

**MORPHOSTRUCTURAL REFLECTIONS OF THE GIANT
MULTINUCLEATED MELANOMA CELLS IN CANINES**

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Summary

The authors present morphostructural aspects of the melanoma giant multinucleated cells in canines. The investigations were limited strictly to the characterization of these cells following the aspects obtained after the classic panoptic coloration.

These cases were found following fine needle aspirations of several tumor formations in the oral area of canines.

Key words: malignant melanoma, malignant, giant cells, canines.

CONTROL OF BODY SCORE CONDITION OF SOWS ON COMMERCIAL FARMS

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Summary

In modern pig farming more and more attention is paid to body condition score. On most commercial farms feeding of gilts and sows is based on body condition. The goal is that sow does not gain or lose too much of a body weight between farrowing and insemination. Maintenance of body weight (condition) of sows within the optimum value (3 in the time of farrowing and 2,5 during matting) over their lifetime can result in optimal reproductive results. In contrast, inadequate control of condition of the sow may lead to difficulty in farrowing and occurrence of health problems. The aim of our study was to estimate body condition at 90th day of gestation on a farm of commercial type.

Key words: sow, body score condition

**SEROPREVALENCE OF SOME IMMUNOSUPPRESSIVE AGENTS
(PRRSV, *M. HYOPNEUMONIAE* AND PCV2) IN WILD BOARS
(*SUS SCROFA*) IN ROMANIA (2013)**

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Summary

Porcine reproductive and respiratory syndrome virus (PRRS), *Mycoplasma hyopneumoniae* (*M. hyo*) and porcine circovirus 2 (PCV2) are infective agents with a high incidence on domestic swine population. The seropositivity presence in pigs may give clues on the transfer phenomenon between wild boar and domestic swine populations.

Materials and methods. PRRS surveillance, *M. hyo* and PCV2 in boar herds were performed by ELISA immunoassay tests for the detection of IgG antibodies. 66 samples of serum taken hunting seasons in four counties from Romania respectively: Bacău (n = 4), Vâlcea (n = 47), Giurgiu (n = 4) and Gorj (n = 11) were analyzed.

Results and Discussion. *M. hyo* positive titers were detected at 13/66 (19.7%) from samples analyzed. Were found also significant seroprevalence variations in *M. hyo* (positive titers) between districts as follows: 8/47 (17%) - Vâlcea, 2/11 (18.2%), Gorj county, at three quarters (75%) , in Bacău county and only suspect titers 4.3% (2/47), in Vâlcea County. All samples from Giurgiu were suspected for infection with PCV2 titers and the remaining samples were declared negative titers of anti-PRRS and PCV2.

Conclusions. The seroprevalence detected by ELISA IgG *M. hyopneumoniae* in wild boars varied significantly between Romanian counties. Infection was present in 3 of the 4 counties investigated. No infections were confirmed serologically PRRSV and PCV2.

Key words: wild pig, PRRS, PCV2, *M. hyopneumoniae*, ELISA.

DELCAMAG SUPPLEMENTATION OF FEED RATION IN CAUCASIAN SHEPHERD PUPPIES

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Summary

Due to the fact that dogs need a ratio supplement with mineral elements, a double source of Magnesium and Calcium has been tested- the DEL-CA-MAG product (calcium oxide- 32.02% and magnesium oxide- 20.27%). In this purpose, 5 Caucasian Shepherd puppies, coming from the same birth, were split into two identically fed lots. One of the lots received DEL-CA-MAG as a supplement. Successive weighs showed a 1.29% increase in the weight of the dogs belonging to the lot which received the supplement. Depending on the sex males were those who registered a growth of 3.95%. The general aspect also became better, the puppies presented a thicker and shinier coat, a "healthy animal" aspect and a better bone development.

Key words: Caucasian Shepherd, DEL-CA-MAG, supplementation.

THE RELATIONSHIP BETWEEN THE UNIFORMITY OF THE BATCHES OF PIGS AND THEIR BODY GROWTH RATE

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Summary

At the moment fattening pigs takes place in highly specialized farms. Pigs are brought from growing farms and are usually divided into groups randomly. The pigs are no longer found in the old plots and usually are not selected by weight. We tested if the initial group uniformity it influences that of the final. It has been found that despite significant weight differences at start these differences become insignificant for lots I, II (experimental groups) and for lot IV (one of the control group) except lot III.

Key words: fattening pigs, groups, uniformity

DYNAMICS OF WEIGHT, FAT THICKNESS AND RIB-EYE AFTER ONE MONTH OF SCI EXPERIMENT IN MINIPIGS

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Summary

The dynamics of weight, fat thickness and rib-eye diameter in P2 was measured during first month of spinal cord injuries (SCI) experiment carried on Gottingen minipigs. Restricted feeding was tested in accommodation period during November – February, each animal eat 380 – 460 grams feed (ash 7.38, protein 14.17, fat 1.31, moisture 10.86 and fiber 9.84) in according with its weight (22 to 37 kg). The weekly weight (W, p=), fat thickness (F) and rib-eye diameter (M) in P2 ranged in the same values as the initial ones (November 2013); there were emphasized positive correlations between W and F ($r=+0.893$) or M ($r=+0.536$) but the restricted feeding could not explain the weight weekly values differences ($F=0.299$ at $p=0.965$). In the first month of surgery interventions (SCI, laparoscopy for electrode implants or both) the animals lost in average 2.1 kg in weight, 0.76 mm in fat and 1.89 mm in muscle rib-eye diameter measured by ultrasonography in P2. The statistics between Control, SCI, SCI&LAP and LAP groups was carried on using *nonparametrical test* – the results for 15 animals suggest that the SCI and SCI-LAP are high associated with decreasing the weight ($p=0.014$), fat thickness ($p=0.050$) and rib-eye diameter ($p=0.035$). Shortening the time for surgery intervention and increasing feed amount to keep the body condition of experimental animals is needed.

Key words: SCI minipigs, weight, fat thickness, rib-eye diameter

COMPARATIVE ONCOLOGY – OPERATIONAL NICHE WITHIN MEDICAL SCIENCES

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Summary

The authors define two major subjects: first, comparative oncology, one of the basic aspects of general oncology, that connects the cancer disease in humans and animals and the environmental elements, defined as „**high risk carcinogenic factors**”.

The authors also explain the need to correlate the notions of **biodiversity, bio-economy** and **food safety**, both to the cancer disease in humans and animals, as well as to the polluted environment, that holds all of the **high risk carcinogenic factors**.

Virtually, this ample collocation, is the foremost eloquent expression of the truth of „global thinking” within the existential notions of **ecology, eco-pathology, bio-economy, biodiversity** and **medicine** – via **comparative oncology**.

The authors also present the notion of „**comparative oncology**” as an ingredient of the concept of „**comparative medicine**”, a notion that resides in the fundamental structure of medical sciences.

Romania was a pioneer in the historical moments of the defining and gradual evolution of this concept.

These moments have defined the whole concept of comparative medicine, evoked by Charles Darwin in his work „The Origin of Species” in 1859.

Key words: origin of species, comparative medicine, comparative oncology

DIAGNOSIS OF YEAST MASTITIS IN DAIRY COWS

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Summary

Yeasts are less common causes of bovine mastitis. Predisposing factors are internal damage of the milk alveoli and/or milk ducts and long-term use of antibiotics. Since identification of yeast species is not a part of routine veterinary practice in diagnostic laboratories, it remains unknown which yeast species play role in mastitis development in dairy cows in our epizootic jurisdiction (Southern Bačka municipality). Here we report the results on the use of commercially available *Integral System Yeast Plus* test in the identification of yeasts isolated from the milk samples of cows with clinical mastitis. In addition, the sensitivity to antifungal agents of these isolates was tested and is reported here. Obtained results reveal that in etiology of bovine mastitis crucial agents are "non-albicans" species of the genus *Candida*: *C. kefir*, *C. rugosa* and *C. krusei*. Two isolates of *C. kefir* showed resistance to nystatine which is the standard therapeutic agent in the treatment of mastitis caused by *Candida* spp. in dairy cows. Several isolates showed resistance to clotrimoxazole, econazole, fluconazole and flucytosine, commonly used in treatment of yeast infections in humans. *Integral System Yeast Plus* test is a easy to use test for the identification of yeast isolates and for determination of their susceptibility to anti-fungal drugs. This test is not designed for identification of achlorophyllous algae *Prototheca zopfii* which was isolated from 8 milk samples. *P. zopfii* has similar growth properties as *Candida* species and, based on the biochemical properties, was identified as *Candida krusei* by *Integral System Yeast Plus* test. Therefore as a part of differential diagnostic procedure, microscopic examination of isolates is required to confirm *P. zopfii* accurately.

Key words: yeast, bovine mastitis, *Integral System Yeast Plus* test

**MORPHOLOGICAL ASPECTS OF DIGESTIVE APPARATUS TO
FALCO CHERRUG (*BUTEO BUTEO*) AND DOVE (*COLUMBA
LIVIA*)**

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Summary

Birds consume more food in proportion to their size than most animal because of their high metabolic rates. As a group, bird of prey, falco cherrug consume just about any type of food what can imagine, including rodents, seeds, snails, grass, fruits, insects, larves. To meet their metabolic needs while remaining as light as possible and as efficient as possible, to be efficient flyes, the digestive system of birds has to be both as light as possible and as efficient as possible. The need to keep weight as low as possible also mean that, except perhaps prior to migration, there is a limit to the amount of a bird can store. Falco cherrug and dove differ in morphology of system digestive. Falco cherrug is bird of prey and hunts when light levels are low so if an attacking. Falco cherrug misses its prey, relocating it may be difficult.

Key words: dove, falco cherrug, morphological aspects of tube digestif

OBSERVATIONS CONCERNING THE VALUES OF BIOCHEMICAL PARAMETERS IN COWS DURING PUERPERIUM

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Summary

The gynecological survey was performed during January and March 2013, on a herd of ten cows, in a farm from North-Eastern Romania.

The determinations of the biochemical parameters were effected in the first 10-14 days after parturition.

The mineral substance Calcium (Ca) showed values between 8.37 mg/ml and 9.77 mg/dl, which are close to the lowest physiological value. The cause of that is the high implication of the cow in the process of lacto genesis.

The values of liver transaminase (ALT) were between physiological values, which indicate a normal liver activity. Only the first two cows presented high values of liver transaminase. In first one ALT showed a value of 70.7 mg/dl, this cow being suspected of liver insufficiency, cholestasis, liver steatosis, cirrhosis, fasciolosis, myopathies trauma or inflammatory processes. In the second one, ALT showed a value of 59.3 mg/dl, this cow being suspected of hepatic insufficiency, cholestasis, steatosis, cirrhosis, and fasciolosis. Glucose level was between the physiological limits, showing values between 53.1 mg/dl and 99.6 mg/dl. The same thing can be said about creatinine, with values between 0.69 mg/dl and 1.75 mg/dl.

The results of the present study show that the values of the main biochemical parameters, except liver enzymes are maintained in physiological limits during puerperium.

Key words: biochemical parameters, cow, puerperium

RESEARCH REGARDING SOME BLOOD PARAMETRES IN DAIRY COWS DURING PUERPERIUM

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Summary

The research has been done on 24 cows from Spotted and Black Romanian breed during the post-partum period. There were 2 batches made, each one consisting in 12 cows: the witness batch M1- clinically healthy cows and the E1 batch- cows presenting puerperium affections.

There have been harvested blood samples straight from the jugular vein into test tubes with EDTA and the following parameters have been determined: the number of red cells, the hematocrit, the hemoglobin, VEM, HEM, CHEM, the total number of white cells, lymphocytes and neurofiles.

The samples have been taken using the ABC-vet automatic Hematological Analyzer at the University of Veterinary Medicine in Iasi.

The results of the hematological tests made on cows that participated in the study, showed variations of the main parameters. The resulted values were compared with the ones in specialized literature such as: the red cells constants from the E1 batch had smaller values 5.75 ± 0.30 compared with the obtained values in the M1 batch 6.25 ± 0.75 , the value of hemoglobin in the E1 batch being of 8.15 ± 0.55 , while in the M1 batch, of 11.1 ± 0.25 . The hemoglobin value obtained in the E1 batch was of 8.15 ± 0.55 and in the M1 batch, of 11.10 ± 0.25 . The total number of white cells (thousands/cubic millimeter) has recorded values of 13.40 ± 2.20 in the E1 batch, where in the M1 batch the values were of 7.55 ± 1.10 .

Key words: cows, VEM, HEM, CHEM

**MORPHOPATHOLOGICAL ASPECTS OF THE SPLEEN IN
EXPERIMENTAL AVIAN INFECTIOUS BRONCHITIS IN CHICKEN**

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Summary

The splenic macroscopic and microscopic lesions in chicken in experimental avian infectious bronchitis with the AIB virus, strain M41 are frequently expressed in the first ten days p.i. through arterial and venous congestions in the conjunctive-vascular stroma. The microscopic modifications from day 10 p.i. until day 40 p.i. (the end of the experimental period) are dominated by dystrophic processes, necrosis and necrobiosis of the lymphocytes respectively lymphocyte migrations and/or lymphocytosis- morphological modifications which define spleen hypertrophy.

The lymphoid follicles, most frequently are of primary type (non-reactive), numerous and of small dimensions and the secondary ones (reactive) are found in small numbers.

The spleen, as a consequence of the accidental hypertrophy reduces in weight (R3) compared to the control lot by 63.07%.

Key words: spleen, morphopathological aspects, experimental infectious bronchitis, chickens.

MORPHOPATHOLOGICAL ASPECTS OF THE STRIATED MUSCLES IN CHICKEN IN AVIAN INFECTIOUS BRONCHITIS

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Summary

The morphological modifications identified in the striated muscles in chicken experimentally infected with the AIB (Avian Infectious Bronchitis) virus, strain M41 were expressed through interstitial circulatory modifications, through dystrophic processes, necrobiosis and necrosis of the muscle fibers and through exudative myopathy.

From day 3 and until day 10 p.i, active and passive congestions as well as interstitial edema have been noticed in the muscular parenchyma. From day 10 p.i. and until day 40 p.i. granular, hyaline and fibrinoid degenerations were noticed accompanied by focal necrosis and fibrosis. Lesions of degenerative myopathy were observed in eight cases. The average weight of the chicks belonging to the experimental (E) lot was 34.2% lower than the one of the chicks from the control (C) lot, this being the consequence of the dystrophic and necrotic modifications of the muscular fibers.

Key words: striated muscles, morphopathological aspects, infectious bronchitis, chicken

CASE REPORT: MULTIPLE INVESTIGATIONS ON A LARGE FEATHER CYST IN A CANARY (*SERINUS CANARIA*)

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Summary

Feather follicle cysts have been described primarily in pet birds such as canaries, parakeets and macaws, often arising from feather follicles damaged by accidental trauma, self-mutilation, an infectious process or correlated to hereditary conditions. The growing feather is not able to emerge from the occluded follicle and forms a cyst as the feather structure continues to develop.

This case report describes a single large feather cyst in a 8 month female canary (*Serinus canaria*) on the cutaneous region of the chest. The mass had a diameter of 40/25/30mm, firm consistency and a yellow-reddish colour. Radiologic examination confirmed a large multinodular cutaneous lesion, with increased radiodensity and intact pectoral muscle, bones and the organs from the coelomic cavity. Cytopathology was performed by fine-needle aspiration and the microscopic examination revealed large amounts of detritus and proteic, oxifil material, erythrocytes, keratinocytes and rare mononuclear inflammatory cells. The canary was further submitted to excisional surgery of the mass, but post operatory evolution was unfavorable leading to the bird's death. A necropsy was performed showing diffuse capillary haemorrhagy of the pectoral muscle, while the internal organs presented normal macroscopic aspects. The mass was sagittally sectioned and revealed a caseous mass, filled with destroyed feathers within a firm capsule. Histopathology was performed both on the mass and on the major internal organs. The mass proved to be a feather follicle cyst with peripheral capillary vascularisation and inflammatory response, showed by the presence of mononuclear cells and few multinucleated giant cells. Broken feathers and detritus were identified in the middle of the cyst. Histopathologic examination of the internal organs revealed multifocal inflammatory areas in the liver, with a cellular population represented by lymphocytes and multinucleated giant cells and mild mononuclear infiltration in the intestinal submucosal layer.

Key words: feather follicle cyst, *Serinus canaria*, canary, pathology.

TOPOGRAPHICAL ANATOMY OF GUINEA PIGS KIDNEYS

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Summary

The aim of this study was to describe topographical anatomy of guinea pigs kidney in order to be useful in diagnosis of renal disease in this specie.

Ten adult guinea pigs were used. Following gross dissection, the macroscopic anatomy, topography and connection structures were determined.

Both kidneys are retroperitoneal organs, situated on different length by the vertebral column, the left kidney being more distant from the vertebral column than the right kidney. The right kidney was situated of the margins between the 12th thoracic and first lumbar vertebra and the left one was situated between the margins of the second and fourth lumbar vertebra. The right kidney was positioned cranial, at the last right intercostals space, compared with the left, which was situated ventral to the last rib. The cranial pole of the right kidney touches the caudate lobe, making the renal impression of right lobe of the liver. Caudally the right kidney reached the descending duodenum. The left kidney touches with the cranial ventral face the descending colon and the caudal lobe of pancreas and the jejunal loops.

As in most mammals, in guinea pigs there is an asymmetrical topography of kidneys, the right kidney being situated more cranially compared to the left kidney.

This study provides comprehensive anatomical features of guinea pigs kidneys, wanting to be helpful information for the future rodent's comparative studies on urinary tract.

Key words: topography, kidney, guinea pigs, anatomy

OBSERVATIONS ON PATHOLOGICAL LESIONS IN YOUNG SWINE PRRS SYNDROME AFTER WEANING

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Summary

Pig reproductive and respiratory sindrom (Porcine Reproductive and Respiratory Syndrome - PRRS) is a disease infectocontagious with viral etiology, characterized by symptoms and lesions localized to the respiratory and genital tract. After the official reporting in the U.S. in 1987 the disease quickly spread being reported in Germany and the Netherlands and subsequently in many countries (3,5).

In 1998, the disease was officially diagnosed in Romania, currently having widespread in intensive swine both sows and the young after weaning, causing significant economic losses (4).

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

Key words: PRRS, lungs, lymphnodes

BIOCHEMICAL PARAMETERS OF BLOOD AND MILK IN A GROUP OF PIC SOWS

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Summary

Monitoring the metabolic profile for health surveillance, in lactating sows and piglets represents the main concern of research and practice in the swine breeding industry. The purpose of this study consists in evaluating the relevance of the main biochemical parameters from blood and milk, in the regular analysis of the metabolic profile, in order to evaluate and manage the risks that can affect the lactating sows and piglets.

The research consisted in the biochemical testing of some blood and milk samples, collected from a group of 15 PIC sows with piglets, subjected to a health status and lactation monitoring. The biochemical tests were performed using the VetScan analyzer for blood samples; the milk samples were analyzed using the Ekomilk M analyzer, using fresh samples collected from clinically healthy animals and with no changes in blood parameters. Individual and mean data were statistically analyzed using common programs (GraphPad InStat v3.0, GraphPad Prism v4.0) in conjunction with advanced statistical and graphical processing software (Origin 8 Pro), resulting in statistical correlations which are critical for assessing the relevance of the tested parameters.

The results revealed wide variations of the investigated parameters of the metabolic profile, with means situated at times outside the reference values for swine. Irregularities were reported being free of any pathological connotation, who outlined several features, typical for the lactation of sows. These were attributed to the evolution of the protein profile, which led to plasma protein values (7,0-9.8 g/dl) situated in the superior physiological range, 7 cases of increased plasma albumin concentration (4.8-6.5 g/dl) and decreased globulins concentration of plasma, in most cases (1,3-2,7 g/dl). Typical aspects were also recorded in the evolution of the enzymatic parameters, expressed by normal levels of the aspartate aminotransferase (63.0 U/L), significantly higher values only being recorded in one sow (233 U/L), significant increase of the GGT concentrations (99.2 U/L) and normal physiological values for the alkaline phosphatase (50,26 UI). The evaluation of the non-protein nitrogen revealed the normal urea values (14.0 mg/dl), values being in some cases lower than the physiological limits, and high creatinine values (1589.1 U/l), with some significant high individual values. The ion profile was characterized by normal values of plasma calcium (9.653 mg/dl), phosphorous (8.907 mg/dl) and magnesium (2.48 mg/dl) concentrations.

Special relevance was attributed to the proportion of the biochemical components of the sow milk, including 7.97% (5.37-13.3%) protein content, 8.18% (1.71-14.5 %) fat content and 13.67% (10.8-19.9%) dry matter content (without fats). Typical evolutions were recorded regarding the main physical parameters of milk, indicating values of 1.043 (1.028-

1.076) in the case of specific weight, 0.28°C (-0.954 – 0.744°C) for the cryoscopic point and 2.14% (0-10.3%) for added water.

Key words: sows, biochemical parameters, blood, milk

CHARACTERISTICS OF THE STRUCTURE - ACTIVITY RELATIONSHIP IN CASE OF PLATINUM COMPOUNDS: THEORETICAL AND APPLICATIVE ASPECTS

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Summary

In biochemistry and xenobiochemistry issues connected to the chemical structure-biological activity relationship are important because they allow to understand the specific mechanisms related to the metabolization of nutrients, respectively to the biotransformation of xenobiotics.

The approach of the structure-activity relationship in case of platinum compounds arouses interest because their cytostatic effects were widely studied and because one of its derivatives (cis-platinum) is frequently used in antineoplastic chemotherapy.

Data referring to platinum compounds (particularly to cis-platinum) are of interest for the cytostatic chemotherapy in the comparative oncology with clinical applications both in humans and some animals. In the present paper there are discussed general data regarding the platinum compounds as well as aspects regarding their biological activity with reference to their mechanisms of action, target molecules of the interactions a.o.

Key words: platinum compounds; cis-platinum, structure-activity relationship