement of the pelvis in flexion joint of the autopodium.

## **THE STUDY OF ANTIBACTERIAL EFFECT OF XCUO (100-X) [55B<sub>2</sub>O<sub>3</sub> 45ZNO] VITREOUS SYSTEM**

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This paper studied the antibacterial effect of the xCuO (100-x) [55B<sub>2</sub>O<sub>3</sub>45ZnO] vitreous system for  $0 \leq x \leq 15$  mol%, by the method of dilution in simple broth, the degree inhibition degree being measured by spectrophotometry.

The prepared system presents an inhibitory effect over the *E coli* while the *Micrococcus lysodeicticus* proves to be little sensitive in the interaction with this agent. For the *E coli*, the inhibition is due more to ZnO than to the CuO, the minimal optical density measured being four times smaller than the one of the control sample.

## COMPONENTS OF POLYPARASITISM STRUCTURE WITH *TRICHOSTRONGYLIDAE* IN OVINES

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Polyparasitism with Trichostrongylidae in *Ovis aries* is omnipresent, with a predominant frequency of 9 species: *Ostertagia circumcincta*, *Ostertagia trifurcata*, *Trichostrongylus colubriformis*, *Trichostrongylus vitrinus*, *Nematodirus spathiger*, *Nematodirus abnormalis*, *Nematodirus helvetianus*, *Nematodirus oiratianus*, *Haemonchus contortus*.

The parasitary profile is determined by the number of species, quantitative level, age category of the animals and season. The weight of dominant species in cases of kinds for *Ovis aries* is *Haemonchus contortus* - 100%, *Ostertagia circumcincta* - 95,02%, *Trichostrongylus colubriformis* - 82,63%, *Nematodirus spathiger* - 76,76%. Ponderea nematodelor la nivelul populațiilor fiecărui gen este pentru *Nematodirus* – 40,26%, *Trichostrongylus* – 32,67%, *Ostertagia* – 25,48%, *Haemonchus* – 1,59%.

## RESEARCH ON NON-SURGICAL TECHNIQUES FOR OBTAINING EMBRYO DONOR COWS IN RELATION TO OVARIAN RESPONSE IN RELATION TO SUPEROVULATORY

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BĂRTOIU, M.TH. PARASCHIVESCU, IPATE IUDITH**

Obtaining embryos is the most important stage in the application of biotechnology in cattle embryo transfer and non-surgical techniques for harvesting is a mandatory phase, which makes harvesting stem formations of cow uterus donors potential of embryos. Depending on the hormone used, FSH or PMSG, ovaries of females increases superovulatory a large number of follicles, and after their dehiscence ovarian surface forms an appropriate number of corpora lutea, which can be identified and counted.. Depending on harvesting non-surgical techniques such as catheter via the cervix and the environment is infused with PBS on the same row or uterine horns are recovered in a filter embryonic formation, which are in the utter-tubal junction. After examining a stereolup with a magnification of 40X- 80x, can identify and evaluate formations embryonic taken in accordance with International Handbook Embriotransfer, S.I.E.T.E. (1998). Doing a report on the number of embryo formation taken against the number of corpora lutea, identified on both ovaries, the specialist can tell if the collection was successful and how much, or not.

## **STUDIES REGARDING SPERM MORPHOMETRY IN DOMESTIC ANIMALS WITH ECONOMIC PURPOSES**

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Morphological type classification of spermatozoa is an important component of the modern semen evaluation; however, current methods of analysis are subjective and highly variable between technicians. Artificial insemination using cryogenic preserved semen is a common management tool of the contemporary livestock producer. However, cryopreservation is detrimental to sperm function and fertility, killing some 50% of the spermatozoa during the process. Prediction of cryopreservation damage from pre freeze samples remains elusive. To reduce the subjectivity and thus variability of sperm morphology assessment, computer automated sperm head morphology analysis (ASMA) has been developed. Previous studies have shown the importance of standardizing ASMA procedures to optimize accuracy. Measurements provided by the ASMA system show that uniform results are acquired among different observers.

## **SPECIES IDENTIFICATION THROUGH MITOCHONDRIAL DNA (MTDNA) ANALYSIS IDENTIFICAREA SPECIILOR DE ANIMALE PRIN ANALIZA ADN MITOCHONDRIAL**

**M.A. TURCITU, HANDAN COSTE, CIORANU RALUCA, IOANA CONSTANTINESCU, FLORICA BARBUCEANU, GH. BĂRBOI, M.D. CODREANU, IULIANA CODREANU, CARMEN CRIVINEANU,**

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Due to European regulations regarding intracomunitary meat and meat products commerce, as well as other animal products such as milk and milk products, eggs and egg products, animal fures, as well as increasing number of forensic cases regarding species identification, raises the need for developing and implementing specific and accurate techniques for biological samples analysis. One of the most powerful methods regarding accuracy, number of species that can be tested, as well as broad spectrum of biological samples that can be analyzed consist of mitochondrial DNA investigation by

molecular techniques. This paper focuses on implementation of 12S ribosomal RNA sequence analysis on various mamalian and bird species.

## **SPECIES IDENTIFICATION THROUGH MITHOCHONDRIAL DNA (MTDNA) ANALYSIS**

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Due to European regulations regarding intracomunitary meat and meat products commerce, as well as other animal products such as milk and milk products, eggs and egg products, animal fures, as well as increasing number of forensic cases regarding species identification, raises the need for developing and implementing specific and accurate techniques for biological samples analysis. One of the most powerful methods regarding accuracy, number of species that can be tested, as well as broad spectrum of biological samples that can be analyzed consist of mithocondrial DNA investigation by molecular techniques. This paper focuses on implementation of 12S ribosomal RNA sequence analysis on various mamalian and bird species.

## **RESEARCHES REGARDING THE INCIDENCE OF CANINE PROSTATE DISEASES AND IT'S TREATMENT**

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Now days, when the breeding of the pets has developed, from the growing interest of owners to obtain valuable offspring, male genital tract's pathology is of particular importance, and the prostate is an important and integral part of the pathology of male genitalia.

This research shows some of the casuistry of Obstetrics and Gynecology Clinic of the Faculty of Veterinary Medicine in Bucharest and is the presentation of 23 cases of prostate disease in dogs belonging to different races and with different ages.

This study aims to determine, based on cases under discussion, some prostate pathology parameters with reference to the dog. These parameters are represented by: frequency of illness, age groups affected, breeds prone to disease, best ways of treatment, the percentage of cured animals.

Most cases seen in our Clinic were found to breed Poodle, the average age affected was 13-14 years and the most common diseases were those of the prostate adenoma and prostate cyst.

Most cases were treated using antibiotherapy and osaterone acetate but we have treated several cases using surgical procedures too.

Most of the cases were treated, only 2 of 23 were lost by death.

## **THE DYNAMICS OF HEMATOLOGY INDICES CHANGES IN CHICKEN INFESTED BY ECTOPARASITS AT THE INITIAL STAGE AND AFTER ANTIPARASITE TREATMENT**

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The mix invasions with ectoparasits (biting lice, fleas, gamasid mites) in chickens causes the decrease by 27,5% of the erythrocytes number, the decrease by 29,1% of trombocytes and 16,6% of hemoglobin in the blood of infested birds. The status of these infested chickens is characterized by their significant poisoning, anemia and hemorrhages in the focus of parasites.

## **MORFOPATHOLOGICAL INVESTIGATIONS IN BOVINE LEUKOSIS VIRUS INFECTIONS**

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Institute for Diagnosis and Animal Health

The outcomes of anatomopathological investigations regarding bovine leukosis virus infections performed in the Morphopathology Department from the Institute for Diagnosis and Animal Health are described.

The macroscopically appearance of tumours from different organs/tissues are described in detail from histopathologically point of view, following application of usual and special staining methods of sections from processed tissues.

## **THE CHARACTERIZATION AND IDENTIFICATION OF SOME MICROORGANISMS ISOLATED FROM THE MEAT OF THE FOOD SNAIL *HELIX POMATIA***

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Lately, the food snail *Helix pomatia* is very appreciated in our country. Many people raise it in farms and they also export the snails. Still, their microbiology has not been properly studied in Romania until now. This study's purpose was to isolate microorganisms from the snails meat on different media, to observe the colonies morphological aspects and to identify the isolated species. The colonies aspects were various, according to the medium on which they have grown. The predominant bacteria that we have identified in the snails meat belong to the genus: *Citrobacter*, *Pseudomonas* and *Enterobacter*. On only one medium for pathogenic bacteria, Chromogenic *Listeria* Agar, we could notice the growth of colonies, identified as *Listeria monocytogenes* and *Listeria innocua*. On the Sabouraud medium two species of fungi have grown: *Cladosporium* and *Chrysosporium*. Further researches are required in order to establish the influence of these microorganisms on the consumer's health.

## **HISTOPLASMOSIS WITH ATYPICAL LOCATION OF THE DOG, IN TIMIȘOARA CITY - CASE STUDY**

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This article describes a case of disseminated histoplasmosis in a dog, 9 months, German Shepherd, who suffered from a severe chronic colitis, refractory to treatment with antibiotics, metronidazole respectively, examined at a veterinary surgery in Timisoara. Laboratory evaluation of blood showed anemia, decreased hemoglobin and decreased PCV

Examination of blood smear showed marked lymphopenia and neutrophilia. Further investigation revealed the presence of specific yeast cells histoplasmei both direct smears made from rectal mucosa, respectively in culture. The infection was most likely orally, because the clinical level of distress indicate a digestive system.



## **RESEARCHES REGARDING THE INCIDENCY OF INFESTATION WITH *OTODECTES CYNOTIS* IN CATS**

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Occasionally, cats can be the source of many diseases in their living environment. They can transmit disease directly to other animals and on humans. These may include important parasitic disease caused by ectoparasites, which in many cases can be some unusual or zoonotic risk. Evolving periodic ectoparasites, may be an important source for transmission of diseases and hypersensitivity phenomena may trigger skin diseases in cats and, especially, can cause serious anemia in young animals with long term treatment. The most common example is the ear mite, *Otodectes cynotis*, which colonizes the external ear canal and outer ear in dogs and cats. In his opinion Sotiraki et al. (13), *Otodectes cynotis* is responsible for at least half of feline diseases worldwide. Mehlhorn (8), believes that 80% of cats that wander in Europe are carriers of this parasite. Cats and foxes are among the species commonly *Otodectes cynotis* carrier, transmitting the parasite in dogs and humans.

## **THE TERAPEUTIC PREVENTION OF THE RUMINANT ANIMAL DESEASE IN THE INFERIOR AREA OF THE OLT RIVER**

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F.M.V. Bucharest

The veterinary watches the anamnnesys through physical examination in order to see the general health state of the animal searching carefully the suggested desease simptoms . That's why the anamnesis and the physical examination must be taken as a „whale unity “ which gives all the necessary information for the next diagnosis .

The blood drawing is made by vessel puncture after a previous preparation of the place.

In order to make all the hematological tests very well the blood samples must be taken correctly – undervacuum – softly stirred to homogenize and sealed up at +4°C and sent in the right time . This is a very easy method in a closed system which helps the blood not to change itself until it is tasted .

The laboratory temperature should be for about +20°C , all the tests must be done correctly for each suspicious desease , with no errors , with a certain diagnosis and measures to prevent control and eradicate anything .

All these contribute to an ideal heajth condition .

# **THE PARACLINICAL SUPERVISION OF THE RUMINANT ANIMALS ON THE LOWER SIDE OF THE OLT RIVER RIGHT AREA**

**N.FLOREA**  
F.M.V. Bucharest

The effectiveness and infestation pathology evolution parasitic with nonspecific aetiology on the right side of the lower Olt river .

The data presented in 1 – 11 tables are the result of the laboratory investigations done at D.S.V.S.A. Olte – Slatina in accordance with the Strategical Supervision Plan and the sanitary – veterinary survey at the slaughter house the bacterioscopic test , histopathological and hematological : leucocytes number , leucocytosis formula .

## **I – PARASITIC AETHIOLOGY DESEASE**

There were great cases between 2000 – 2003 regarding parasitological aethiology problems but between 2007 – 2009 it was a very low frequency both at bovines and sheep , because of the reduction of entire animals number .

## **II – INFECTIOUS AETHIOLOGY DESEASE**

Bovine paratuberculosis – there were no cases between 2000 – 2010 ;

Bovine tuberculosis – there were but rare cases between 2002 – 2009 ;

Bovine enzootic leucosis ( L.E.B. ) was but sporadically noticed between 2000 – 2008 being lower under 10% in the last two years 2009 – 2010 ;

The clinical examination , the anamnesis , the tuberculation test , knowing in the details the risqué area – all these can help us choosing the right moment for the surgical intervention .

The sanitary – veterinary survey at the slaughter house , the bacterioscopic test , histopathological , serological – hematological as white cells number and formula – Lymphocytes, Neutrophils, Eosinophils, Monocytes, Basophils – corroborated mean a certain diagnosis and help us take prevention measures to a quick and correct eradication for a very good health state .

## **MRI DIAGNOSTIC IN 10 DOGS WITH SEIZURE**

**F.E. GROSU, N. Tudor, CRISTINA FERNOAGĂ, L. BĂLAN, C. VLĂGIOIU**

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In order to diagnose some cerebral processes in dogs we use, beside clinical and radiological exam, the most modern imagistic technique, the MRI. This paper is the first study made in Bucharest and describes clinical and imagistic aspects in 10 dogs with clinical appearances of epileptically crises. 3 of the dogs showed no imagistic cerebral modifications and at the other 7 had the next pathological findings: 2 dogs with encephalitis, 2 dogs with glioma, one with ventricular asymmetry, one with pituitary adenoma and one with meningioma.

## **MR DIAGNOSTIC IN SPINAL COLUMN TUMORAL PATHOLOGY IN DOGS**

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MRI is one of the most often used methods for diagnosing and describing some tumoral processes in vertebral column. These processes can affect the vertebrae and the spinal cord too, the invasion having different degrees of compression on the spinal cord. Considering the place where the tumoral process is located it could be: extradural, intradural-extramedular or intramedular. There were investigated with MRI 27 dogs, 17 males and 10 females, aged between 4 and 15 years old with clinical signs like paresis, fore limbs and hind limbs, paralysis. In 8 dogs, 5 males and 3 females, aged between 7 and 13.6 years old there were specific tumoral modification. In 5 dogs there were found modifications in the thoracal column and in 3 dogs in the lumbar column. The place where the affections were found divide the in: 12.5% extradural, 12.5% intradural extramedular, 12.5% intramedular, 50% vertebral and 12.5% vertebral with extradural epidural extension. All MR examinations were made at the Pheonix Diagnostic Clinic.

## **STUDY CONCERNING THE PHYSICO-CHEMICAL CHARACTERISTICS OF RECONSTITUTED COW MILK IN COMPARISON TO COW MILK**

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A number of samples of reconstituted milk and usual cow milk were analyzed and results were evaluated in order to determine the possible differences between the two types of milk. Data showed, as an overall image, no differences between the two products. However, values considering density, lactose percent and protein content were higher in reconstituted milk, in comparison to usual pasteurized cow milk. Another very interesting point was that the solids-non fat content was higher in reconstituted milk in comparison to cow milk, possibly due to the enrichment of milk powder in mineral substances and other nutrients.

## **COMPARISON BETWEEN SOME PHYSICOCHEMICAL PARAMETERS OF SEVERAL TYPES OF MILK OBTAINED FROM DIFFERENT SPECIES – COW, GOAT AND SHEEP REARED IN THE PROXIMITY OF BUCHAREST METROPOLITAN AREA**

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The physicochemical characteristics of milk are in strict correlation with the composition for a particular animal species. For example, milk obtained from sheep presents higher level of solid non fat substances, in comparison with goat and cow milk, and the total quantity of nutritive substances is also higher. A number of 960 samples of cow, goat and sheep milk were collected and analyzed concerning physicochemical parameters, an mean values were calculated. The period of the study was of 8 months, from February until September, and weekly a number of 10 samples were collected, transported to the laboratory and analyzed. After data was processed and graphics were elaborated, a final comparison was made concerning the conformity with the standards and the physicochemical traits of each type of milk.

## **RADIOLOGIC DIAGNOSIS IN EXPERIMENTAL RABBIT ENDOCARDITIS**

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Heart catheterization in rabbits for experimental purposes can, in time, cause endocarditis, because of the catheter acting like a irritating factor. The orientation of the endocarditis diagnosis can be done through a radiological examination while the confirmation or refutation of the endocarditis type, only by a morphopathological exam.

Starting from this consideration, the rabbits used to demonstrate this hypothesis can be used as sentinels to determine the degree of sanitation of medical centers that perform heart surgery.

## **RETROSPECTIVE STUDY ON URINARY TRACT DISEASES IN CATS IN A VETERINARY CLINIC**

**COSMIN ION MATEESCU, MATEESCU ROMANIȚA ELENA,  
TUDOR NICULAE, VLĂGIOIU CONSTANTIN**

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In the period comprised between November 2009 and April 2010, in the Agervet Clinic-Târgoviște were diagnosed 57 cats with diseases of the urinary apparatus, out of which there were 31 males and 26 females with ages ranging from 1 to 13 years. When all the medical and imagistic investigation were performed, the conclusion was that urinary diseases have different forms and different symptoms. Our clinic determined different diagnoses among which we can mention: diseases of the upper urinary tract, including kidneys and ureters - 31.58% (18/57), but especially and more often diseases of the lower urinary tract, including the urinary bladder and the urethra - 68.42% (39/57). The symptomatology of the urinary system included nephrites - 26.31% (15/57), cystitis - 31.58% (18/57), urolithiasis - 42.11%.

## **RESEARCHES CONCERNING THE FISH WELFARE ASSESSEMENT BASED ON SERUM BIOCHEMICAL PROFILE IN A CARP FISHERY FROM DAMBOVITA COUNTY**

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Among the objective indicators of fish welfare, the serum biochemical profile shows most clearly and quickly any environmental and physiological changes which could affect the individuals. The aim of the present study was to assess the welfare level in an extensive carp fishery from Comisani area based on serum biochemical profile. From the farm fishpond there were harvested 3 individuals and after stunning, there was collected blood by caudal vein puncture: 1-2 ml/fish. The samples were transported to laboratory, where there were established by using Vetest 8008 the following serum parameters: blood urea nitrogen (BUN), phosphatemia (PHOS), creatinine (CREA), uric acid (URIC), calcium (CA), magnesium (Mg), total proteins (TP), albumine (ALB), aspartate aminotransferase (AST), alanine transaminase (ALT), cholesterol (CHOL), triglycerides (TRIG), glucose (GLU), lactate dehydrogenase (LDH) and alkaline phosphatase (ALKP). The analyze shows changes for some parameters: CA, MG, TP and ALB (in first captured carp), uric acid (in third captured carp), LDH – caused most likely by dehydration and intense muscular activity during fish angling and restraining. In addition, there were registered overvalues for CHOL,

ALT and AST (pronounced in first captured fish), GLU – which suggest stress and hepatopancreatic lesions with impact on fish welfare.

*Acknowledgments.* This study has been financed and is a part of ID\_285 grant CNCISIS UEFISCSU, contract Idei 290/2007: Researches concerning the welfare of fish in farm fish, in transportation and slaughtering units.

## **WATER QUALITY AS AN INDICATOR FOR FISH WELFARE ASSESSMENT IN A PRIVATE POND FROM DAMBOVITA AREA**

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MAGDALENA GONCIAROV VIOLETA ELENA SIMION, A.  
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Fish good welfare reflects their rearing so they could be able to maintain homeostasis, to be protected by stressors, and to allow them a normal somatic development.

From a fish pond in Comisani-Dambovita there were collected water samples in 3 points (water admission point, center and draining) from which were established the physical chemical parameters (pH, O<sub>2</sub>, NH<sub>4</sub><sup>+</sup>, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, P, Fe, chlorine, SO<sub>4</sub><sup>+</sup>, Cu and detergents).

For analyzing the samples, there was used NOVA60 photocolormeter device and the results interpretation was made according to the reference values for carp.

Following the researches there can be noticed that the water from Comisani fish pond is proper for carp rearing and reflects good fish welfare.

*Acknowledgments.* This study has been financed and is a part of ID\_285 grant CNCISIS UEFISCSU, contract Idei 290/2007: Researches concerning the welfare of fish in farm fish, in transportation and slaughtering units.

## **SEROTYPING SCHEME FOR *CAMPYLOBACTER JEJUNI* BASED ON DIRECT AGGLUTINATION OF HEAT-STABLE ANTIGENS**

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In many developed countries, cases of enteritis caused by *Campylobacter* are common, *C. jejuni* being detected at a high rate in cases of sporadic diarrhea when compared to rates of other intestinal pathogenic bacilli.

In the serotyping of *Campylobacter jejuni*, two systems of heat-stable and heat-labile antigen are established. The *Campylobacter* antisera are utilized for heat-stable antigen system by passive hemagglutination (PHA) method. Heat-stable specific antigen of

*Campylobacter jejuni* extracted by nitric acid is sensitized to the blood cells. When the sensitized cells are mixed with the antiserum, specific reaction occurs and agglutination is observed.

The distribution of multiple serotypes in all regions was not surprising considering the mode of *Campylobacter* transmission is via the fecal-oral route from numerous animals or animal products.

*Campylobacter* typing is important for developing strategies to control organisms within the food chain and to establish the sources and routes of transmission of human infection.

## **THE EFFECTS OF PROBIOTICS ON PERFORMANCE AND METABOLISM IN SWINE**

**ELENA MILENA PATRASCANU, ION RADOI, CONSTANTIN VLAGIOIU**

Faculty of Veterinary Medicine Bucharest

The aim of the present study was to investigate the influence of probiotics, based on genus *Bacillus* and *Lactobacillus* in sows, suckling pigs and fattening pigs following the protocol: "L" Probiological solutions containing *Lactobacillus* was administrated to new born piglets and "B" Probiotics premix containing *Bacillus*, which was administrated to pregnant and lactant sows and to fattening pigs in experimental groups. Control groups received no Probiotics.

The results were the significantly reduction of mortality caused by diarrhea in the piglets' experimental group in comparison with the control batch, the raise of the daily weight gain and the shortening of the fattening period.

The number of erythrocytes (Er), haematocrit values (Ht), Haemoglobin concentration (Hb) and the levels of total proteins (TP) were similar in both groups and the differences were insignificant in sows, suckling piglets and fattening pigs.

The levels of albumins (Al) and total imunoglobulins (Ig) were significantly increased in the experimental groups in pregnant and lactant sows, suckling piglets and fattening pigs in comparison with control groups.

## **ALTERATIONS IN BLOOD PROTEINS**

**C. RETEA, V. MOTORGEA, G. RETEA**

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The aim of this research was to evaluate total protein and its fraction concentration in the blood serum, when a dysproteinemia is suspected in dairy cows. All dairy cows (Holstein) were imported from different E.U. countrys by a commercial dairy farm. 23 animals were examined and blood samples were obtained from jugular vein. All blood samples were tested for total serum protein, albumin and globulin concentrations. The mean content of total serum protein was 7,66g/dl in prepartum period (-21-0 days), 7,43g/dl in post-partum period (0-21 days) and 7,75g/dl in lactation period (60-90 days in milk). The mean content of serum albumin was

3,27g/dl in (-21-0) period, 3,21g/dl in (0-21) period and 3,29g/dl in (60-90) period. The mean content of serum globulin was 4,39g/dl in (-21-0) period, 4,22 in (21-0) period and 4,46g/dl in (60-90) period. High content of serum total protein (>7,46g/dl) reflects hyperproteinemia as a result from an increase in globulin fractions (hyperglobulinemia).

## **RESEARCH CONCERNING THE INFLUENCE OF THE STUNNING SYSTEM ON MEAT QUALITY**

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The main objective of this study was to establish the effect of different types of stunning methods on the quality of refrigerated meat obtained from lambs, at 24 h and a week post-mortem. The main stunning methods included in the study were: electrical stunning (ES), CO<sub>2</sub> stunning and slaughter without stunning. The measurements for quality of the obtained meat included: pH, water holding capacity (WHC), cooking losses (CL), shear force (SF) and drip loss (DL). No significant differences were observed in any of the established parameters for evaluation at 24 h, but at a week post-mortem, the meat quality showed high differences, thus being evidently affected, considering each stunning technique: pH, CL and DL were lower considering slaughter without stunning and stunning with CO<sub>2</sub>. SF was affected in the case of meat obtained by ES.

## **STUDY ON NATURAL INFESTATION WITH HARD TICKS ON DOGS IN BUCHAREST**

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CRISTINA FERNOAGĂ**

Faculty of Veterinary Medicine Bucharest

Ticks from the *Ixodidae* family are arthropode parasites that have their body covered with a relatively hard shell, from which the name "hard ticks". They represent the most important vector group from Phylum *Arthropoda*, being responsible for the maintenance and transmission of pathogen agents to humans and animals, including a large number of protozoa, bacteria and viruses species. Lately, a significant growth of canine babesiosis has been observed in the southern part of the country, the disease being transmitted from ticks of the *Ixodidae* family. In the following paper, types of ticks collected from the body of dogs with babesia disease are being presented. The study was carried in Faculty of Veterinary Medicine Bucharest Clinic from September 2009 to August 2010, on a number of 83 dogs from which 418 ticks have been collected. Following the examination of the collected ticks, it has been found that they belonged to the *Demacentor reticulatus* species - 67.22% (281/418) and *Rhipicephalus sanguineus* - 32.78% (137/418). The majority of ticks were females – 84.45% (353/418), from which 67.99% (240/353) belonged to *Demacentor reticulatus* species



and 32.01% (113/353) belonged to *Ripicephalus sanguineus* species. The males represented 15.55% (65/418) of the total ticks collected, from which 63.08% (41/65) belonged to *Dermacentor reticulatus* species and 36.92% (24/65) belonged to *Ripicephalus sanguineus* species.

## **RESEARCH CONCERNING THE QUALITATIVE AND QUANTITATIVE DETECTION OF MEAT ADULTERATION BY USING A PCR ASSAY**

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A classic PCR technique was used in order to establish the authenticity of poultry and pork meat in different binary mixtures of minced meat purchased from local stores. The concentration of pork in poultry meat, in samples of 100 g each, was different: 0,5%, 1%, 2%, 2,5%, 5%, 10%, 25%, 50%, 75%, 90%, 95 %, 99% and 99,9% (w/w). After the DNA extraction, the next step was the amplification of the DNA sequences, and for the analysis of PCR products (fragments), we used agarose gel electrophoresis. The results showed the specific detection and quantification for each type of meat type by origin, in comparison to validation samples (100 % pork and 100 % poultry). The specificity of the technique is high, thus being declared a very useful tool for future authenticity tests.

## **STUDY REGARDIND THE PREVALENCE OF ENDOPARASITARY INFESTATION OF DONKEYS FROM A SHELTER**

**POLIANA TUDOR**

Faculty of Veterinary Medicine Bucharest

Donkeys are still used, in some areas, especially for transportation of goods. Their number is smaller compared with horses, and studies regarding parasitic infestation of mules in our country are rare. The present study has followed the evaluation of infestation prevalence in donkeys in a shelter from the county of Constanta, from 2009 to 2010. 92 samples of fecal matters have been examined, from which 68.48% have been positive and 31.52% negative. The fecal matters exam has indicated a 96.83% prevalence of Strongyle infestation, 6.35% Parascaris and 6.35% Eimeria.

## **PRELIMINARY DATA ON FIRST MOLECULAR SCREENING FOR PATHOGENS OF TICKS IN ROMANIA**

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The prevalence of tick-borne pathogens (*Babesia*, *Theileria*, *Rickettsia* species) in questing and feeding adult ticks was determined for first time in Romania. A total of 165 ticks were analyzed in the study. Of these, 40 were questing ticks and 125 were collected from naturally infested cattle, sheep or goats. Tick species analyzed included *Ixodes ricinus*, *Dermacentor marginatus*, *Rhipicephalus bursa* and *Hyalomma plumbeum plumbeum*.

In one of the total 40 questing *Hyalomma* specimens analyzed (representing 2.5%), *Babesia/Theileria equi* was detected, confirming the role of *Hyalomma* ticks as vector in transmission of horse piroplasmiasis. Of the feeding adult ticks analyzed, 10.48% were found infected with different pathogens: *Babesia* spp. was detected in 3.99% of *Hyalomma plumbeum*, *Theileria* spp. was detected in 6.42% of *Hyalomma plumbeum* and in 33.33% of *Ixodes ricinus*; *Rickettsia* spp. was detected in 16.6% of *Dermacentor marginatus*.

The results of the present study emphasize differences in the role that different tick species play in the pathogen's life cycle and represent a base for further epidemiological studies of tick-borne diseases in Romania.

## **THE EFFECT OF POLYPHENOLIC EXTRACTS UPON SOME HAEMATOLOGICAL AND BIOCHEMICAL BLOOD PARAMETERS IN RATS WITH ASCITOGENOUS HEPATIC TUMORS**

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The purpose of these *in vivo* studies was to follow the effect of some polyphenolic extracts obtained from mistletoe (*Viscum album*), birthwort (*Aristolochia clematitis*) and stag's-horn clubmoss (*Lycopodium clavatum*) upon some haematological and biochemical blood parameters in rats with hepatic tumors.

The administration of polyphenolic products in rats revealed the inhibition of tumor cells proliferation process in case of stag's-horn clubmoss extract.

The evaluation of haematological parameters RBC, HTC, Hb and WBC indicated an improvement of hematopoietic function in rats with ascitogenous liver tumors, the most significant results being obtained in case of stag's-horn clubmoss extract.

The investigation of some biochemical parameters (total proteins, albumins/globulins ratio, ALT, AST and GGT) demonstrated that polyphenolic extracts obtained from mistletoe, birthwort and stag's-horn clubmoss inhibited cytolysis of hepatocytes and improved the values of total proteins and albumins/globulins ratio.

## **EXTERNAL QUALITY CONTROL FOR RESULTS OF ASSAYS PERFORMED IN DIAGNOSIS AND SURVEILLANCE OF VESICULAR DISEASES OF ANIMALS**

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The participation at proficiency test studies organised by the world reference laboratories is a manner for quality control of results of performed assays. For exotic diseases, like vesicular diseases of animals, participation at the proficiency tests organised by the Community Reference Laboratory for foot and mouth disease and swine vesicular disease Pirbright represent an useful experience for laboratory emergency preparedness.

## **CASE STUDY – ENCEPHALITIS IN A 5 MONTHS OLD BOXER**

**CRISTINA FERNOAGĂ, M. CODREANU, M. CORNILĂ, F.  
GROSU, L. BĂLAN**

In this paper we are discussing the case of a 5 months old female boxer dog, which first arrived in our clinic feeling sick and showing neurological signs. After taking the case history, the clinical, neurological and complementary exams, the diagnosis given was that of encephalitis and the appropriate treatment was started (the treatment was adapted from human medicine).

## **CASE STUDY – CANINE HEARTWORM DISEASE**

**CRISTINA FERNOAGĂ, M. CODREANU, M. CORNILĂ,  
POLIANA TUDOR, F. GROSU,**

This paper presents the cases of five dogs that arrived in our clinic with mild general symptoms: tiredness, lack of breath, apathy, picky eating, and rare coughs. After taking the case history, the clinical and complementary exams, the diagnosis given was that of canine heartworm disease and the appropriate treatment was started.

During the spring and summer of this year (1.03 – 1.07.2010) in our practice there have been 5 different cases of canine heartworm disease. Given the case history and the clinical exams the dogs were sent for a hematology exam. Because of the signs and the laboratory results a blood sample exam that was taken between 6 p.m. and 8 p.m. (through direct exam, MGG colored smear or exam of the centrifugal sample) because we suspected the presence of the parasite.

## **THE STORY OF “PARASITES” INSIDE OTHER PARASITES: *DIROFILARIA* AND ITS ENDOSYMBIONT *WOLBACHIA***

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Intracellular, Gram-negative microorganisms were observed in larval stages and adults of filaria worms beginning of the seventies by McLare et al (1975). In 1977, Kozek found that such a microorganisms were transovarially-transmitted. Previously, McCall (1971) had observed that tetracycline in drinking water was able to prevent infection by *Brugia pahangi* and *Litomosoides sigmodontis* in gerbils, but not by *Acanthocheilonema vitae*. In 1995, these microorganisms were identified as bacteria belonging to the genus *Wolbachia*, well-known causative agents of several modifications in the development and reproduction of arthropods, by a team of parasitologists at Milan University (Sironi et al., 1995). Subsequently, *Wolbachia* has been observed in representatives of several filarial genera (including *Dirofilaria*, *Onchocerca*, *Brugia*, *Wuchereria*). These endosymbiont bacteria are phylogenetically close to rickettsiae and are transovarial transmitted to microfilariae. Because the presence of *Wolbachia* is necessary for filarial reproduction and survival, these studies opened the way to the use of tetracycline in the treatment of human and animal filarial infections. Furthermore, they clarified that most of the pathological effects previously considered as direct consequence of the worm, are actually due to immune-mediated inflammatory reactions induced by these bacteria. Nowadays there is an overall consistency of experimental and field data indicating that *Wolbachia* plays a central role in the immunology [innate immunity] and pathogenesis of filarial disease. The available information on filarial infection immunology and pathogenesis should be re-evaluated on the basis of the presence of *Wolbachia* taking into account that the bacteria are able to interact with cytokine patterns and polarization of the immune response, cause adverse reaction to chemotherapy, desensitization of innate immunity and increase the parasite defence against the host response (e.g. through catalase activity). The last two points open the question if *Wolbachia* is required to “manipulate” the immune response, thus allowing the long-term survival of the worms in immuno-competent hosts.

## **STUDIES REGARDING ANIMAL ANESTHESIC HIPOTERMIA**

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It is known that general anesthesia suppress termoregulating centers, decreases metabolism and dilates the peripheral vessels, that the patient becomes almost poikilotherm. If the operating room is cold, body temperature can drop to 32-34 C and affect the physiological constants, leading the body to unpredictable developments, difficult to control.

It is known that general anesthesia suppress termoregulating centers, decreases metabolism and dilates the peripheral vessels, that the patient becomes almost poikilotherm. If the operating room is cold, body temperature can drop to 32-34 C and affect the physiological constants, leading the body to unpredictable developments, difficult to control.

The mechanisms by which anesthesia have hypothermic effects are multiple and require body temperature monitoring throughout the surgical procedure and anesthesia recovery. It prevents heat loss by removing the casual factors by removing the casual factors, heat loss compensation and by stimulating heat production by appropriate means.

Based on animal clinical observations(dogs and cats) effectual paper proposes several protocols and procedures easy to do in terms of minimal equipment.

## **AN UNUSUAL CASE OF PRIMARY INTESTINAL CANINE OSTEOSARCOMA**

**L. LEONARDI, MANDARA M.T., MECHELLI L.**

An unusual case of primary extraskelatal intestinal Osteosarcoma in a 14 year-old, male, Cocker is presented here. Clinical work up showed a tumor involving abdomen and **small intestine**. Masses or tumors involving other organs were excluded. The patient underwent a wide excision of the tumor with a partial enterotomy. The mass was firm and 10,0 x 8,0 x 6,0 cm in size and the cut surface showed white multinodular area alternate with necrotic and haemorrhagic areas. Although clinical unsuspected in this unusual site, the histopathological investigations revealed features of a tumor invaded the muscular intestinal tonaca with diffuse production of osteoid matrix amidst the tumor cells was diagnostic for osteosarcoma.

## **A CASE OF ESOPHAGEAL STRICTURE AND THE IMPORTANCE OF DIGESTIVE FLEXIBLE ENDOSCOPY IN THE DIAGNOSIS AND PROGNOSIS ESOPHAGEAL STRICTURE**

**DANIEL LESCAI**

Salvavet-Ilioara Animal Hospital

This is a study that emphasizes the importance of the digestive flexible endoscopy in the diagnosis and prognosis of the esophageal strictures. This is the case of a toy breed dog with a history of bone ingestion and retention in the mid esophagus. The study also deals with other diagnostic techniques as the contrast x-ray exposures. It is found that the endoscopy procedures offers new and valuable details of the location and true aspect of the stricture. One can even assess the dimesions of the scars and the location of the stricture regarding local landmarks as the base of the heart, distal esophageal sphincter, tracheal indentations. It is by all means the only method for the remedy of esophageal strictures even if in repeated procedures. Local pictures of the stricture site itself are most suggesting of the advantages of the digestive flexible endoscopy.

## **NEW APPROACHES IN THE DIAGNOSIS OF TRAUMATIC RETICULITIS**

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Due to the fact that clinical signs in traumatic reticulitis are common to other diseases, it is necessary to make paraclinical investigations, in order to establish a correct diagnostic.

Other than blood tests and ruminal liquid tests, the most used paraclinical investigations are the ultrasonographic examination, ferroscope examination and the radiological examination.

The echographic examination is very useful to take samples for bacteriological examination, to evaluate the extent of the lesions and to guide a surgical procedure. However, it cannot be used as sole means for a precise diagnostic, because of the need to differentiate between abscesses, neoplasms and granulomatous lesions. The ultrasonography of the heart and of the thorax is useful in the diagnostic of pleuritis and pericarditis.

On the other hand it is known that radiology plays and important part in the diagnostic of several thoracic illnesses.

Our studies show that in traumatic reticulitis as well the radiological examination can show metallic bodies present in the reticulum. To determine whether the reticulum has been punctured, the foreign body must be visible beyond the border of the reticulum. The most important radiographic changes, that must be taken into account, are: a

concavity at the level of the cranio-ventral side of the reticulum or the identification of an abscess, of a soft tissue mass or of an accumulation of liquid in the cranial part of the abdomen.

Our objective was to prove that the radiological examination is the best method to visualize and evaluate the orientation of metallic foreign bodies.

This study was made over a long period of time, on the area of Santău veterinary private practice, Satu-Mare County, on a total of 326 bovines of different ages, Holstein, Brună de Maramureș and Bălțată Românească purebreds, as well as crossbreds between them.

Individuals suspected of traumatic reticulitis underwent a complex clinical examination, followed by paraclinical investigations.

## **GLYCOBIOLOGY, LECTINS AND MEDICINE**

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Glycobiology, notion first introduced by Prof. Raymond A. Dwek, studies everything about carbohydrates' and other glucides bearing molecules' structure, biosynthesis and biological function. Sugars play a large array of biological activities due to their multiple binding capacity that involves them in the store of a large amount of biological information. Lectins, as carbohydrate-binding proteins described in almost all living organisms, are the great translators and initiators of the expression of the information contained by the glucides. Glycobiology has become one of the most interesting domain for biomedical research. The aim of the present approach is to review the most outstanding application and correlation of glycobiology, lectins and medicine, with special emphasis on host-pathogen interaction and immunomodulation.

## **PUBLICATION IN THE ELECTRONIC MEDIUM OF SCIENTIFIC ACADEMIC RESEARCH RESULTS IN THE CONTEXT OF INTELLECTUAL PROPERTY, COPYRIGHT AND RELATED RIGHTS**

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The main purpose of research is to produce new knowledge. Scientific papers, such as articles in specialized journals, proceedings, articles in reference works, scientific blogs, Institutional Repositories, act as lucrative form of this new knowledge. Academic publishing (scientific) describes a system that uses necessarily a formalized subsystem of scientific review and makes information available for large academic audiences. This system varies relating to results, organization and competences from one scientific domain to another. The paper considers legal constraints on the

publication as open access of works covered by copyright which must fully comply with intellectual property rights, respectively copyright law and to reward the authors correctly. In this context it is emphasized the importance of legislation designed to ensure an adequate legal framework for intellectual property rights of authors and involvement of European and national legislative bodies in this direction. It is emphasized the importance of legal provisions on copyright, developed in a flexible manner to foster development, creation and exploitation of works creative content.

## **EXTENSIVE RAISING SYSTEM INFLUENCES THE NON-SPECIFIC IMMUNE REACTIVITY IN BOVINE**

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Monitoring the changes of the immune system in various environments could provide useful information for dairy cow breeders to ensure optimal rearing and welfare conditions for their animals. The research envisaged the global influence of household farming of 12, Romanian Spotted dairy cows aged 5 to 10 years, on humoral and cell-mediated immunity at innate level. Total immune globulin (tIg) and circulating immune complexes' (CIC) levels were quantified by precipitation techniques (2.4% zinc sulphate and 4.5% polyethylene glycol, respectively), red spectrophotometrically and expressed as conventional units. Phagocytosis was monitored by an *in vitro* carbon particle inclusion test over time, with readings of optical densities by spectrophotometry ( $\lambda=535\text{nm}$ ,  $d=0.5\text{cm}$ ). Untreated blood and alcohol as well as alcoholic *Silybum marianum* extract treated variants were incubated with India ink at 37°C for 0 (t0), 25 (t1) and 50 (t2) min. Optical density readings were converted to a log<sub>2</sub> scale and phagocytic index was calculated as the negative of the slope of the regression of optical density (log<sub>2</sub>)(t0-t1, t1-t2). tIg and CIC values were relatively high, when compared to physiological values (40.1±16.6 and 7.50±5.16, respectively) but they stayed lower than those encountered in intensive raising. Phagocytosis was diminished both in control and treated variants, compared to normal values. The *Silybum marianum* extract exerted a negative effect on innate cell mediated activity. Extensive farming apparently had a more pronounced negative effect on innate cell-mediated than on innate humoral immunity in dairy cows.



## **CHANGES OF ADAPTIVE CELL-MEDIATED IMMUNITY FOLLOWING THE *IN VITRO* VEGETAL EXTRACT TREATMENT IN EXTENSIVELY RAISED DAIRY COWS**

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Lymphocyte activation or their stimulation refers to a correlation of their *in vitro* activity with phenomena regularly happening *in vivo*, as the host interacts with an antigen. Thus, the *in vitro* blast transformation capacity serves as a measure of the reactive potential of the cells and also as a tool to monitor the efficacy of various components (drugs, antigens, other active compounds) in modulating this response. The investigations were carried out on 12 Romanian Spotted dairy cows aged 5 to 10 years, kept on private households, considered extensive farming conditions, to evaluate the efficacy of alcoholic extracts of milk thistle (*Silybum marianum*), common seabuckthorn (*Hippophae rhamnoides*), bilberry (*Vaccinium myrtillus*), thyme (*Thymus vulgaris*) and medicinal aloe (*Aloe vera*) on adaptive cell-mediated immunity. Blood samples were collected on heparine (50UI/ml), transferred in culture medium (RPMI 1640, 1;4) and distributed in duplicate as 200 microliter aliquots, in 96 well plates. After 60 h of incubation at 37 °C, glucose levels in the culture supernatants were quantified by an orto-toluidine colorimetric test. Blast transformation indices were calculated as percentages of glucose consumed from the initial amount present in the culture medium. Statistical parameters were calculated by use of Excel program. There were no significant differences between the experimental variants, except for those treated with *Vaccinium myrtillus* and *Thymus vulgaris* ( $p < 0.05$ ) versus PHA and alcohol treated variants ( $36.68 \pm 19.98\%$  and  $35.36 \pm 10.67\%$  versus  $58.26 \pm 25.41\%$  and  $58.96 \pm 15.25\%$  respectively). Although the stimulation index of the control culture was a physiological one ( $56.78 \pm 12.16\%$ ) none of the extracts had a stimulating effect. Furthermore, some of the extracts (*Vaccinium myrtillus* and *Thymus vulgaris*) exerted a strong inhibiting effect, showing that some of the plants found on pastures could negatively influence the adaptive cell mediated protection in extensively raised dairy cows.

## **HISTOLOGICAL AND ULTRASTRUCTURAL ASPECTS OF THE LIVER IN EXPERIMENTAL OCHRATOXICOSIS OF BROILER CHICKENS**

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Investigation were conducted on 2 groups, each of 15 broiler chickens. Experimental group received ochratoxine A (OTA) orally, in sunflower oil suspension, daily, for 21

days in doses of 50 µg/kg b.w. Control group (of 15 chickens) received only sunflower oil. 5 chickens from each group were killed after 7,14 and 21 days of the experiment.

Histological exam of liver evidenced congestion, steatosis and zones of necrosis of hepatocytes and endothelial cells.

Ultrastructural changes of hepatocytes were more evident at 21st day of the experiment. In the hepatocytes, lipidic vacuolae, fragmentation and dilatation of smooth endoplasmic reticulum, decrease number of ribosomes attached to endoplasmic reticulum, increased number of free ribosomes into the cytoplasm, vacuolar lipidic inclusions, ballooned mitochondria with smaller cristae and lipidic droplets into it, and loose of membrane integrity were observed. Glycogenic granules in the hepatocytes were also observed. The nuclei of the hepatocytes had irregular shape, contained large lipidic vacuolae and electron-dense inclusions and into the cytoplasm. Mitochondria were totally deintegrated and many myelin-like figures were observed. In control group the bile canaliculi showed numerous expansions of the hepatocytes. In experimental groups both the number and the height of microvilli were reduced.

## **INFLUENCE OF THE INTENSIVE HUSBANDRY ON INNATE IMMUNITY IN DAIRY COWS**

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The immune system is being considered a very sensitive indicator of stress in all species (Harmon, 1991). This research aimed to monitor the global influence exerted by intensive farming conditions on indicators of innate immunity such as total immune globulins (tIg), circulating immune complexes (CIC) and phagocytosis in milking cows (n=28) aged 5 to 11 years. Sera and blood samples collected on heparine were subjected to zinc sulphate precipitation, polyethylene glycol precipitation and carbon particle inclusion test, respectively. Both tIg and CIC values were read spectrophotometrically after 30 ( $\lambda=475$  nm) or 60 ( $\lambda=450$  nm) min of incubation, respectively and expressed as conventional units. Phagocytosis was monitored in untreated and an alcoholic *Silybum marianum* extract treated samples, read spectrophotometrically after 0 (t<sub>0</sub>), 25 (t<sub>1</sub>) and 50 (t<sub>2</sub>) min of incubation at 37°C. Optical density readings were converted to a log<sub>2</sub> scale and phagocytic index was taken as the negative of the slope of the regression of optical density (log<sub>2</sub>)(t<sub>0</sub>-t<sub>1</sub>, t<sub>1</sub>-t<sub>2</sub>). There was an increase in both tIg (51.8±11.2) and CIC (6.80±5.45) levels when compared to physiological values, probably due to a higher bacterial load of the environment and increased stress induced by the raising technology. Spontaneous phagocytosis was negatively influenced by the increase in incubation time (0.01±0.05, during the first period versus -0.13±0.16, during the second period). The *Silybum marianum* extract exerted a positive effect during the second period of incubation (0.02±0.12 versus -0.14±0.10), suggesting the possibility of its use as a phagocytosis

stimulating agent. We concluded that intensive farming factors increased the innate humoral immunity and decreased the cell mediated immunity in milking cows.

## **MODULATING POTENTIAL OF CERTAIN VEGETAL EXTRACTS ON ADAPTIVE CELL MEDIATED IMMUNITY IN INTENSIVELY RAISED DAIRY COWS**

**MARINA SPINU, SILVANA POPESCU, CARMEN DANA SANDRU, MIHAELA NICULAE, G. F. BRUDASCA, EVA-ANDREA LAZAR, IULIA RINDT, R. STEFAN, G. DUCA, D. CADAR**

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The artificial microclimate and intensive raising are factors of influence and disrupt the fragile balance of highly productive animals as milking cows. This study aimed to investigate the potential *in vitro* use of certain vegetal extracts in modulating the specific cell mediated-immunity of milking cows. The protocol included a single blood sampling from the jugular vein of each of 28 Romanian Spotted animals, aged 5 to 11 years, raised on an industrial farm. Blood was collected on heparine (50 IU/ml), mixed with RPMI 1640 culture medium, distributed in 200 µl aliquots in 96-well plates and treated with vegetal extractions, as follows: untreated control sample; phytohaemagglutinin treated variant; 70° alcohol (solvent) treated control; *Silybum marianum* treated variant; *Hippophae rhamnoides* treated variant; *Vaccinium myrtillus* treated variant; *Thymus vulgaris* treated variant; *Aloe vera* treated variant. All variants were performed in duplicate, using 1.5 µl of compound / well. The plates were incubated at 37°C in a 5% CO<sub>2</sub> atmosphere for 60 hours. Cell growth was estimated by spectrophotometrical measurement ( $\lambda=610$  nm, d=0.5 cm) of the glucose residue in a colorimetric orto-toluidine test. Blast transformation indices were calculated as percentages of the consumption versus the initial glucose concentration of the RPMI 1640 medium. The data were statistically interpreted, by calculating mean values and standard deviations as well as the statistical significance of the differences by use of Student's t test. The results indicated inhibitory effects for all tested extracts when compared to the untreated control (60.28±37.73%), suggesting their negative influence on blast transformation capacity of leukocytes. The *Aloe vera* extract was the only one to stimulate cell growth, when compared to the solvent treated control (57.94±37.19% versus 54.86± 21.71). Out of the tested extracts none could be used to stimulate adaptive cell mediated immunity in cows raised under intensive farming conditions.

## **USING OF THE SEROLOGICAL SCREENING THE PRESENCE AND THE PREVALENCE OF PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME IN EASTERN ROMANIA**

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Considerable progress recently made by the medical and biological sciences and also extension of increasingly large of the intensive farming systems require today not only solving new problems, but also the reconsideration of the old concepts about the rapidly increasing number of the animals and protection of their health.

Abortion is the most important expression of the production losses when the incidence of an infectious agent increases in the herd. The increase may precede the introduction of the replacement animals. About 38% of reasons are infectious. A lower rate of abortions of 2% exist in almost all herds.

Causes of the premature birth are stress, poor nutrition and some time may occur because of the genetic modifications, but the exact reasons are not always known.

The aim of this paper was to report the presence and the prevalence of the porcine reproductive and respiratory syndrome in the Eastern Romania.

The most positive serological answers was were found in the Bacau County (70.52%), follow by Neamt county ( 4.76%). The reason of positive serological answers is keeping and using for breeding of the positive serological animals.

Mechanism which occurs in a viral infectious cycle is not complete understood, but what is important is the infecting viral dose. Considering that swine farms were suspected for the first time on this infection (when samples were collected for PRRS diagnostic) important was the quantity of excreted virus that favorev infection of the susceptible animals.

## **COMPARATIVE EVALUATION THROUGH BIOFEEDABACK INVESTIGATION REGARDING RISK FACTORS IN PROSTATE DISEASE FOR HUMAN AN CANINE PATIENTS**

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The present work has followed the identification and corroboration of data, coming from patients with prostate disease, between well established clinical investigation (physical examination, ultrasound) and biofeedback evaluation.

The data obtained using the electrophysiological biofeedback investigation has been compared both in human patients and patients from the canine species which had been previously diagnosed with inflammatory and degenerative disease of the prostate tissue.

Risk factors have been obtained and shown in graphics, and are similar for the two species in regards to: environmental influence, food intake, water pH, radiation exposure, a number of pathogen agents, previous traumas, low immunity level, inflammation sensitivity and incomplete oxidation.

The investigations that have been made are pursuing the corroboration of data pertaining to risk factors for the purpose of the prophylaxis of these conditions on both canine and human and could eventually represent the basis of pilot studies done on canines for the purpose of perfecting treatment and diagnose in human medicine.

## **DYNAMICS OF BIOCHEMICAL BIOMARKERS FOR TESTICULAR FUNCTION CONSECUTIVE RATS EXPOSURE TO POTASSIUM DICHROMATE (THREE GENERATION EXPERIMENT)**

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The aim of the study was the evaluation of potassium dichromate impact on integrity and performances biomarkers of male reproductive system. The concrete objective was the estimation of potassium dichromate impact on biochemical biomarkers for testicular function, seric testosterone and LH level (three generation experiment).

The study was carried out for each generation on 28 white Wistar male rats mated with white Wistar female rats – ratio 2 females: one male, both exposed for three months before mating to potassium dichromate via drinking water as follows: E<sub>1</sub>: 25 ppm Cr VI (LOAEL); E<sub>2</sub>: 50 ppm Cr VI; E<sub>3</sub>: 75 ppm Cr VI. The male rats from F<sub>1</sub> and F<sub>2</sub> generation were exposed *in utero*, via milk until weaning and via drinking water until sexual maturity at the same hexavalent chromium level.

The study pointed out: significant decrease of seric testosterone level comparative to control group and in inverse correlation to exposure level, in F<sub>0</sub>, F<sub>1</sub> and F<sub>2</sub> generations; significant increase of seric LH level comparative to control group and in direct, correlation to exposure level, in F<sub>0</sub>, F<sub>1</sub> and F<sub>2</sub> generations; decrease of seric testosterone level in F<sub>1</sub> generation comparative to F<sub>0</sub> generation, significant only in E<sub>1</sub> and E<sub>3</sub> groups; decrease of testosterone seric level in F<sub>2</sub> generation comparative to F<sub>1</sub> generation, significant only in E''<sub>2</sub> group; decrease of testosterone seric level in F<sub>2</sub> generation comparative to F<sub>0</sub> generation, significant only in E''<sub>1</sub> and E''<sub>3</sub> groups; significant increase of LH seric level in F<sub>1</sub> generation comparative to F<sub>0</sub> generation; increase of LH seric level in F<sub>2</sub> generation comparative to F<sub>1</sub> generation, significant only in E''<sub>3</sub> group; significant increase of LH seric level in F<sub>2</sub> generation, comparative to F<sub>0</sub> generation. In all experimental groups testosterone level was under physiological limits, and LH levels were over physiological limits.

## **HISTOPATHOLOGICAL, IMMUNOBLOTTING AND IMMUNOCYTOCHEMICAL ASPECTS IN SCRAPIE**

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As it is known, scrapie, widely regarded as the prototype heterogeneous group of transmissible spongiform encephalopathies (TSEs) in ruminants so feline, mink, deer and humans, was first diagnosed histologically and then by immunohistochemistry. The presence of PrP<sup>sc</sup> was demonstrated both in different segments of the brainstem and in some mucosal associated lymphoid structures.

This paper provides a comparative assessment of the presence of PrP<sup>sc</sup> and specific changes of the neuropil and pericaria in certain anatomic nuclei of the spinal bulb of sheep in relation to scrapie diagnostic significance. The researches have been conducted on a total of 17 cases of scrapie in indigenous sheep, the disease being confirmed histologically and immunohistochemically.

Research result of histological, immunoblotting and immunohistochemical showed significant comparative aspects for the diagnosis of scrapie, while the structures identified and subjected to further investigation of PrP<sup>sc</sup> by Western blotting method of differentiation, were relevant for the classical type of scrapie.

## **MATHEMATICAL MODELS FOR ENERGY-PROTEIN METABOLISM IN DAIRY COWS**

**R. BURLACU**

Authors used empirical equations for mathematical modelling the energy-protein metabolism in dairy cows.

Results achieve applying this model on dairy cows case are different to dates obtain from the other authors  $\pm 2.7$  percent average, medium average could be  $\pm 1.1$  percent.

Accepting zero net milk energy experimentally obtain correspond with zero net milk energy calculate, result a function by type:  $Y = bX$ , which shows an insignificant deviation of B from to 1 value and a significant correlation of variables.

## **THE STUDY OF ANTIBACTERIAL EFFECT OF XCUO (100-X) [55B<sub>2</sub>O<sub>3</sub> 45ZNO] VITREOUS SYSTEM**

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This paper studied the antibacterial effect of the xCuO (100-x) [55B<sub>2</sub>O<sub>3</sub>45ZnO] vitreous system for  $0 \leq x \leq 15$  mol%, by the method of dilution in simple broth, the degree inhibition degree being measured by spectrophotometry.

The prepared system presents an inhibitory effect over the *E coli* while the *Micrococcus lysodeicticus* proves to be little sensitive in the interaction with this agent. For the *E coli*, the inhibition is due more to ZnO than to the CuO, the minimal optical density measured being four times smaller than the one of the control sample.

## **EFFECTS OF VARIOUS PLANT POLYPHENOLS ON LIPID PEROXIDATION, REDUCED GLUTATHIONE AND SOME ENDOGENOUS ENZYMES IN STRESSED MICE**

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The aim of the study was to investigate the effect of hawthorn (*Crataegus monogyna*), wild pansy (*Viola tricolor*) and nettle (*Urtica dioica*) extracts on the occurrence of oxidative stress in the liver of mice by measuring the extent of oxidative damage as well as the status of the antioxidant defense system. Plant extracts were administered orally (100 mg/kg body weight) and the levels of thiobarbituric acid reactive substances (TBARS), superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx), glutathione-S-transferase (GST) and reduced glutathione (GSH) were estimated in oxidative stress induced on mice. The levels of TBARS were increased in stressed control mice by +249.02 % in comparing to the normal control group. Administration of plant extracts to stressed mice decreased the levels of lipid peroxidation. The decrease in SOD activity of the stressed mice liver was evident:  $9.2 \pm 0.8$  U/mg protein (normal mice) to  $4.8 \pm 0.7$  U/ mg protein (stressed mice). Plant polyphenols administration on stressed mice showed significant increase in CAT status:  $1.8 \pm 0,3$  U/mg protein for hawthorn (*Crataegus monogyna*),  $2.1 \pm 0,3$  U/mg protein for wild pansy (*Viola tricolor*) and  $2.5 \pm 0.4$  U/mg protein for nettle (*Urtica dioica*), while CAT level in stressed mice was  $1.4 \pm 0,2$  U/mg protein. Polyphenols plant administration improved GST activities in oxidative stress induced mice:  $5.4 \pm 0.3$  U/mg protein for hawthorn (*Crataegus monogyna*),  $6.1 \pm 0.4$  U/mg protein for wild pansy (*Viola tricolor*) and  $6.8 \pm 0.5$  U/mg protein for nettle (*Urtica dioica*). The

activities of GSH were decreased in stressed mice:  $18.6 \pm 2.3$  mg/ 100 g tissue when compared to normal mice group:  $36.7 \pm 2.2$  mg/ 100 g tissue.

## **APPLICATION OF BONE MARROW MONONUCLEAR CELLS IN IMMUNOTOLERANCE INDUCTION FOR DISCORDANT COMBINATION (DOG-POULTRY)**

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The aim of the present study was to establish the potential of bone marrow mononuclear cells in the induction of immunological tolerance towards xenoantigens. There have been used 120 embryonated eggs (COBB 500 hybrid embryos) which were inoculated during incubation with bone marrow mononuclear cells derived from dog and isolated on Ficoll-Hypaque. Two methods for inducing immunotolerance to discordant xenografts were used: inoculation in allantoic sac and *in ovo*, at sixth, respectively fifth day of incubation. At the age of three weeks, the resulting birds were tested for donor-recipient compatibility using mixed lymphocyte reaction; also, at this age, lymphocyte profile of the recipient individuals has been evaluated. Further checking was done by dogs' skin transplantation on poultry at the age of four weeks. The subjects have been examined daily, paying attention to the 21 macroscopic characteristics of the transplanted skin. In the purpose of histopathological exam, tisular samples (grafts and 1-2mm adjacent skin) were excised at three days after transplant. Clinical, paraclinical and histological findings suggests that inoculation of bone marrow mononuclear cells using the two mentioned methods not provides specific or complete immunotolerance in dog - poultry discordant combination.

## **THE EFFECT OF SEA BUCKTHORN POLYPHENOLS UPON DISCOLORATION AND LIPID PEROXIDATION OF PORK AND BEEF GROUND MEAT DURING REFRIGERATION**

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During refrigeration of minced meat, two major oxidative processes can occur: myoglobin autoxidation and unsaturated fatty acids autoxidation, which are responsible for the changes in meat's color and smell. In order to evaluate these two processes, it is necessary to determine the concentrations of myoglobin and metmyoglobin, as well as the primary and secondary products of fatty acids oxidation, represented by conjugated dienes (CD), conjugated trienes (CT) and thiobarbituric acid reactive substances (TBARS).



Plant polyphenols can improve both color and flavor stability in meat because they are iron chelators, effective scavengers of free radicals and can inhibit lipid peroxidation. The aim of this study was to evaluate the discoloration and lipid peroxidation processes of pork and beef ground meat after its treatment with polyphenols extracted from sea buckthorn, during refrigeration.

The addition of sea buckthorn polyphenols in ground meat slowed the oxidation of myoglobin to metmyoglobin, having as an effect the reduction of meat's discoloration process during refrigeration. Sea buckthorn polyphenols can inhibit lipid peroxidation in pork and beef ground meat during refrigeration. This process reflected in the decrease of conjugated dienes, conjugated trienes and thiobarbituric acid reactive substances' concentrations.

## **PREVALENCE AND MORPHOLOGICAL CHARACTERISATION OF *ECHINOCOCCUS GRANULOSUS* LARVAE IN SOME LIVESTOCK FROM THE SOUTH AREAS OF ROMANIA**

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Cystic echinococcosis is a major zoonosis with an important economic and public health impact. For the domestic livestock the economic impact of cystic echinococcosis consists in lowering the productivity and in addition losses from condemnation of the affected organs.

In the present study the prevalence and morphological characterization of hydatid cysts in some livestock in two abattoirs from the South areas of Romania were determined. The prevalence of hydatid cysts was highest in sheep (95.65 %), followed by cattle, with differences between animals from households (88.23%), and those from specialized farms (40.34%); a lower prevalence was registered in horses (25 %), and the lowest in pigs (1.03%). The fertility of hydatid cysts was highest in sheep (58,53 %), while in cattle proportion of the fertile cysts was very low (0.36 %).

## **TECHNIQUES FOR ASSESSMENT OF EVOLUTIVE ASPECTS IN IDIOPATHIC EPILEPSY IN DOGS**

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Often, the diagnosis of epilepsy in dogs is done after routine investigations. The evolutive aspects and relevant assessment of the therapeutic effectiveness are difficult or impossible to predict. In this paper we present the advantages of the two examination techniques useful in the diagnosis and monitoring of idiopathic epileptic dogs.

## **STUDIES CONCERNING THE HUMORAL IMMUNE RESPONSE IN SHEEP INOCULATED AGAINST CONTAGIOUS AGALAXIE**

**TURCU D., A. TUDOSE, MARIANA OPORANU, D. CONDUR,  
P. GRIGORESCU, G. BARBOI**

The research was done on two batches of sheep > batch A (n=10) that did not get the vaccine, used as control batch, and batch B (n=10), experimental, that did the vaccine against contagious agalaxie. The experiment lasted 65 days, during which time 4 blood samples were taken: when the first inoculation was performed ( $T_0$ ), 21 days after the second inoculation ( $T_1$ ), 45 days after the first inoculation ( $T_2$ ) and 65 days after the first inoculation ( $T_3$ ). The inoculation effect was evaluated by following in dynamics some humoral immunological parametria: serum protein fractions, G immunoglobulin (IgG), total protein and lysosyme. The data were statistically analysed using the Student-Fisher method. Using the computer analysis of electrophoresis an increase of the globuline values was seen, especially of gamma globulin in batch B in comparison with batch A, after the second inoculation ( $T_1$ ). The average values of IgG and of the total protein registered a highly significant increase at  $T_2$  and  $T_3$  ( $p < 0.001$ ) in the experimental batch in comparison with the control batch. The lysosyme showed high values at 45 days ( $T_2$ ) and at 65 days ( $T_3$ ) from the first inoculation in batch B in comparison with batch A ( $p < 0.001$ ). The quantification of the anti-Mycoplasma agalactiae specific antibodies pointed out high values of DO after the second inoculation.

## **HEART RHYTHM DISORDERS IN DOG**

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This study sought to differentiate the physiological disturbances of heart rhythm of their pathological aspects in dogs of different breeds and ages. With a mobile ECG (CARDIOLINE DELTA1 PLUS), electrocardiograms were performed by standard method of the six bipolar limb derivatives. Compared with reference data characteristic regular sinus rhythm were identified aspects of sinus tachycardia (mean heart rate 200 b / min, the presence of TP wave, PQ interval duration <0.06 s, QT duration <0.15 s), issues of sinus bradycardia (average heart rate 50 b / min during the PQ interval > 0.13 s, QT duration > 0.25 s), stopping sinus issues (PP interval duration > 0.12 s). Depending on clinical context, the systolic blood pressure, heart sound intensity changes, the response to carotid sinus massage, the response to vagal blockade by i.v. injection with atropine, could determine the origin of these changes of heart rhythm.

## **SOME PARTICULARITIES CONCERNING THE EFFECTS OF EXPERIMENTAL HYPO- AND HYPERTHYROIDISM ON HEMATOLOGICAL HOMEOSTASY IN DOMESTIC RABBIT (*ORYCTOLAGUS CUNICULUS*)**

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In this paper it was determined the main effects of experimental hypo- and hyperthyroidism upon the hematological parameters in adult domestic rabbits, two years aged. Hypothyroidism status was performed by administering of goitrogen cabbage juice in the composition of the fodder, while hyperthyroidism by thyroxin administering. Blood was sampled two days intervals following 10 days of experimental treatment and main hematological parameters were determined. Erythrocyte number, hemoglobin content and hematocrit were no significant modified over the 10 days of experimental treatment. On the other hand, protein, lipid and cholesterol levels in the blood plasma were found elevated. The fat content of the blood plasma was elevated both in hiperthyroidian and hypothyroidian rabbits at the end of the treatment. The main metabolic enzymes shoved elevated activities for GGT, ALT and AST in both hyperthyroid and hypothyroid rabbits while LDH in thyroxin treated rabbits only.

## **TESTIMONIES OF MEDICAL PRACTICE IN THE ROMAN PEOPLE TIME GETO-DACIANS**

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Art healing the Romanian people has existed millennia, but could be considered ancestral, and its inalienable fund, common to all Romanian-inhabited regions, allows to identify a primary form, this archaic art, which, after some historical clues and language , we can assign the Thracians, namely priests Geto-Dacians. A particular aspect relating to prehistoric medical traditions, already noticed, is that from the ninth millennium BC, have been produced in the Carpathian Area artistic figures of clay-biological character, representing men and women were found also anthropomorphic statuettes and vases which are spirals or lozenges spiral plexus located just next to psycho-energy

## **CLINICAL TESTING OF EFFICACY GALLIVAC REO IMMUNOLOGY, ANTI-VIRAL ARTHRITIS**

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Avian reovirus is responsible for several pathological entity, but of these most common is arthritis

The reovirus infection are susceptible chickens and turkeys.

The chickens are more sensitive than a day. With advancing age, the sensitivity decreases.

Transmission of the virus is carried by eggs, airway or digestive track. Prolonged excretion of reovirus and resistance to environmental factors have made the main route of transmission is via ingestion of water and digested by contaminated feed.

Viral arthritis occurs in 4-5 weeks of age in hens mortality does not exceed 6%.

Infection may develop acute, chronic or even without clinical signs. The infection is manifested by a state of irregularity, the chickens are shriveled and no longer moving.

Given the possibility of both vertical and horizontal transmission of the disease and virus resistance than the phisico-chemical factors in trhe environment, general preventive measures are not sufficient for the prevention of disease in the herd.

The disease immunoprophylaxis using vaccines both live and inactivated vaccines as. Live vaccines are used to immunize chickens, can be administered since the first day of life.

Inactivated vaccines are used for breeding herd immunization ( at 18-22 weeks of age), calves for antibody transmission from chickens to prevent the occurrence of both arthritis

## **RESEARCH ON THE LUNG, ESOPHAGUS, INTESTIN AND KIDNEY HISTOSTRUCTURE OF SWINE FETUS AGED 50 AND 60 DAYS OLD**

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The authors have studied the histological structure of organs of the thoracic and abdominal cavity in swine embryos aged of 50 and 60 days after having used a fixing solution of saline formol a paraffin inclusion and after the serial division into section of the organs.

The sections have been coloured with HE methods, Mallory trichromical method, silver impregnation Gömöri method.

Lung at age 50 days shows a weak differentiation of bronchial tree is found to differ according to histological structure of the organization lung. Lobes lung are bounded by connective tissue which shows perilobular loose network of mesenchymal tissue. At the age of 60 days extralob bronchi shows advanced stage of differentiation, both in the bronchial epithelium and cartilage in the muscular tunic.

Esophagus in 50 days is going structural organization. Esophagus shows three tunics (mucosa, muscular and adventice), not differentiated submucosa. Muscle lacking mucosa. At 60 days, esophageal mucosa is under differentiation, being present both stratified pavement epithelium and corion soft type.

Small intestine from fetuses of 50 days shows villous extensive corion intestinal mucosa is poorly developed and lacking Lieberkuhnn glands. At 60 days, the intestinal epithelium shows no caliciform mucous cells, the apical pole of enterocytes is differentially present microvillii as forming "striated shelf".

Kidney at 50 days shows nefron differentiated morphologic structure. Malpighi corpusculuii are highlighted and appear differentiated podocitele of Bowman membrane structure. At 60 days tubules keep urine shows nefroread functional and appear at the apical pole poorly differentiated micro Vilia willingi form of „edge in the brush”. Reticulin fibers are evident, not present structural elements of the juxtaglomerular apparatus.

## **EXPERIMENTAL RESEARCH ON THE HEALING EFFECT OF STERILE POWDER OF CORN SMUT(USTILAGO MAYDIS) IN DECUBITUS AND TRAUMATIC WOUNDS**

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It has been studied evolutionary stagies of wound healing in decubitus and traumatic wounds and skin tissue remodeling effect of lesion, using a sterile product in powder form obtained out of corn smut spores (*Ustilago maydis*).

The assessment of healing effect of sterile powder obtained out of corn smut (*Ustilago maydis*) on restoring damaged skin tissue was performed by macroscopic and histological observations by comparing changes that occurred during wound healing.

The results were compared individually, within batches of animals, observing the character of uniformity of the therapeutic effect in conditions in which the differences were minimal.

Herbal components showed besides stimulating effect on the evolution of healing, analgesic and antipruritic effects, reducing animals' concern for their own lesions.

Treatment with sterile powder of corn smut ensures rapid wound healing leading to a functional and aesthetic scar.

The product was well tolerated, showing reduced antigenic reaction and biocompatibility with no complications or evolution to pathological scarring.

## **CHECK METHODS OF EXPIRY DATE OF MEAT PREPARATIONS AND IMPORTANCE THEREOF**

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Purpose of the paper – This paper fits the scope of current concerns in the food safety field and brings to the fore the compliance methods of meat preparations from a sensory and physicochemical point of view with expiry dates and the necessity to check expiry dates with a view to marketing quality products that are safe for consumption for the purpose of protecting the consumers.

Working methods – The paper presents the determination methods of expiry dates of meat preparations, for which organoleptic and physicochemical tests are carried out in order to assess the freshness of meat products by determining the level of easily hydrolysable nitrogen and the stage of fat oxidation (Kreis test). In event of occurrence of organoleptic and physicochemical changes of parameters, the assessment of the healthiness of the product follows, carried out by microbiological determinations of microorganisms incriminated for food-borne infections of interest for the meat industry and preparations.

Results – In order to observe the organoleptic features within and after the expiry term, analyses were carried out on categories of meat preparations for a certain period of time, while for the check of the expiry and assessment of freshness a number of samples were collected starting with January 2009 onwards and sent to the laboratory and subsequently conclusions were inferred.

Conclusions – food preparation production for consumption must mainly consider the protection of life and health of population, the meeting of the consumption necessities of all consumer categories and the compliance with the conditions imposed by legislation regarding labelling and supply of all necessary information with respect to the keeping, handling and consumption.

## **RESEARCH ON THE COMPARATIVE QUALITY OF MEAT PRODUCTS OBTAINED IN SPECIALIZED UNITS**

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The study of the level of physicochemical parameters of meat products constitutes a direct method of quality research. The methodology includes food sampling, physicochemical analysis and interpretation of the results as compared to the norms in force..

The following physicochemical determinations were performed: humidity, fat substances, protein substances, collagen, the connection protein/ collagen, the sodium chloride and nitrites, expressed in  $\text{NaNO}_2$  during the period 2008 – 2010 in authorized laboratories, for the meat product Victoria Sausage from five, seven concurrent companies respectively, as compared to the same analyses performed on the studied product Victoria Sausage. (Unit 1). In parallel, the sales level for the Victoria Sausage was monitored, relating the internal figures to the national market and the impact of the measures adopted for permanent improvement of this product's quality and image in its performances was analyzed.

## **HYGIENIC QUALITY OF RAW COW MILK FROM TRANSILVANIAN FARMS WITH TIE STALL HOUSING**

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The aim of this study was to assess the quality of raw cow milk based on the total bacterial count (TBC), in farms with tie-stall housing from Transylvania. The collection and analysis of the 408 milk samples from 17 farms (24 samples/farm) was made between September 2009 and August 2010. The total bacterial counts varied greatly in the milk from the investigated farms, the mean values ranging from 182 to  $304,583 \times 10^3$  CFU/ml. Significant differences were demonstrated among the majority of the farms (Dunn's Multiple Comparisons Test,  $p < 0,05$ ). The mean values of TBC were significantly higher in summer than in winter ( $p < 0,05$ ). In 29,4% of the studied farms the raw milk's bacterial counts exceeded the limits admitted by European standards. The obtained results indicate high microbial contamination of the raw milk in the majority of the investigated farms caused by neglecting the hygienic requirements.

## **ASSESSMENT OF DAIRY COW LOCOMOTION IN FARMS FROM BRASOV COUNTY**

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This study aimed at assessing the locomotion of dairy cattle in farms from Brasov county, in order to identify the animals with locomotion problems. We evaluated 372 cows in five farms with tie stalls. The locomotion scoring was made using the system developed by Sprecher *et al.* Finally we calculated the percentage of the cows with normal locomotion (locomotion score LS = 1) and of those with different degrees of lameness (LS = 2, LS = 3, LS = 4, LS = 5) per farm and per total number of assessed cows. In the investigated farms the percentage of cows with score one (normal) varied between 21,87% and 40,47%. Score two (mildly lame) was found between 43% and 62,5% of the cows, score three (moderately lame) between 7,14% and 22%, score four (lame) between 2% and 4% and score five (severely lame) between 0% and 3,12%. Within the assessed 372 cows 118 (31,72%) cows had normal gait (LS = 1), 176 (47,31%) were mildly lame (LS = 2), 63 (16,93%) were moderately lame (LS = 3), 9 (2,42%) were lame (LS = 4) and 6 were (1,61%) severely lame (LS = 5). In the investigated farms the prevalence of lameness was as follows: 18,75% in farm A, 16% in farm B, 11,4% in farm C, 15,62% in farm D and 23,5% in farm E. The mean prevalence of lameness was 20,97%. The obtained results showed that more than half of the assessed cows presented locomotion problems, the severity of lameness degree varying among the investigated farms.

## **CONSEQUENCES OF SIX MONTHS POTASSIUM DICHROMATE INTAKE ON SERIC TESTOSTERONE AND LH LEVEL IN MALE RATS**

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The aim of the study was the evaluation of potassium dichromate impact on biochemical biomarkers for testicular function (testosterone and LH level) in male rats after six months intake. The study was carried out on 28 white Wistar male rats equally divided in three experimental and one control group. Experimental group were exposed via drinking water as followed: E<sub>1</sub>: 25 ppm Cr VI (LOAEL); E<sub>2</sub>: 50 ppm Cr VI; E<sub>3</sub>: 75 ppm Cr VI. The experiment was performed in compliance with the national law and international regulations: 143/400/2002; 471/2002; 205/2004; 206/2004; 9/2008; 86/609/CEE.



The study pointed out: significant decrease of seric testosterone level comparative to control group ( $E_1/C$ : -51.93%;  $E_2/C$ : -70.02%;  $E_3/C$ : -85.17%) and in inverse, significant correlation to exposure level ( $E_2/E_1$ : -37.65%;  $E_3/E_2$ : -50.50%;  $E_3/E_1$ : -69.13%); significant increase of seric LH level comparative to control group ( $E_1/C$ : +21.6%;  $E_2/C$ : +39.6%;  $E_3/C$ : +49.2%) and in direct, significant correlation to exposure level ( $E_2/E_1$ : +14.8%;  $E_3/E_2$ : +6.87%;  $E_3/E_1$ : +22.69%).

In experimental groups testosterone levels were under physiological limits ( $E_1/Ph$ : -35.2%;  $E_2/Ph$ : -59.6%;  $E_3/Ph$ : -80.0%), and LH levels were over physiological limits ( $C/Ph$ : +900%;  $E_1/Ph$ : +1116%;  $E_2/Ph$ : +1296%;  $E_3/Ph$ : +1392%).

## **THE INTAKE OF FOOD ADDITIVES IN ROMANIA-2009**

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Food additives are substances added intentionally in foodstuff for technological purpose. The use of food additives in Romania is ruled by specific normative. In the frame of the national activity of monitoring additives, the local public health authorities started, from 2009, the evaluation of the intake of additives. The results showed that the additives with the highest intakes are citric acid, glutamate, phosphates and cyclamate. The main food products contributing to this intake are meat products and soft drinks.

## **SALT IN ROMANIAN FOOD PRODUCTS (2007-2009)**

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Sodium chloride, cooking salt, represents a compound used by man since ever. But in the contemporary world salt is overconsumed, thus becoming a health hazard. Reducing salt intake is the corner key in the management of hypertension. The

monitoring of salt content in Romanian products between 2007-2009 showed that some percents of every analyzed food category has an excessive quantity. In order to follow the World Health Organisation target, to lower the salt intake under 5g/day it is mandatory a joint effort between technologists, food producers and public health authorities.

## **THE PARACLINICAL CONTROL OF THE RUMINANT ANIMALS FROM THE LOWER LEFT SIDE THE OLT RIVER AREA IN TELEORMAN DISTRICT**

**FLOREA V. NICULAE**

F.M.V. Bucharest

All the environmental elements were examined – the soil , water , plants and the foddors composition , too .

In addition we did the laboratory investigation regarding the incidence of the catching affections , parasitic ones and thase with nonspecific aetiology .

Here are the comparative results we gat – tables 1 – 2 .

Year	T.B.C.	L.E.B.	Bruce-loza	Para-tuberc.	Fasci-oloza
2000	0 - 0	23 - 26	0 - 0	0 - 0	210
2001	0 - 0	14 - 14	0 - 0	0 - 0	210
2002	0 - 0	36 - 56	0 - 0	0 - 0	210
2003	0 - 0	30 - 43	0 - 0	0 - 0	210
2004	14 - 0	4 - 38	0 - 0	0 - 0	210
2005	0 - 0	29 - 147	0 - 0	0 - 0	210
2006	6 - 0	6 - 23	0 - 0	0 - 0	210
2007	18 - 22	0 - 0	0 - 0	0 - 0	210
2008	0 - 0	0 - 0	0 - 0	0 - 0	70
2009	0 - 0	0 - 0	0 - 0	0 - 0	40
2010	0 - 0	0 - 0	0 - 0	0 - 0	35

Year	Bruce-loza	Orhi-epid.	Fasci-oloza
2000	0 - 0	0 - 0	210 - 0
2001	0 - 0	0 - 0	210 - 0
2002	0 - 0	0 - 0	210 - 0
2003	0 - 0	0 - 0	210 - 0
2004	0 - 0	0 - 0	210 - 0
2005	0 - 0	0 - 0	210 - 0
2006	0 - 0	0 - 0	210 - 0
2007	0 - 0	0 - 0	210 - 0
2008	0 - 0	0 - 0	110 - 0
2009	0 - 0	0 - 0	70 - 0
2010	0 - 0	0 - 0	100 - 0

The anamnesis , the clinical test , the tuberculation test , the sanitary – veterinary examination , the corroborated bacterioscopic , histopatological , and serological tests give a certain diagnosis ( eg. T.B.C. ) and one may take the suitable and correct sanitary – veterinary measures of prevention , control and eradication of the catching deasease .

## **DIURNAL EVOLUTION OF CELLULAR FACTORS OF NATURAL RESISTANCE OF THE ORGANISM IN DAIRY COWS**

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The role of an organism's natural resistance has already been filogenetically and ontogenetically demonstrated. The research was conducted on 15 dairy cows, aged 2,8-10 years, in stages 1-8 of lactation and in the first month after artificial insemination, raised in nonprofessional exploitations. Using the present methodology (modern microscopic and electronic apparatus) we determined the total number of leukocytes and the type of leukocytic cells, as well as the type of lymphocytes according to their dimensions and intracytoplasmatic granulations on a 24 hours time interval, determinations being done at 6<sup>00</sup>, 12<sup>00</sup>, 18<sup>00</sup>, and 24<sup>00</sup>. The results showed significant increase ( $p \leq 0,001$ ) of the leukocytes at 12<sup>00</sup> and distinctively significant ( $p \leq 0,01$ ) at 18<sup>00</sup> of the lymphocytes; distinctively significant increase ( $p \leq 0,01$ ) of the neutrophils at 12<sup>00</sup>; eosinophiles and basophiles recorded distinct increase ( $p \leq 0,01$ ) respectively significant increase ( $p \leq 0,05$ ) at 18<sup>00</sup>, while monocytes recorded an insignificant variation, the highest values being recorded at 18<sup>00</sup> and 24<sup>00</sup>. Middle sized lymphocytes had the highest value, followed by small and large lymphocytes. Lymphocytes lacking blue intracytoplasmatic granulations were more frequent (3,10 %) compared to those presenting these granulations (1,56%).

## **CLINICAL CORRELATIONS BETWEEN THE VAGINAL SMEAR, ULTRASONOGRAPHY AND RAPID DETERMINATION OF PLASMA PROGESTERONE IN BITCH**

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This study wants to show the importance of a complex diagnostic procedure that uses not only the clinical exam but also other means of investigation, which bounded together lead to a more pertinent and more accurate diagnosis.

The rapid semi quantitative assay of serum progesterone concentration completes the information given by the vaginal cytology and the ultrasound exam in a wide variety of clinical situations.

Approximating the perfect moment for mating or inseminating.

Close surveillance of the fertility treatments.

Prevention of abortion caused by luteal insufficiency.

Knowing the progesterone level, the parturition moment can be more precisely determined in corroboration with the clinical context and ultrasonography.

## **PREVALENCE OF *GIARDIA* SPP. INFECTION, ASSOCIATED OR NONASSOCIATED WITH *CRYPTOSPORIDIUM* SPP. AND OTHER PARASITES IN DOGS IN TIMIȘ COUNTY**

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This study was conducted to determine the prevalence of the *Giardia* spp. infection, in dogs from Timiș County and to analyze the potential risk factors that support this infection (gender, age). The examination of the samples was accomplished using flotation method (Willis), direct examination using Lugol solution and by *Cryptosporidium* and *Giardia* Rapid Test (Vegal Farmaceutica, Spain). Parasitic fauna of dogs from Timiș County was represented by *Giardia* spp., (48%) *Cryptosporidium* spp. (6 %), *Isospora* spp. (11%), *Toxocara* spp. (29%), *Ancylostoma* spp. (14%) and *Trichocephalus* spp. (9%). Age up to six months is an important risk factor. The breed and gender did not represent any considerable risk factors.

## **USING THE DOPPLER TECHNIQUE TO EMPHASIZE THE EMERGENCE AND DEVELOPEMENT STAGES OF VASCULARIZATION IN THE BONE CALLUS DURING FRACTURE HEALING IN DOGS AND CATS**

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The purpose of this study is to highlight the fitness and usefulness of normal echography technique (B-mode) and Doppler's, in terms of their use for determining and monitoring the dynamics of bone healing, as a result of osteosynthesis at dogs and cats. The neovascularization of bone callus can be visualized using Doppler echography, and we can establish four periods during the fracture healing, when the Dopplers signals are present until these are nule.

# **COMPARATIVE STUDY OF SOME PHYSIOLOGICAL PARAMETERS IN ISOFLURAN ANAESTHESIA VS. BUTORPHANOL-LIDOCAINE-KETAMINE ANAESTHESIA (BLK)**

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The aim of the study was to establish the influence of anesthesia's type over some physiological parameters that can be measured during surgery (heart rate, temperature, arterial blood pressure). The dogs were premedicated with medetomidine 10µg/kg intramuscularly or with midazolam 0,2 mg/kg intramuscularly. Propofol 6mg/kg IV was administered for induction of isoflurane anesthesia. After the endotracheal intubation, the maintenance was achieved with isoflurane 2-3%. In the case of butorphanol-lidocaine-ketamine (BLK) anesthesia, the solution was administered iv in a constant rate infusion starting 15 minutes after the administration of medetomidine or midazolam until the end of the surgery.

## **OBSERVATIONS REGARDING ODONTOGENESIS IN RAT**

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Maxilla together with nasal cavities had been harvested from immature Wistar rats having the following ages: 14, 21, 28, 35 and 45 days. From subject that had about 45 days were harvested samples from mandible where milk teeth erupted already. Harvested samples were immersed in Stieve mixture and decalcified using 10% trichlor acetic acid solution. Following sample adjusting, the pieces having about 4 mm thickness were embedded in paraffin. Serial sections of 6 µm thickness had been made and stained by modified Goldner tricrom-Masson method.

In all studied rats, dental buds in advanced stage of development were obvious. There were small differences during teeth development in examined subjects. The peculiarity was that dental buds position was inverted comparing with eruption position, in both right and left sides of all examined cases. The same disposition had it dental buds from mandible where milk teeth erupted already. To reach in normal position, the teeth should suffer ample 180° twirl movement to complete eruption from jaw alveoli.

# **ALTERATIONS IN THE ANTIOXIDANT DEFENCE SYSTEM IN THE LIVER AND WHITE MUSCLE OF CARASSIUS AURATUS GIBELO EXPOSED TO SILICON QUANTUM DOTS**

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Nowadays, nanotechnology is one of the most promising technologies, especially in biology and medicine. One type of nanomaterial is represented by quantum dots – fluorescent nanoparticles with one dimension lower than 100nm. Silicon quantum dots are less toxic compared to those containing heavy metals. However, *in vitro*, silica nanoparticles can induce adverse effects such oxidative stress and cells damages. The aim of this study was to examine modifications induced in the hepatic and muscular antioxidant systems of *Carassius auratus gibelio* intraperitoneally injected with 10 mg silica quantum dots suspension /kg body weight after 24, 72 and 168 hours.

Thirty fishes weighing between 104-153 g were divided in two lots: 1) injected with silica quantum dots suspension (experimental); 2) injected with physiologic salt (control). After treatment, they were sacrificed, the livers and white muscles were removed and the antioxidant enzymes activities were evaluated. Superoxide dismutase (SOD) activity had a similar profile in both tissues. The highest increase in SOD activity (192% in the liver and 161% in white muscles) was recorded after 72 hours compared to control. After 168 hours, SOD activity remained higher having similar values with those recorded after 72 hours. Catalase (CAT) activity had a different pattern in the hepatic tissue versus white muscles. CAT activity in the liver increased while the one in the white muscle decreased in a time-dependent manner. Glutathione peroxidase (GPx) activity was modulated differently in the investigated tissues, with an obvious time dependent increase in white muscle, reaching a maximum activity of 231% after seven days of treatment and surprisingly a decreased activity in the liver with 20% at the same interval. Both glutathione S-transferase (GST) and glutathione reductase (GR) activities decreased in the analyzed tissues. Our results suggest that the injection of silica quantum dots induced cellular damage by impairing the antioxidant defense system.

## **COMPARATIVE STUDY OF THE PELVIC LIMB SKELETON IN THE CAT (*FELIS CATUS*) AND IN THE TIGER (*PANTHERA TIGRIS*)**

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Our studies have aimed to make a comparative description of the pelvic limb skeleton in the domestic cat (*Felis catus*) and in the tiger (*Panthera tigris*). The biologic material consisted of 2 tiger cadavers provided by the Turda Zoo, Cluj County, and osseous pieces from 6 cat bodies. The osseous pieces were processed in the Comparative Anatomy Laboratory of the Faculty of Veterinary Medicine Cluj-Napoca. After comparing the pelvic limb skeletons of these two species, we have concluded that the differences between the two are mainly found in the pelvic zonoskeleton and zeugopodium regions, and to a lesser extent in the stylopodium and the autopodium region (the latter referring mostly to the metatarsal bones). These differences are correlated with the body mass, the muscle mass and the living style of the cat compared to those of the tiger.

## **BIOECONOMIC AND ECOECONOMIC BIO-BASED IN THE PROGRESS OF VETERINARY MEDICINE REGARDING REPRODUCTIVE BIOTECHNOLOGY FOR SUSTAINABLE DEVELOPMENT OF MANKIND IN THE TWENTY-FIRST CENTURY**

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This report describes the impact of biotechnology on the progress of veterinary reproduction, in Global Bio-economic system, and some aspects of innovation activity and its effects ecoeconomic for sustainable development. Biotechnology of reproduction is the main factor for increasing competitiveness in biotech innovation and engineering. The most important aspect of biotechnology is used to provide market-results-profits products to users. Biotechnology of reproduction (AI and ET) may have a positive effect on the national bioeconomic aspects (selection and improvement of productive and reproductive characters), in order to ensure animal productions, independence, safety and food security.

## **CONTRIBUTIONS TO PERIOCEUTIC THERAPY OF PERIODONTAL DISEASE IN DOGS**

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In this study we tried to provide an alternative perioceutic treatment with long term efficacy for the periodontal disease in dogs. The association of human use products Perioflush and ChloSite with veterinary use products Stomorgyl and Germostop bucal is a viable protocol for the treatment of periodontal disease in dog. Perioceutic treatment with chlorhexidine base gel assures a fast healing of periodontal pocket and creates the assumption of a long term healing.

## **EMPHASIZE THE LEVEL OF CONTAMINATION AND MICROBIAL BIOFILM ON INERT SURFACES FROM MEAT AND MILK PROCESSING PLANT**

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S.C. Smithfield Prod. S.R.L.

The aim of this study was to emphasize the level of contamination and presence of microbial biofilms on various surfaces in food processing plants. The research was conducted in three processing units: a milk processing unit (LP), a processing unit of pork (PC 1), a unit of slaughter-processing of pork (PC 2). Assess the level of contamination, of inert surfaces with different degrees of finish, was done by direct counting plate and evidence the presence of microbial biofilm, by confocal microscopy, after collection of samples by scraping and staining with acridine orange, was made. Microbial biofilm was detected in five areas of the milk processing unit (60% of the total area examined) and two areas of meat processing unit PC 1. The slaughter-processing unit (PC 2) reveals the presence of microbial biofilm on nine areas (52.2%) of all areas examined. Areas on which the presence of microbial biofilms was identify were areas with different levels of roughness: low-grade stainless steel finishes and corrosion zones, high-porosity plastic, rubber and epoxy resin floor rough.



## **MICROBIAL BIOFILM EMPHASIZE ON CARCASSES SURFACE**

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Purpose of this study was to determine the level of contamination and emphasize, by fluorescence microscopy, the presence of microbial biofilm on the surface of bovine, pigs and poultry carcasses. The research was conducted in a meat processing plant and a retail unit. To assess the level of contamination of carcasses the NTGMA, number of Enterobacteriaceae and the number of bacteria of the genus *Pseudomonas* were determined. The presence of microbial biofilm after sampling by scraping and staining by confocal microscopy was made. To determine the level of ATP on the surface of the meat two instruments Hy-Lite 2 and PD Lumitester 10N were used. Microbial biofilm was emphasis on the surface of cattle carcasses (42% of samples) and pork carcasses (29.4% of samples). The overall level of contamination in areas where it emphasized the presence of microbial biofilms, has fluctuated on average from  $10^2$ - $10^4$  cfu/cm<sup>2</sup>.

## **IMAGE DIAGNOSTIC IN CARNIVORE'S REPRODUCTION**

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Considering the growing importance of carnivores in human society, development and continuous selection process, modern and complex breeding techniques are used. Reproduction process offers the benefit of selecting particular genetic traits in order to enhance specific lines, so gathering as many as possible information's about breeding process is a necessary quest. Ultrasonography represents a highly specific diagnostic tool providing information's regarding genitals status, ovarian activity and uterine evolution in a precise and cheap manner. In the present paper we intended to provide some of the information's harvested regarding ovarian and uterine cycle, gestation and uterine cystic pathology in queen. All data is recorded using an AlokaProsound 2 ultrasound machine with a 6-13 MHz probe.

## **CONTRIBUTIONS TO PERIOCEUTIC THERAPY OF PERIODONTAL DISEASE IN DOGS**

**M. SABĂU, C. IGNA, ROXANA DASCĂLU, LARISA SCHUSZLER, A. SALA, C. LUCA, A.G. DRAȘOVEAN**

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In this study we tried to provide an alternative perioceutic treatment with long term efficacy for the periodontal disease in dogs. The association of human use products Perioflush and ChloSite with veterinary use products Stomorgyl and Germostop bucal is a viable protocol for the treatment of periodontal disease in dog. Perioceutic treatment with chlorhexidine base gel assures a fast healing of periodontal pocket and creates the assumption of a long term healing.

## **STUDY CONCERNING QUALITY CHARACTERISTICS OF TABLE EGGS FROM DIFFERENT HOUSING SYSTEMS**

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In order to study the differences among commercial eggs from four housing systems i.e. cage, barn, free range and organic, a series of physical and parameters were evaluated on 40 fresh egg samples from the market. In the first series of analysis parameters, the highest air cell height and percentage of blood spots was measured for type 3 eggs (cage). Type 2 presented the highest percentage of meat spots, while type 0 had the highest values for albumen height, Haugh Unit and the highest value for yolk color. The pH of the samples was within ranges. In the second series of analysis parameters, the highest value of the egg weight was registered by type 1, comprising free-range eggs, while the lowest value was observed in type 0. The highest value for egg diameter and egg height were as it follows: type 2 with the largest egg diameter, and type 1 with the highest value for egg height. The percentage of cracked egg was highest in type 0. Egg shape index presented the highest value in type 2 eggs and the same type eggs had the highest percentage of albumen and yolk, while type 3 the highest percentage for shell. The thickest shell was observed in type 2 eggs (barn eggs), and the shell index value characterized organic eggs (type 0).

## **THE IMPROVEMENT OF THE SANITARY-VETERINARY CONDITION FOR THE PREVENTION AND THE THERAPEUTICS OF THE DISEASES AT THE RUMINANT ANIMALS IN THE LOWER PART OF THE OLT LEFT RIVER**

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The veterinary watches the anamnesis through physical examination in order to see the general health state of the animal searching carefully the suggested disease symptoms . That's why the anamnesis and the physical examination must be taken as a „whole unity “ which gives all the necessary information for the next diagnosis .

The blood drawing is made by vessel puncture after a previous preparation of the place.

In order to make all the hematological tests very well the blood samples must be taken correctly – undervacuum – softly stirred to homogenize and sealed up at +4°C and sent in the right time . This is a very easy method in a closed system which helps the blood not to change itself until it is tested .

The laboratory temperature should be for about +20°C , all the tests must be done correctly for each suspicious disease , with no errors , with a certain diagnosis and measures to prevent control and eradicate anything .

All these contribute to an ideal health condition .

## **INTRATUMORAL ADMINISTRATION OF GROSS FUNGI EXTRACT OF T3-2 STRAINS OF CLAVICEPS PURPUREA FOR ANTINEOPLASTIC EFFECT - CASE STUDY**

**HRIȚCU LUMINIȚA DIANA**  
**FMV Iași**

*Claviceps purpurea* is a fitoparazite fungus from Clavicipitaceae family, genus *Claviceps*, whose parasitize different grains, especially rye, hence was called "ergot." In general ergots containing alkaloids. Some alkaloids are partial agonists, while others are antagonists, affecting both serotonin and catecholamines. Representatives are clavines alkaloids: agroclavie, festuclavie, elimoclavine. Ergot alkaloids *and their derivatives* have either agonist or antagonist activity at different receptors: adrenergic, serotonin and dopamine. Ergot alkaloids and their derivatives have the ability to inhibit the growth of certain hormone-dependent tumors by inhibiting the secretion of prolactin from the anterior pituitary gland.

## **ANAESTHETIC PROTOCOL FOR CLOSED REDUCTION OF HIP DISLOCATION IN THE DOG**

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Fifteen dogs were anesthetized with ketofol prepared as a 1:1 mixture of ketamine 10 mg/mL and propofol 10 mg/mL mixed in same syringe, for fluoroscopic diagnostic and for closed reduction of hip dislocation. Median ketofol dose was 2.5 mg/kg of each agent. Twelve dogs tolerated the procedure well; the quality of analgesia was satisfactory in almost every case. Thirteen dogs recovered from anesthesia without complications. Dogs were able to walk unassisted in 18 minutes after last ketofol administration (range 15 to 37 minutes). Ketofol is effective for painful diagnostic examination and therapeutic orthopedic procedure.

## **COMPARATIVE EVALUATION THROUGH BIOFEEDBACK INVESTIGATION REGARDING RISK FACTORS IN PROSTATE DISEASE FOR HUMAN AN CANINE PATIENTS**

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The present work has followed the identification and corroboration of data, coming from patients with prostate disease, between well established clinical investigation (physical examination, ultrasound) and biofeedback evaluation.

The data obtained using the electrophysiological biofeedback investigation has been compared both in human patients and patients from the canine species which had been previously diagnosed with inflammatory and degenerative disease of the prostate tissue.

Risk factors have been obtained and shown in graphics, and are similar for the two species in regards to: environmental influence, food intake, water pH, radiation exposure, a number of pathogen agents, previous traumas, low immunity level, inflammation sensitivity and incomplete oxidation.

The investigations that have been made are pursuing the corroboration of data pertaining to risk factors for the purpose of the prophylaxis of these conditions on both canine and human and could eventually represent the basis of pilot studies done on canines for the purpose of perfecting treatment and diagnose in human medicine.

## **MOLECULAR CHARACTERIZATION OF HUMAN *CRYPTOSPORIDIUM* ISOLATES IN BANAT REGION, ROMANIA**

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The aim of the present study was the genetic characterization of *Cryptosporidium* isolates, from humans with diarrhea attending to different hospitals located in Banat region. A total of 78 fecal samples were examined by modified Ziehl-Neelsen staining method. Five microscopically positive samples were investigated by PCR-RFLP of the SSU rRNA gene. The species and/or genotypes were determined using restriction endonuclease enzyme digestion with *SspI* and *VspI*. The results indicated the presence of *Cryptosporidium parvum* in three samples and *Cryptosporidium cervine* genotype in another two samples. These data suggest the animal origin of this zoonotic species and genotype.

This is the first study of molecular epidemiology in human cryptosporidiosis that has been made in Romania.

## **PRELIMINARY DATA REGARDING ANTIBODIES AGAINST ENZOOTIC BOVINE LEUCOSIS ON MILK AND SERA SAMPLES**

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In Romania, Enzootic bovine leucosis (EBL) it is a disease in interest, notifiable, included into the annually surveillance program of animals diseases.

Bovines serological surveillance is accomplished through enzyme - linked immunosorbent assay (ELISA) and by agar gel immunodiffusion test (AGID) on sera samples.

The aim of this study is to evaluate the detection of antibodies against EBL from milk and serum samples harvested from the same animals, in order to establish a new testing methodology for surveillance on milk samples.

The study has been performed on milk and sera samples, harvested from 17 lactating cows. The evaluation of presence of the BLV antibodies could be done based on preliminary comparative results obtained due bytesting of milk and sera samples with serological methods (ELISA, AGID)

In order to assess the sensibility of ELISA and AGID, has been used the positive OIE reference standard serum, E 05.

The preliminary results obtained by testing milk and sera samples have been analysed comparatively. For this purpose, have been done statistical analysis of the performance parameters: sensibility (Se), specificity (Sp), repeatability (r), intralaboratory reproducibility (R), coefficient of variation (CV%).

## **DIROFILARIA REPENS INFECTION IN A DOG: A CASE REPORT**

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This report concerns a case study of infection with *Dirofilaria repens* in a commune dog in Timis County. At the examination of this dog, a moist dermatitis was observed in the lumbar region, and also was noticed the presence of numerous papules, erythema and increased skin itching. The diagnosis of parasitism with the species *Dirofilaria repens* in blood, was achieved through several methods: the examination of the drop of fresh blood, Knott's modified method, diro-test Speed® Diro/Heartworm (Bio Veto Test, France), ELISA technique (*D. immitis*) and molecular technique (PCR). Additionally, from the blood, a leukocytes formula and a biochemical examination were performed. After identifying the species of *Dirofilaria*, a treatment was attempted using a microfilaricid method used in *Dirofilaria immitis* infection. The Selamectin product (Stronghold® Pfizer), spot-on was given to the dog for 6 months and the number of microfilariae was determined monthly. 90 days after the microfilaricid treatment the dog was tested for microfilariae, and the result was negative. After one year the dog was diagnosed with an irreversible medullary compression syndrome and, with the owner consent, euthanasia was proposed. At the morphopathological examination several nodular formations of about 1 cm were identified in the subcutaneous tissue of the abdominal region, and no evidence of adult *D. repens*.

## **MORFOPATOLOGICAL DIAGNOSIS IN DOG WITH *DIROFILARIA* (SYN. *NOCHTIELLA*) *REPENS* INFECTION: A CASE REPORT**

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In this paper we present a case of natural infection with *Dirofilaria repens* in a dog from Topolovatu Mare locality, in Timis County. The dog was clinically investigated at the Pathology Medical Department from the Faculty of Veterinary Medicine of Timisoara. The clinical diagnosis revealed pleurisy. After one week of treatment, the clinical symptoms got worse and it was decided to euthanize the dog, having the owner's consent. The results of the necropsy examination were a diagnosis of lung neoplasm, but also a parasitism with a *Dirofilaria repens* species nematode.

## **CURRENT STATUS OF FOOD-BORNE PARASITIC ZOOSES IN THE WORLD AND ROMANIA**

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The current status of the main food-borne parasites, with registered prevalence of infection in different countries and areas of the world, and the situation of some zoonotic diseases registered in Romania, are discussed.

Zoonotic parasites which might be found in food include a wide variety of protozoa, trematodes, cestodes, and nematodes. These foodborne parasites reach the human beings through the **consumption of raw infected food** such as muscle tissues of different animal species, or **vegetables**, and **contaminated food and water resources**. **Meat of fish, reptiles and amphibians** can be infected with a variety of parasites, including trematodes, cestodes, nematodes, and pentastomids that can cause zoonotic infections in humans when consumed raw or not properly cooked.

Widespread of food-borne parasitic zoonoses in the context of actual changes of the complex socio-economic and socio-cultural factors is registered, and their major impact on the health and economy should not be neglected. In this context, the complex of effective measures for monitoring and control of food-borne parasites, including education of farmers, shepherds and consumers, improving of farming conditions, a control of sewage sludge on pastures and of drinking water resources, improved transportation and distribution systems of food, accompanied by a new technology in food processing, specialized inspection associated with a supplementary standardized surveillance, is needed to further reduce the incidence of these diseases. The improving of diagnostic tools and communication are also some factors which increase diagnosis of food-borne parasitic diseases worldwide and immediately application of the control measures.

## **EFFECT OF REPRODUCTIVE RHYTHM ON HORMONES, METABOLITES AND PRODUCTIVE PERFORMANCE IN RABBIT DOES**

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The aim of this study was to compare the productive performance with hormones and metabolites serum levels of: primiparous pregnant does (n=30) submitted to artificial insemination (AI) at 2, 11 and 26 days post-partum (groups R2, R11 and R26, respectively). On the day of AI all the does were weighed and the sexual receptivity was evaluated. The kits were weaned at 26 day. Blood samples were collected by puncture of the marginal ear vein from one day before AI until few days before the kindling for hormones and metabolites assay. The sexual receptivity and fertility were lower in R11 (46.6 and 46.4%, respectively) than in the others two groups (80.6 and 74.1% in R2; 75.5 and 66.7% in R26;  $P \leq 0.01$ ). Live born ( $P \leq 0.01$ ), litter size at weaning ( $P \leq 0.01$ ) and litter weight at weaning ( $P \leq 0.001$ ) were higher in R26 (10.8; 8.9; 6123.7, respectively) than R2 (6.7; 7.1; 4725.7) and R11 (8.2; 6.1; 3567.1). Leptin, NEFA, and insulin concentrations showed great modifications during pregnancy in all the groups ( $P \leq 0.001$ ): leptin and NEFA levels decreased while insulin increased with a peak on day 21 of pregnancy. Leptin levels also were influenced by rhythm ( $P \leq 0.05$ ) and physiological status ( $P \leq 0.001$ ). The serum concentrations of T3, cortisol and glucose did not show any significant difference. In primiparous does the reproductive rhythm influences the productive performance but has only a little effect on hormones and metabolites levels during pregnancy.



## **MONITORING OF EMBRYO AND FETAL GROWTH BY ULTRASOUND EVALUATION IN THE RABBIT**

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The rabbit is an ideal animal model for the study of congenital malformations and fetal programming in the postnatal development of metabolic syndromes, including cardiovascular diseases, hypertension, and diabetes in adult humans. Ultrasonography is a valuable and non invasive method for early pregnancy diagnosis and monitoring of development and foetal viability in many domestic animals. The aims of this study was to give more information about the use of ultrasonography for early pregnancy diagnosis in the female rabbit and to monitoring the embryo and the foetal growth. Eight New Zealand White rabbits were scanned twice a week starting at day 4 after mating until the end of gestation. The embryo-foetal structures considerate were: embryonic vesicle, placenta, embryo, mechanical cardiac activity, stomach, bladder, fetal movement, cardiac chambers, ossification of the limbs and ribs, biparietal diameter, kidneys. For each parameter, during the echographic examinations, were taking into account the fist time of their visualization and their changing during gestation. The data obtained showing how ultrasonography is an accurate, early, rapid and non invasive method for the pregnancy diagnosis and a gold standard tools for monitoring the development of different embryo's structures. Based on our results, should be also auspicable to considered the possible application of ultrasonography for the detection of pathologic conditions involving alteration of the parameters considered.

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