

METABOLIC ROLE OF OREXIGENIC AND ANOREXIGENIC COMPOUNDS

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Summary

Metabolic rate of living organisms is strongly correlated with different compounds that mediate the appetite (in starvation or satiation way). Thus, the orexigenic compounds stimulate the appetite, while the anorexigenic compounds suppress the appetite. Orexigenic neurons stimulate eating and are neuropeptide hormones (neuropeptide Y – NPY) represented by orexin, ghrelin. Anorexigenic neurons suppress the appetite, producing α -melanocyte-stimulating hormone (α -MSH) represented by leptin and insulin; and also by and peptide-tyrosine-tyrosine. Muscle, adipose tissue, liver, pancreas, stomach and the colon are responsible for orexigenic and anorexigenic peptide hormones that regulate the food intake and energy homeostasis. There are two forms of orexin: orexin-A – a peptide form from 33 amino acids with two disulfide intrachain bonds, and orexin-B – a linear peptide form from 28 amino acids; both forms of orexin are produced by hypothalamus cells. Ghrelin is another peptide hormone produced by gastrointestinal cells (in empty stomach), and has neuronal signal in central nervous system, increasing the appetite. Leptin is a peptide hormone, form from 145 amino acids, produced by adipose cells, that acts by inhibiting the hunger. Insulin is a peptide hormone form by two chains of amino acids bounded together by disulfide bridges, secreted by pancreas, and is associated by leptin in energy homeostasis. Peptide-tyrosine-tyrosine hormone (PYY) is a neuropeptide Y, produced by the large intestine, with role in inhibition of orexigenic compound secretion. These compounds does not having role only in the health status, controlling the energy homeostasis (most in obesity), by also they are very important in exceptional longevity.

Key words: orexigenic, anorexigenic compounds, energy homeostasis

EPIDEMIOLOGICAL AND THERAPEUTICS APPROACHS IN CATS PYRETHROIDS POISONING

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Summary

Pyrethrins and pyrethroids are insecticides used for the treatment of insects infestation, such tick or flea. Accidental toxicity by pyrethrins or pyrethroids can occur with off-label usage, or to the cats which are particularly susceptible.

The purpose of this study was to determine the circumstances of poisoning cats with pyrethroids and establish new therapeutic protocols.

For this purpose it was made retrospective study of 18 cases of pyrethroids toxicity at cats, which was treated at Veterinary Clinic of Faculty and other veterinary clinics, from julay 2014 to may 2015.

The diagnosis of pyrethroids toxicity was made on the basis of a history of exposure and characteristic clinical signs such us seizures (80%), muscle fasciculations (9%), tremors (95%), hypersalivation (100%) etc.

Treatment protocols aim to control the clinical signs, seizure control and effective i.v. lipid emulsion therapy. Recovery typically occurred within 3 days, but in some cases took a single day or 5 to 10 days.

Key words: pyrethroid, cats, toxicity, therapeutic, lipid emulsion

HEAVY METAL AND MINERAL CONTENT IN THE COAT OF CATS IN RELATIONSHIP WITH RENAL FAILURE

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Summary

The investigations aimed to determine the level of heavy metals and minerals in the coat of cats and assessing their role in the occurrence of renal failure. Analyses were performed on hair samples from 15 cats. Six cats were clinically healthy, and formed the control group, and nine were suffering from renal failure, and formed the study group. Heavy metal and mineral content was determined using the ICP-OES method.

Overall, the control group registered higher mineral levels. Males of the control group had the highest levels of all analyzed toxic metals (aluminum, cadmium, nickel, and lead). In the study group, individuals above five years of age registered greater values for aluminum, nickel, and lead, than cats below five years of age; cadmium content was the same, regardless of age. Female cats suffering from renal failure registered greater values for nickel and lead than clinically healthy females. Mean heavy metal and mineral levels in correlation with renal failure degree are generally in accordance with other references from scientific literature.

Key words: cats, coat, heavy metals, minerals, kidney failure.

**ANATOMIC AND CLINICAL ASPECTS OF THORACIC
EFFUSIONS IN DOGS AND CATS**

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Summary

The authors present the importance of evaluation the anatomo-clinical status in thoracic effusions (pleural and pericardial), in corelation with the cytomorphological exam, for establishing a differential and positive diagnosis in dogs and cats.

All methods of investigation led to the establishment of a working protocol for veterinary medicine, starting with the medical history, clinical exam, radiological exam and cytology from the collected fluid, for diagnosis, prognosis and that the most appropriate therapy.

Key words: cancer, cytology, thoracic effusion, radiography.

THE SIGNIFICANCE OF BIOCHEMICAL PARAMETERS IN THE HEALTH CONTROL CARE OF PIGS ON COMMERCIAL FARMS

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Summary

Physiological ranges of blood biochemistry parameters differs substantially for each animal species. Assessment of biochemical parameters included in metabolic profiling have multiple significance in swine health care and production. Parameters of metabolic profile may be an indicator of shortage of food, and sometimes can point out to a variety of subclinical and clinical diseases. In clinically healthy animals (sows, boars), disorders in metabolic profile parameters can also occur, despite the fact that there is no visible symptoms. The material for the research included boars deriving from four commercial swine farms (farms A,B,C and D). In order to determine whether there has been a deviation in the physiological ranges of certain biochemical parameters, we analyzed biochemical parameters of 23 boars used in exploitation from a commercial farm "A". The following parameters were examined: Phosphorus (mmol/L), Calcium (mmol/L), Ca/P ratio, Bilirubin ($\mu\text{mol/L}$), Total proteins (g/L), Glucose mmol/l, Triglycerides (mmol/L), Albumins (g/L) and Urea (mmol/L). In the examined group of boars, the most variable results were observed in urea and calcium levels. In the blood of 28 boars from a commercial farm "B", 27 boars from commercial farm "C" and 3 boars from commercial farm "D", we analyzed levels of Phosphorus, Total protein, creatinine and AST. The results of biochemical analysis showed economical validity and represent a significant contribution to monitoring of the health status and production of pigs on commercial farms.

Key words: biochemical parameters, boars, commercial farm

**HISTOLOGICAL ASPECTS OF RATS PANCREAS IN ALLOXAN
INDUCED DIABETES MELLITUS AFTER YELLOW DOCK
(*RUMEX CRISPUS L.*) AND GOJI BERRY
(*LYCIUM BARBARUM L.*) ADMINISTRATION**

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Summary

This study pointed out the changes of pancreas, on the tissular level after the administration of Yellow Dock (*Rumex crispus*) and Goji berry (*Lycium barbarum*), as 6% aqueous extract, for seven weeks, in rats with alloxan induced diabetes mellitus. The previous studies pointed out that these plants can be used as antiglycaemic agents by reducing the blood sugar level. Also, it is well known the fact that alloxan is involved in destruction of pancreatic beta cells.

Key words: pancreas, diabetes mellitus, alloxan, antiglycaemic agents

HISTOLOGICAL RESEARCHES CONCERNING CARDIOVASCULAR SYSTEM IN RUMINANTS

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Summary

The endocardium is bounded by a continuous endothelium composed of a single layer of flattened cells. Under the endothelium can be found a subendothelial layer composed of thin collagen fibers, elastic fibers connecting the the endocardium with the myocardium. Subendocardium layer contains connective tissue fibers which is composed by blood vessels, nerves and Purkinje cells. The myocardium presents striated muscle cells that have spiral trajectory in the superficial ventricular myocardium and in the deep layer there are circular fibers around each ventricle. Within the structure of the myocardium enter interstitial connective tissue fibers, containing nerves and blood capillaries. The ventricular myocardium is thicker compared to the atrial myocardium. The epicardium is represented by a conjunctive serous membrane, covered by a single row of mesothelial cells. Elastic arteries include the aorta and vascular endothelium comprised of intimate presenting which comprises flattened polygonal cells. The deepest portion of the intima, the leiocite are observed. Internal elastic membrane is poorly represented and the average is composed of numerous blades and fenestrated elastic fibers concentrically disposed. The spaces between the collagen fibers, fibroblasts, and amorphous fundamental substance of rare smooth muscle fibers, which have a spiral trajectory. Adventitia is thin and is observed both vasorum utensils and lymphatic vessels.

Key words: endocardium, myocardium, epicardium, vascular endothelium.

RESEARCH CONCERNING URINARY HISTOSTRUCTURE IN SHEEP

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Summary

The urethra has a mucosa with a stellate lumen, with a urinary epithelium type, consisting of 4-5 rows of cells. Lamina propria is composed of dense conjunctive tissue to the epithelial area and loose connective tissue to the muscular. The muscular tissue is organized on two levels of smooth muscular fibers separated by conjunctive tissue: external circularly and internal longitudinally. The urinary bladder has mucosa tunica presenting an epithelium composed of several cell layers and the superficial cells are becoming squamous. Lamina propria is composed of elastic fibrous connective tissue. The muscle has three layers visible to the bladder neck: internal longitudinal, middle circular and external longitudinal, for the rest, the musculature has a plexiform arrangement. The sections were stained by following methods: hematoxylin eosin, hematoxylin eosin methylene blue staining and Mallory. In sheep, the kidney has a thick capsule made by fibrous connective tissue and smooth muscular fibers. On medio-sagittal section, it is observed that the medullary area has several Malpighi pyramids which offer a striated appearance because many blood vessels are presented. Nephrons are placed into renal parenchyma as: cortical or subcapsular, with external disposal, with shorter Henle loops; juxtamedullary with longer Henle loops, responsible for establishing the interstitial concentration gradient into the medullary; intermediaries located in the medium cortical region having a Henle loop of intermediate length.

Key words: urothelium, nephrons, Malpighi pyramids, renal parenchyma.

INVESTIGATION TECHNIQUES OF THE LYMPHATIC DRAINAGE OF THE CAUDAL THORACIC MAMMARY GLAND (T2) IN DOMESTIC CAT

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Summary

The current study describes and interprets, according to the obtained results, different aspects regarding the lymphatic circulatory system of the caudal thoracic mammary gland in domestic cat. Two methods had been used in order to emphasize the lymph nodes and the vessels that drain this gland: radiographic indirect lymphography with a contrast agent and *in vivo* injection of the coloring substance followed by the euthanasia of the subjects and stratigraphic regional dissection. The biologic material was represented by 10 domestic cats, clinically healthy, with their mammary glands in different physiological stages. The obtained results indicate the fact that the caudal thoracic mammary gland may present two possibilities of drainage. The investigation techniques used by us were able to complement each other in order to create a more complete lymphatic map as possible. It is very important to assess the possibilities of lymphatic drainage, and more especially the lymph nodes that drain the lymph, because in different types of mammary tumors these normal variants need to be clearly differentiated by the pathologic drainage. We consider that the current study has a real didactic and clinic utility. Knowing the precise lymphatic map of the caudal thoracic mammary gland in domestic cat leads to the establishment of proper surgical procedures as well as a correct prognosis when the mammary gland presents cancerous pathology.

Key words: cat, lymphatic, mammary gland, drainage

**MORPHOLOGICAL AND TOPOGRAPHICAL ASPECTS
REGARDING THE CORONARY ARTERIES IN GOAT (*CAPRA
HIRCUS*)**

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Summary

In this study are described in detail the main morphological and topographical aspect regarding the coronary arteries in goats. The study was performed on 10 hearts from goat. Coronary arteries were injected with a contrast agent (AGO). Right coronary artery gives cranial, caudal and ascending branches. Among them, the caudal branches presents individual variations. In general, the right coronary artery ends bifurcated, each branch penetrating cardiac muscle before getting into the subsinusal groove. Left coronary artery it has twice higher caliber than the right coronary artery. Among its terminals, the most developed is paraconal branch, which ends on the right side of the heart by three unequal branches. Circumflex branch, lower than paraconal branch, ends at the origin of subsinusal groove through a ascending and descending branches. The most important collateral of circumflex branch is marginal branch, that emerges in the opposite direction of the strongest atrial collateral of circumflex branch.

Key words: goat, coronary arteries, heart

INTEGRATIVE AND TRANSDISCIPLINARY ASPECTS IN PATHOBIOCHEMISTRY

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Summary

Approaching the issues of pathobiochemistry in an integrative and transdisciplinary context is based on information offered by the modern biochemistry and molecular biology with reference to proteomics, genomics, metallomics etc.

In biological systems the interactions produced by various *exogenous* (the presence of some xenobiotics) and / or *endogenous* (deficiency or excess of certain metabolites) factors can set off diseases which successively affect normal metabolic processes, the physiological activity of the cells and, finally their morphological integrity (ultrastructure).

Data provided briefly in this review reveal the transdisciplinary character in the connected approach of pathobiochemistry in the domains of human, veterinary and vegetal pathology (phytopathology). In this context there are presented also some peculiarities related to the investigation of pathobiochemical risks by biomarkers with diagnostic possibilities and monitoring.

Keywords: pathobiochemistry – integrative data, transdisciplinarity, biomarkers.

THE ASSESSMENT OF CANINE TEMPERAMENT

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Summary

The aim of this paper was to assess on the integration of the dogs in their human family and on their willingness to meet the owner's demands. The study was performed on 15 dogs of different ages: growing up or arrived at full maturity (up to four years of age) and over four years of age, also taking into account the level of the owner's involvement in educating his pet.

In this respect, to assess the temperament and the degree of adhesion to human group, it has been used the Campbell test and for testing the training skills, the Volhard test. The interpretation of these tests was made on the score obtained by the animals, after following certain simple tasks.

After applying the tests, in 7 out of a number of 9 dogs up to four years of age, dogs who have benefited in the past from the active involvement of the owner in their education process, it was found that they have a great temperament for being good companions, while those who have been ignored in this regard, have developed an independent behavior, without showing concern for the family and owner, regardless of the age group.

Key words: temperament, training skills, dog.

**CONTRIBUTIONS TO THE STUDY OF THE SKULL MORPHOLOGY OF
THE CARPATHIAN LYNX (*LYNX LYNX* SSP. *CARPATICUS*)**

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Summary

Although the Eurasian lynx (*Lynx lynx* L.) was spread throughout Europe, it has disappeared from most of its habitats during the 18th and 19th centuries. Nowadays the only remaining populations are in isolated areas of Scandinavia, Russia, Poland, Romania and the Balkan Peninsula. The loss of habitat, reduced food sources and intensive hunting (there was a period in Romania, during the '50s - 60s of last century, when it was considered harmful for herbivorous species for hunting) were the causes which can explain the reduced indigenous population of Eurasian lynx subspecies Carpathian lynx (*Lynx lynx* ssp. *carpathicus*) in the Romanian Carpathians Mountains. Due to this situation and considering the OG 20/2014 and OUG 31/2014, the lynx is considered be a species that requires strict protection in Romania. Taking into account this situation and the fact that there is a limited literature regarding the anatomical particularities of this species, we considered useful a description of the skull, which can be a trophy. Being a strictly protected species, the risk of poaching is high, so is important to know the most important features that can distinguish the lynx from domestic or wild cat. The study was conducted on five lynx skulls, coming from the museum of Anatomy Department from the Faculty of Veterinary Medicine of Bucharest. It was observed that the zygomatic arch provides greater closure of the orbit in lynx comparing to the domestic cat and a higher retroorbital zygomatic process. Also the aboral palatine hole is close to the aboral edge of the hard palate, which has the appearance of semicircular edge.

Key words: Carpathian lynx, skull, anatomical particularities

EVALUATION OF CHEMICAL COMPOSITION AND NUTRITIONAL VALUE OF MAIZE (*ZEA MAIS*) FROM TIMIS COUNTY, ROMANIA

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Summary

The aim of this study was to analyze the variation of crude chemical composition and nutritional value of maize during the years 2014-2015.

A total of 100 samples of maize were analyzed. It was determined the crude chemical composition (%), content of digestible nutrients (%) and metabolizable energy (ME kcal/kg) for swine and poultry.

Significant differences ($p < 0.001$) were observed between the values of principal nutrients of the two years. Thus, the following values were obtained: moisture (M%) varied between 8.53-10.02 and 10.85-19.03; ash (A%) between 0.83-1.81 and 0.71-1.01; crude protein (CP%) between 6.87-8.95 and 6.71-6.99; crude fat (ether extract) (EE%) between 2.91-4.47 and 2.95-3.11; crude cellulose (CF%) between 1.42-2.73 and 3.99-4.24, and for starch (S%) values were between 65.18-75.37, respectively 74.75-76.77. In 2014, mean values for M%, A%, EE% and CP% were higher than in 2015, and the mean values of S% and CF% were lower for the mase year. Digestible nutrients followed the same line as the crude chemical composition values. The mean percentages of chemical composition for 2015 contributed in obtaining higher values for metabolizable energy for swine and poultry (ME (kcal/kg) for pig=3468.16, and ME (kcal/kg) for poultry=3299.71) than in 2014 (ME (kcal/kg) for pig=3298.3, and ME (kcal/kg) for poultry=3154.27). These maize values were influenced by the precipitation regime and temperature in those two years. Thus, in 2014, the mean temperature (in August-September) was 18° C and precipitation regime of 87 mm. The year 2015 was one driest, registering a mean temperature of 20° C and a precipitation regime lower by 46% (40 mm) than in 2014.

In conclusion, the variation of environmental factors (temperature and precipitations) influence the crude chemical composition and nutritional value of maize.

Key words: nutrients, metabolizable energy, maize, swine, poultry

CELLULAR TYPES IN SHEEP COLOSTRUM AND ITS EVOLUTION IN THE TRANSITIONS FROM COLOSTRUM TO MILK

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Summary

The researches were focused on the analysis of cell populations in sheep colostrum (n=14) and milk (n=15) by examination of milk cytogram stained with the Panoptic technique. Identification and classification of cell types and subtypes were based on morphological criteria (nucleus aspect, chromatic material distribution, the presence of nucleoli or nuclear corpuscle) and physiological (volume and tinctorial variation of cytoplasm, ratio nucleus/cytoplasm, conditions and characteristics of activity). Cytologic configuration was completed with the evaluation of micro conglomerates between cell formations or between these and fat spherules. Milk cytology profile was defined by overall rating of cell contents, which included characterization and quantification of frequency of atypical cellular formations. Milk cytogram configuration was characterized by significant fluctuations during lactation, with predominance of macrophages in case of colostrum (45.65%) and lymphocytes in milk (36.27%). Comparative analysis of sheep colostrum and milk cytogram revealed higher proportions of active and hyperactive macrophages (45.60%), cellular and canalicular epithelial cells (8.33%) and atypical cellular formations (++) in colostrum. The predominance of these cells reveals the increased capacity to "self-defense" at level of mammary gland at the beginning of lactation which is a very labile phase. Epithelial cells population included alveolar, flattened and cylindrical type formations. Alveolar epithelial cells were in different states of activity had increased frequency in the population of epithelial cells; they were characterized by one or two spherical nuclei surrounded by a significant amount of basophil cytoplasm with foamy or annular aspect. Flattened epithelial cells were differentiated based on polygonal appearance and punctiform nucleus; cylindrical cells, rare, were presented as elongated formations, with oval nucleus and porous structure. The experimental results led to the conclusion that in colostrum can be observed frequently flattened and cylindrical cells derived from the cisternal or canalicular epithelium, and atypical cellular structures represented by nucleated polymorphic formations in necrobiosis or apoptosis.

Keywords: Typical and atypical cells, colostrum, milk, sheep.

MORPHOPATHOLOGICAL ASPECTS IN INFLAMMATORY PNEUMOPATHIES IN DOGS

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Summary

Out of a total of 35 dog bodies of different ages, sexes and breeds, necropsied between October 2013-February 2016, 26 were diagnosed with pneumopathies (74,28%). From the 26 cases were taken samples in order to achieve histopathological preparations for the microscopic exam.

In the cases taken into study, we have morphopathologically identified 13 cases of inflammatory pneumopathies (50%). They were exteriorized through: three cases, – pulmonary inflammatory edema (serous bronchopneumonia) (23.07%), in two case, with cardiopulmonary heartworms – vermin bronchopneumonia (15.38%), in two cases- lymphohistiocytic bronchopneumonia (15.38%), in one case - catarrhal bronchopneumonia with a chronic evolution (7.69%), in 5 cases - fibrinous bronchopneumonia(38,46%).

The alteration of the respiratory function causes morpho-physiological disorders of other organic systems, especially of the cardiovascular or nervous system.

Key words: morphopathological aspects, inflammatory pneumopathies, dog.

MORPHOLOGICAL CHANGES IN NON-INFLAMMATORY CARDIOMYOPATHIES IN DOGS

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Summary

The research was conducted during the period October 2013-February 2016 by carrying out the necropsic exam of 35 dog bodies of different ages, sexes and breeds. It was completed with a microscopic exam of the histopathological preparations which were obtained from heart samples coming from 23 cases which presented lesions. From the 23 cases with lesions, 16 cases were diagnosed with uninflammatory cardiomyopathie (69,56%). The diagnosed cardiac lesions, of the cases taken into study were multiple and complex, they developed in the same time or successively in several structures (pericardium, myocardium and endocardium as well as in blood vessels). They were exteriorized through adaptive cardiomyopathies (volumetric) (12.5%), circulatory cardiomyopathies (18.75%), degenerative (62.5%) and tumors (6.25%).

Volumetric cardiomyopathies were identified in two cases, expressed through right ventricular dilatation and right ventricular hypertrophy, cases which also presented canine heartworms.

Circulatory cardiomyopathies identified in three cases, are externalized through subendocardium and subepicardic bruising and suffusions.

Degenerative cardiomyopathies diagnosed in 10 cases, are the most numerous degenerative lesions, of which two cases were the lipid dystrophy and eight cases corresponded macroscopically to the protidic dystrophy.

Key words: morphological changes, non-inflammatory, cardiomyopathies, dog .

GRASS-FED BEEF

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Summary

Two separate, but related grass-fed beef production projects were conducted at the University of Wisconsin – River Falls during 2009 and 2010. In 2009, the cattle (born spring of 2008) were overwintered using a corn silage ration. In 2010, the grass-fed treatment group (born spring of 2009) were overwintered on alfalfa haylage, so this group never received any grain during their entire lifetime. In other respects the two trials were similar. In each year the cattle were randomly assigned to either a feedlot group (F) and fed conventional grain-based growing and finishing rations or a pasture group (P) which was rotationally grazed from early spring until market. Cattle from both groups were weighed monthly and monitored with real-time ultrasound scans for backfat thickness and marbling. When cattle reached a minimum of 9.0 mm fat thickness and individual weights appropriate for their frame score, they were harvested. Rate of gain for P cattle was slower ($P < 0.001$) than for F cattle (0.94 kg/day vs. 1.31 kg/day in 2009 and 0.98 kg/day vs. 1.38 kg/day in 2010). P cattle had less fat cover ($P < 0.001$) at market than F cattle (7.4 mm vs. 15.0 mm in 2009 and 9.7 mm vs. 14.2 mm in 2010). There was no difference between groups for marbling score or percent in USDA Choice in 2009. In 2010, P cattle had lower marbling scores ($P = 0.011$) than F cattle (451 vs. 553) but there was no difference in percent attaining USDA Choice. All P cattle attained market weight in less than 20 months of age. Implications are that grass-fed cattle can attain growth rate and carcass merit adequate for producing young tender beef with high likelihood of consumer acceptance.

Key words: beef, feed, grass, backfat thickness marbling

RESIDUAL FEED INTAKE AS A MEASURE OF FEED EFFICIENCY

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Summary

Residual Feed Intake (RFI) is a measure of feed efficiency that is independent of animal production measures such as average daily gain and mature size. Because of this it is an excellent tool for selection for improved feed efficiency without inadvertent selection for larger mature weight (leading to inefficient female line production, and slaughter animal carcass weights greater than desired by the packing industry) which is one of the major disadvantages of using historical measures of feed efficiency such as kg feed/kg gain or kg gain/kg feed. RFI data from a pilot project conducted with bulls in the 2012-2013 St. Croix Valley Bull Test at the University of Wisconsin – River Falls along with a review of the analytical techniques for determining RFI and implications for its use will be presented. Preliminary results from this trial generated a significant relationship ($P = 1.01 \times 10^{-10}$) when daily dry matter intake was regressed onto average daily gain and metabolic body weight ($R^2 = 0.696$). Of course, it is the residuals from this regression that indicate which bulls are more or less feed efficient—those with negative residuals (lower feed intake than predicted) being more efficient than the mean, and those with positive residuals (higher feed intake than predicted) being less efficient than the mean.

Key words: residual feed intake (RFI)

THE ASSESSMENT OF THE BODY CONDITION SCORE IN DAIRY COWS: A COMPARISON BETWEEN TIED AND FREE STALL HOUSING

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Summary

Body condition scoring is a useful tool widely recommended for evaluating the nutritional management of dairy cows. In the same time, the body condition score (BCS) is included in most of the welfare assessment protocols, being a valuable indicator of the dairy cows' welfare. The aim of this study was to compare the BCS of the dairy cows kept in different housing systems (tied and free stall). There were assessed all the dairy cows in 20 farms with tie stall housing (1385 lactating cows) and in 24 farms with free stall housing (2519 lactating cows) in Transylvania. The BCS of each cow was established using the assessment system validated by Edmonson et al. (1989) and modified by DEFRA (2001). The data were analyzed using the SPSS (version 17) statistical software. The results showed high variation of the percentage of the cows with different scores in the investigated farms. Within the cows kept in tie stalls a proportion of 5.63% were very lean (BCS=1), 35.74% were thin (BCS=2), 30.47% had a good body condition (BCS=3), 21.30% were fat (BCS=4) and 6.68% were very fat (BCS=5), respectively. In the free stall farms 2.70% of the cows were very lean (BCS=1), 33.42% were thin (BCS=2), 59.55% had a good body condition (BCS=3), 4.25% were fat (BCS=4) and 0.08% were very fat (BCS=5). When the BCS of the cows kept in different housing system was compared, significant differences ($P < 0.5$) were found only for score 3 (good body condition); the prevalence of the cows with good body condition being double in the free stall farms compared with those in tie stalls. The results obtained indicate better feeding of the cows in free stall barns, compared with those in tethered housing. Also the food conversion rate of the cows kept in free housing may be better and the prevalence of subclinical metabolic diseases may be lower in these animals, at least in their lactation period, compared with the cows in tie stall housing.

Key words: Body condition score (BCS), dairy cows, tie stall, free stall

THE OWNERS' ASSESSMENT OF LAMENESS IN WORKING HORSES

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Summary

Lameness evaluation is widely used in the clinical exam of the horse, including welfare assessment protocols. Even there are widely recognized lameness assessment protocols in horses, like the scale developed by the American Association of Equine Practitioners (AAEP), the subjectivity of evaluation can be an issue. The aim of this study was to compare the lameness evaluation made by the owners and a veterinarian in the same horse, to reveal the ability of owners to recognize lameness of their animal. A total number of 124 horses used for different works were assessed during four months, using the AAEP lameness scale by two veterinarians. Two different lameness assessment levels were set up for the owners who agree to take part of the study (a two score scale and the same AAEP scale explained and exemplified to them). The data were analyzed using the SPSS (version 17) statistical software. The results showed a high prevalence of the different lameness scores in the evaluated working horses, more than half of these being lame at some degree. The agreement between veterinarians and owners assessing lameness was low in general. When using the two point scale (lame versus not lame), the owners missed the veterinary diagnostic in 82% of the cases. Regarding the agreement in deciding which leg is lame the owners had the same opinion with the vets in only 17% of the cases. The lowest agreement was found between owners and vets when the AAEP scale was applied in establishing mild lameness (up to score 3), where only 7% of the owners perceived the horse to be lame and only 2.7% of the owners agreed with the vets in pointing out the lame leg. The subjectivity of assessment was much lower in the investigation of severely lame horses (score 4 and 5 on the AAEP scale), when more than 85% of the owners agreed with the vets regarding the lame leg and lameness degree. Yet, recognition by the owners of severe lameness in the horses' front legs was much better (in 82% of the cases) when compared to the hind leg lameness. The results obtained indicate the poor ability of the working horse owners to recognize lameness in their horses, which clearly points out the need for their education in order to increase the welfare of their animals.

Key words: lameness assessment, working horses, lameness diagnostic subjectivity

**MORPHOMETRIC BIODIVERSITY OF THE SKULL IN CHEETAH
(*ACINONYX JUBATUS*) - CASE STUDY**

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Summary

The study aims to analyze and describe the morphometric characteristics of the cheetah skull (*Acinonyx jubatus*). Morphometric peculiarities of the skull can be elements for recognition of the species useful to those interested. For this study it was used an adult cheetah, 7 years old, donated to the Anatomy Department by Circus & Variete Globus Bucharest. In order to perform the physical measurements of the skull we used a ruler, a compass, callipers and a livestock. There were conducted measurements and there were described the morphometric peculiarities of the skull. The following conclusions were driven: the skull is compact, the viscerocranium is short and the neurocranium is convex, the frontal bone is widened, having a zygomatic process at the frontal extremely low, the styloid process is lacking and it is replaced by a hollow elongated vertically, the aboral palatine foramens is very small, there are no alar foramen and alar channel, the circular cleft palates is continued in a rostral way with obvious incisive grooves.

Keywords: cheetah, skull, zygomatic process

**THE HISTOLOGICAL ASSESSMENT OF PANCREAS AFTER
MILK THISTLE (*SILYBUM MARIANUM L.*) AND SEA
BUCKTHORN (*HIPPOPHAE RHAMNOIDES L.*) EXTRACT
ADMINISTRATION IN DIABETES INDUCED RATS**

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Summary

The objective of this study was to assess the antioxidant effects of Milk thistle (*Silybum marianum L.*) and Sea buckthorn (*Hippophae rhamnoides L.*) extract on Alloxan induced pancreatic damage in adult rats. Seven days after Alloxan administration the glycaemia was determined and rats with over 135 mg/dl were considered diabetic. Those rats were divided in three groups: D – diabetic control, SM – group receiving *Silybum marianum* 6% aqueous extract and HR – group receiving *Hippophae rhamnoides* 6% aqueous extract. All the extract were administrated during a period of seven weeks. At the end of the experimental period pancreas was collected and prepared for histopathological studies.

The microscopic examination pointed out that lesions induced by Alloxan administration have not disappeared. The observed histopathological changes were: edema, reduction of number and size of Langerhans islets, sometimes absence of the islets, endocrine cells necrosis, leucocyte infiltration.

Key words: diabetes, pancreas, histopathology, rat

THE BIODIVERSITY OF THE MAMMARY LYMPH NODES AT RUMINANTS

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Summary

The lymphatic system at mammals has a maximal complexity and functioning development. Therefore, this complexity induce the immune response, wich through the organism reacts specific to the aggression of the external environment. The immune reactions, the most perfected and efficient are found at the superior vertebrates.

The mammary lymph nodes are disposed directly under the skin, to the caudal portion of the udder. The superficial lymph nodes can be palpated transcutaneous, but may appear also profund lymph nodes. At the large ruminants, the quarters from the same side are irrigated by the corresponding pudendal artery and a reduced portion from the posterior quarter is irrigated by a collateral artery of the internal pudendal artery.

At the small ruminants, the mammary lymph nodes are disposed on a branch that belongs to the external pudendal artery. At the large and small ruminants the mammary lymph nodes can be palpated transcutaneous.

After the effected study it can be observe that for the small ruminants at the superficial inguinal level it appears the external pudendal artery, disposed cranial by the mammary lymph nodes. At this lymph nodes level the external pudendal artery emits a caudal mammary branch and it continues then with the ventral labial artery. The perisinusal vascular network, in contrast with the large rumminants it appear a reduced development of these.

At the large ruminants the external pudendal artery, at the superficial inguinal level, it was in the caudal part followed by mammary lymphatic vessels. The external pudendal artery emits the cranial and caudal mammary artery. The branches from the caudal mammary artery irrigate the mammary lymph nodes.

Key words: arteries, ruminant, lymph node.

LIVER AND HEPATIC LIGAMENTS IN GOLDEN JACKAL (*CANIS AUREUS MOREOTICUS*)

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Summary

Although the golden jackal is considered the most representative species of the genus *Canis*, there are relatively few anatomical descriptions of its various systems. The aim of the present study was to perform a detailed description of the external conformation of the liver and hepatic ligaments. Using the anatomical dissection technique seven subjects belonging to the golden jackal specie were studied. The liver was divided into two territories (the right and left) by the falciform ligament, the largest part being in the right side. The two territories were divided by deep fissures in six obvious lobes: right lateral hepatic lobe (RLHL), right medial hepatic lobe (RMHL), left medial hepatic lobe (LMHL), left lateral hepatic lobe (LLHL), quadrate lobe (QL) and the caudate lobe (CL). The caudate lobe was subdivided in the caudate (CP) and papillary process (PP). The peritoneum covered almost the entire surface of the liver. Its reflection on the diaphragm formed the coronary ligament, whose borders were continued on both sides by the two obvious triangular ligaments: right and left. Cranially, this ligament was found in relation with the dorsal part of the falciform ligament. The falciform ligament was incomplete in all subjects, missing its insertion on the abdominal wall. The hepato-renal ligament connects the caudate lobe to the cranial pole of the right kidney. The lesser omentum, whose free edge contained the right portal vein, the bile duct, and the hepatic artery and veins, connecting the porta of the liver to the proximal duodenum, formed the hepato-duodenal ligament. The left side of the lesser omentum connected the liver to the left side of the esophagus and to the small curvature of the stomach, forming the gastro-hepatic ligament. In conclusion, liver lobes and connecting elements of the liver in golden jackal are similar to those described in the domestic dog.

Keywords: liver, hepatic ligaments, morphology, golden jackal

MORPHOLOGICAL DESCRIPTION OF THE ROOT OF THE TEETH IN GOLDEN JACKAL (*CANIS AUREUS MOREOTICUS*)

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Summary

The golden jackal is one of the species with an ongoing expansion in south-eastern Romania. The distribution, ecology and dietary habits are related to its high adaptability to various environments. The teeth of the golden jackal are adapted to the type of nutrition, being reflected both on the crown and on the root morphology. The aim of the present study was to perform a detailed morphological description of the root of the teeth in golden jackal. The dentition of seven golden jackals (four male and three female) was directly and radiologically examined. The golden jackal dental formula was $I \frac{3}{3} C \frac{1}{1} PM \frac{4}{4} M \frac{2}{3} \times 2 = 42$ teeth. The incisors (I), placed perpendicular on the two arches, had a long and strong root, laterally compressed and a slightly blunt apex. Maximum canine tooth development (C) was found at its root, both in terms of its width and thickness. The vestibular side of the root was very convex while the lingual side was plane. The canine apex was narrow, quickly closed, to strengthen the strong root implantation. The canine root extended until the mesial root of the second premolar tooth. Both the upper precarnassials (premolar) teeth (PM I, II, III) and the lower (PM I, II, III and IV) presented two roots, the distal root being stronger than the mesial one. The upper carnassials tooth (or the last upper premolar tooth, PM IV) and the two upper postcarnassials (M I and M II) had three roots: two vestibular roots and one lingual root. The two roots of the lower carnassial tooth (M I) have a divergent orientation, being quite separate. The first lower postcarnassial tooth (MII) presented two roots, and the second (MIII) presented only one. In conclusion, the detailed description of the root of the tooth in golden jackal makes a substantial contribution to the knowledge of the biology of this species.

Key words: dentition, golden jackal, root, morphology