SLOVAK AGRICULTURAL UNIVERSITY IN NITRA

FACULTY OF BIOTECHNOLOGY AND FOOD SCIENCES
DEPARTMENT OF ANIMAL PHYSIOLOGY

VI. SLOVAK CONFERENCE OF ANIMAL PHYSIOLOGY

8.-9. June 2005
Nitra, Slovak republic

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ABSTRACTS
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Editors: Ing. Marcela Kramárová, PhD
doc. MVDr. Peter Massányi,PhD.
Ing. Norbert Lukáč, PhD.

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DOMINANTNÉ PREOVULAČNÉ A ATRETICKÉ TERCIÁRNE FOLIKULY VAJEČNÍKOV OVIEC PO ASISTOVANOM ESTRE A OVULÁCII

DOMINANT PREOVULATORY AND ATRETIC TERTIARY FOLLICLES IN EWES OVARY AFTER OESTRUS SYNCHRONIZATION AND INDUCTION OF OVULATION

Antal J., Maraček I., Halagan J.,

Katedra normálnej anatómie, histológie a fyziológie, Ústav fyziológie, Univerzita veterinárskeho lekárstva, Košice.

This work was focused on observation and evaluation of the surface tertiary follicles based on simultaneous use of the biometrical, parameter and determination of the oestradiol-17β (E_2) and progesterone (P_4) concentration in the follicular fluid of the largest follicles from ovaries of Slovak Tsigai ewes after oestrus synchronization and stimulation of the ovulation rate (OR). It can be occluded from performed observations the oestradiol-17β levels in follicular fluid of the selected dominant tertiary follicles are increased significantly as compared with the large atretic follicles ($P<0.001$).

VPLYV HORMÓNOV GHRELÍNU A LEPTÍNU NA EXPRESIU TRANSKRIPČNÝCH FAKTOROV CREB, STAT-1 , APOPTÓZU, PROLIFERÁCIU A SEKREČNÚ AKTIVITU U KULTIVOVANÝCH OVARIÁLNYCH BUNIEK OŠÍPANÝCH

INFLUENCE OF HORMONES GHRELIN AND LEPTIN ON THE EXPRESION OF TRANSKRIPTION FACTORS CREB,STAT, APOPTOSIS, PROLIFERATION AND SECRETORY AKTIVITY IN CULTURED PORCINE OVARIAN CELLS

Benčo, A., Sirotkin A.V., Pavlová S. , Alžbeta Tandlmajerová, Monika Mesárošová

The goal of our experimental work was to study an effect of hormones ghrelin and leptin on proliferation (expression PCNA, cyclin B-1,MAPK/ERK1,2 markers of proliferation), apoptosis (expression of apoptosis related peptides ASK-1,p53, bax), antiapoptotic peptide Bcl-2 , transcription factors CREB and STAT-1 and release of progesterone in cultured porcine ovarian granulosa cells. It was observed, that leptin increases the percentage of cells containing PCNA, MAPK/ERK1,2,

cyclinB-1 ASK-1, p53, bax, Bcl-2, STAT-1 and decreased the proportion of cells containing CREB but not affects progesterone secretion. Ghrelin increased the expression of PCNA, MAPK/ERK1,2, cyclin B-1, ASK-1, p53, bax, STAT-1 and progesterone secretion , decreased the percentage of cells containing Bcl-2 and CREB. The obtained results suggest that both leptin and ghrelin are involved in control of porcine ovarian functions: these hormones can be activators of proliferation , apoptosis and stimulators of progesteron secretion. Furthermore, the influence of these hormones on CREB-1, STAT-1 indicates, that these transcription factors could be potential mediator of their action on the ovary.

FYZIOLOGICKÁ GENETIKA A MOŽNOSTI ŠTÚDIA METABOLIZMU ŽIVOČÍCHOV

PHYSIOLOGICAL GENETICS AND POSSIBILITY OF THE STUDY OF ANIMAL METABOLISM

Bulla, J.

Katedra fyziológie živočíchov, Fakulta biotechnológie a potravinárstva SPU v Nitre

Genetic variability among animals for measures of many characteristics has been well established. Experiments studying metabolic control of production characteristics can be designed to capitalize on the existence of genetic differences. Consideration is given in this presentation to the use of genetic concepts and variation in the study of metabolic control. Discussion includes qualitative and quantitative characteristics, interpreting genetic parameters and the use of selected lines an breed comparisons.

Key words: Animals, Metabolism, Genetic Control, Variability

OBSAH MASTNÝCH KYSELÍN A CHOLESTEROLU V TUKU NIEKTORÝCH TKANÍV DIFERENCOVANÝCH PLEMIEN HOVÄDZIEHO DOBYTKA

FATTY ACID COMPOSITION AND CHOLESTEROL CONTENT OF THE SOME FAT FROM TISSUE OF DIFFERENT CATTLE BREEDS

Bulla, J.[1], Bullová, M.[1], Szarek, J.[2], Szulc T.[3], Gibaštík, P.[4], Pavličová, S.[1], Vavrišinová, K.[1]

[1] SPU v Nitre, [2] AR Krakow, [3] AR Wroclaw

Cholesterol and fatty acid composition of fat from cattle musculus longissimus thoracis (MLT) and liver were analyzed in samples from

purebred and crossbred bulls (Slovak Pied, Slovak Pinzgau, Charolaise, Limousine and Holstein). Fatty acid composition was determined by gas chromatography (Chrompack CP 9000). Total cholesterol content was determined by the method (Horňakova et al., 1974). Differences ($P < 0,05$) among breeds were detected in cholesterol content of liver and muscle. Fatty acid composition and content of liver and muscle not differed ($P > 0,05$).

Key words: Cattle, Tissue Fatty Acids, Cholesterol, Breeding

VÝŽIVA DETÍ RÓMSKEHO ETNIKA Z BANSKEJ BYSTRICE

NUTRITION OF CHILDREN OF ROMANIAN ETHNIC FROM BANSKÁ BYSTRICA

Cudráková, Z.

Katedra biológie FPV Univerzita Mateja Bela Banská Bystrica

Supposed unhealthy diet habits and food composition may have adverse consequence for pathological blood serum lipids concentrations, genesis of obesity, high blood pressure, development of diabetes and atherosclerosis. Some facts about nutrition were obtained by questionnaire method from 42 Romanian children, which were came from Slovak district city Banská Bystrica. Known association between formation of atherosclerosis and nutrition should lead to search the other important predictors for cardiovascular disease.

VPLYV MEDI, KADMIA, HORĆÍKA, KOBALTU, ZINKU A BARIA NA ENZYMATICKÚ AKTIVITU V BACHORE

EFFECT OF COPPER, CADMIUM, MAGNESIUM, COBALT, ZINC AND BARIUM ON RUMINAL ENZYME ACTIVITIES

Faixová, Z.,[*] Faix, Š., Maková, Z.

Ústav patologickej fyziológie, UVL, Komenského 73, [*] Ústav fyziológie hospodárskych zvierat SAV, Šoltésovej 3, Košice

In vitro incubation experiments were conducted to evaluate the influence of ions on ALT, AST, GGT and GDH activities of rumen fluid. Rumen fluid was collected from six fistulated ewes. Zn, Cu, Cd, Mg, Co and Ba were each added to 10 mL of rumen fluid to obtain final concentrations of 5 mmol/L. After the addition of each ion, the mixture was

shaken and incubated for 30 min. at 37^0 C prior to enzyme activity assay with or without ions using spectrophotometric methods. Cd stimulated ALT and AST acivity. Cu inhibited GDH activity and it stimulated GGT activity. Mg stimulated GDH activity. Co stimulated ALT, AST and GDH activity. Zn increased ALT, AST and GDH activity and inhibited GGT activity.

EFFECT OF RESVERATROL ON THE TESTOSTERONE PRODUCTION OF MOUSE PRIMARY LEYDIG CELL CULTURE

[1]Forgács, Zs, [2]Somosy, Z, [2]Telbisz, Á, [3]Massányi, P, [3]Lukác, N

[1]National Institute of Chemical Safety, Budapest, Hungary
[2]National "Frederic Joliot-Curie" Research Institute for Radiobiology and Radiohygiene, Budapest, Hungary
[3]Slovak University of Agriculture, Nitra, Slovak Republic

Resveratrol (Res) is a phytoestrogen and antioxydant of the red grape, which translocates and presents into the red wine. This compound is a known modulator of the balance of different sex hormones and founded to be an agonist of estrogen and androgen receptors. In our experiments primary cultures of mouse Leydig cells were exposed to resveratrol at the concentration range of 1.56 - 200 μM for 48 hours. Testosterone (T) content of the culture media was measured by enzyme linked immunosorbent assay (ELISA). The effect of Res on the T production was studied also in the presence of maximally stimulating amounts of human chorionic gonadotropin (1 IU/ml hCG) or dibutyryl cyclic adenosine monophosphate (1 mM db-cAMP). Res did not reduce the basal T production of Leydig cells up to 100 μM concentration. Moreover, interestingly Res stimulated the basal T production in the 12.5-50 μM concentration range. Whereas hCG (an LH receptor agonist) stimulated T production was decreased at 25 μM concentration of Res, while the db-cAMP (an effector of post-receptor signaling route) stimulated T response diminished even at 12.5 μM of Res. Res had also an additive effect on hCG stimulated T response at 3.12 μM concentration.

Our data suggest that Res may influence the testosterone production via direct or indirect modulation of LH-receptor mediated signals (at the receptor or secondary messenger cAMP level). Another possiblemechanism of the effect of resveratol is a cross-talk effect between androgen and estrogen receptors.

VPLYV KONTINUÁLNEHO OŽAROVANIA, DMBA A MELATONÍNU NA IN VITRO FAGOCYTÁRNU AKTIVITU V KRVI POTKANOV

INFLUENCE OF CONTINUOUS IRRADIATION, DMBA AND MELATONINE ON IN VITRO BLOOD PHAGOCYTIC ACTIVITY IN RATS

Friedmanová, L., Paulíková, E., Orendáš, P., Ahlersová, E., Ahlers, I.

PF UPJŠ, Moyzesova 11, 041 67 Košice, Katedra fyziológie živočíchov, Ústav biologických a ekologických vied

Continuous low dose irradiation, chemocarcinogenic substance dimethylbenz(a)anthracene (DMBA) and exogenous melatonin treatment have been used to follow hematological parameters and blood phagocytic activity in female rats (Wistar-Han). Experimental animals were irradiated (96 mGy per day) from ^{60} Co γ-source for 15 days. Some groups were drinking melatonin solution (20 mg/l water) during exposure. DMBA (10 mg/ml oil) was given 3x within a week after irradiation. Analyses were performed on day 30, 100 and 180.An enhanced total leukocyte count, monocytosis , neutrophilia but the decrease in phagocytic index was found in groups of triple combination treatment on day 180 after irradiation.

VPLYV PODMIENOK NA PREŽÍVANIE VYBRANÝCH PROBIOTICKÝCH MIKROORGANIZMOV

THE INFLUENCE OF CONDITIONS TO LIVING OF SELECTED PROBIOTIC MICROORGANISMS

Golian, J.[2], Sokol, J.[1], Hanzel, S.[1], Rajský, D.[3],

[1]Slovenská poľnohospodárska univerzita Nitra, [2]Krajská veterinárna a potravinová správa Trnava, [3]Regionálna veterinárna a potravinová správa Dunajská Streda

Acid resistance of bacteria of milk fermentation in acid medium and in medium of bile acids were tested. Bacteria *Lactobacillus plantarum* signified acidoresistant towards pH 2,0 in the acid medium and *Lactobacillus helveticus* was not resistant. The biliary salts with content of 0,03% did not influence viability of selected bacteria. The bile acids had unfavourable effect to viability of. *B. Lactis* BB12.

LABORATÓRNA DIAGNOSTIKA GRAVIDITY PRASNÍC

LABORATORY PREGNANCY DIAGNOSIS IN SOWS

Hajurka, J., Sirotkin, A., *Hura, V., Makarevič, A.*

Klinika pôrodníctva, gynekológie a andrológie
Univerzita veterinárskeho lekárstva, Košice
**Výskumný ústav živočíšnej výroby, Nitra*

Early and accurate identification of pregnant and nonpregnant sows and gilts improves reproductive efficiency in commercial swine farms. Serum progesterone and oestrone sulphate concentration was measured by RIA in samples taken from 32 sows during the period 26 to 30 days after mating. Overall accuracy of pregnancy diagnosis based on progesterone was 71.9 % and on oestrone sulphate was 93.8 %. „False positive“ results (based on subsequent farrowing) by estimation of progesterone in this period is so high and in our experiment was 90.0 %.Oestrone sulphate determination is more suitable method than progesterone for pregnancy diagnosis in sow herds, with higher accurrence of embryonic mortality which prolong interoestrus interval above 25 days after mating.

PUERPERÁLNA INFEKCIA MATERNICE KRÁV A CELKOVÁ IMUNITNÁ ODPOVEĎ

PUERPERAL INFECTION OF UTERUS IN COW AND IMMUNE RESPONSE

Hajurka, J., Revajová, V., Macák, V., Novotný, F.

Univerzita veterinárskeho lekárstva, Košice

During the periparturient period cows undergo marked physiological changes that might cause suppression of host defence mechanisms and an increase in susceptibility to uterine infections. An indirect immunoflorescence method for staining and flow cytometric analysis was employed to determine the cell subpopulation of lymfocytes. Indices of cellular immunity were evaluated in postpartum dairy cows (n = 7) suffered with acute endometritis.
Antibody – mediated and cell – mediated immunity were induced after puerperal uterus inflamotion.

HORMONÁLNA A AKUPUNKTÚRNA SYNCHRONIZÁCIA RUJE U ANESTRICKÝCH BAHNÍC.

HORMONAL AND ACUPUNCTURE SYNCHRONISATION IN ANESTROUS EWES.

Halagan, J., Maraček, I., Staníková, A.

Katedra normálnej anatómie, histológie a fyziológie, Ústav fyziológie, UVL Košice

The simple acupuncture needling has been used for purpose to activate of the ovary in anoestrous ewes. Totally 15 of 3 years old ewes after regularly lambing and weaning of lambs were used in half of May. First group were as randomised animals. Second were chlorsuperlurine treated. The third group developed acupuncture treatment. Acupuncture treatment procedures have been consisted of needling of two pares of active points of Blader Meridian (BL 21 and BL 22). Each treatment has been left in action for 15 or 20 minutes time. Stimulation by inserting of needle has been carried out by contra dial rotation of inserting needle. The needling procedure has been repeat three times in 48 intervals. The stimulatory effect of the treatment were evaluated according morphological changes on the ovary on second respective on the 5th days after last procedure by laparotomy. Significantly increase of ovary follicular activity after acupuncture stimulation has been found in anoestrous ewes in comparison to untreated ewes but not the same range as we found in hormonally synchronized ewes. Preliminary results confirm an idea for involving of traditional chinise medicine treatment in sheep reproduction if treatment will be performed and evaluated individually case by case. Two theoretical aproaches to explanation of the needling effect were discussed .

VPLYV VÝŽIVY NA CHEMICKÉ ZLOŽENIE PRSNEJ SVALOVINY BROJLEROVÝCH KURČIAT

INFLUENCES ON CHEMICAL COMPOSITION OF BREAST MUSCLE BROILERS

Haščík,P., Čuboň, J., Kulíšek, V.

Slovenská poľnohospodárska univerzita Nitra

In the experiment chemical composition of breast muscle of hybrid ISA 30 are evaluated. The complete foods diets on the base animal meal and vegetable foods where compared. The significant differences of chemical composition in the breast muscles where only in higher protein contents

and higher cholesterol contents in the experimental groups ((P≥0,05, P≥0,01) The lower slaughter weights and higher cholesterol content in the group feeds with complete food diets based only vegetable components negatively influenced the economic of fattening. The biological influence substance, probiotics, fytobiotics, syntetics aminoacids for increasing growth intensity and slaughter weights are necessary to add to complete food diets based on vegetable foods. The higher nutrition composition positively affects nutritive value of meat. For consumers of meat it means the lower risk of cardiovascular diseases.

REGULÁCIA PERIFÉRNYCH CIRKADIÁNNYCH OSCILÁTOROV U KURČAŤA POČAS PRENATÁLNEHO A POSTNATÁLNEHO VÝVINU

REGULATION OF OSCILLATORS IN PERIPHERAL TISSUES IN CHICKEN DURING PRENATAL AND POSTNATAL LIFE

Herichová I.[1], Zeman M.[1,2], Lamošová D.[2]

[1]Katedra živočíšnej fyziológie a etológie, Univerzita Komenského v Bratislave, Bratislava
[2] Ústav biochémie a genetiky živočíchov, SAV, Ivanka pri Dunaji

Many physiological functions express a rhythmic pattern. Daily rhythms persisting without an external input are driven by an autonomous circadian oscillator localised in the brain. The master pacemaker coordinates functions of peripheral oscillators by neural and humoral signals. The aim of our work was to study peripheral clocks in the heart during prenatal and postnatal life of chicken. We measured a daily pattern of clock genes *bmal1*, *per2* and *E4BP4* in 19 day old embryos and 4 day old chickens by real time PCR. We conclude that unlikely other circadian features studied till now with use of avian experimental models, peripheral clock in the heart show fully developed pattern of clockwork postnataly.

INOVAČNÉ METÓDY ZISKU EMBRYÍ U OŠÍPANÝCH

COLLECTION OF EMBRYOS IN GILTS- INNOVATIONAL METHODS

Horňáková Ľ., Pošivák J., Lazar G., Valocký I.

Klinika pôrodníctva, gynekológie a andrológie, Univerzita veterinárskeho lekárstva, Košice

The application of embryo-transfer (ET) in multiparous swine is limited compared to the unipara ruminant species. Although this method can be useful in disease control of population (SPF), propagation of endangered swine breeds or obtaining more offspring from sows with high genetic value. The ET has more steps including selection of donor and recipient gilts/sows, cycle synchronization, embryo recovery, handling of the embryos, transfer into recipients. These applications related to *in vitro* technologies are reviewed in this paper.

SLEDOVANIE VPLYVU LACTOBACILUS CASEI VAR. SUBP. PSEUDOPLANTARUM Č. 294 NA VYBRANÉ UKAZOVATELE U PRASIAT

MONITORING OF *LACTOBACILLUS CASEI VAR. SUBP. PSEUDOPLANTRUM NO. 294* INFLUENCE TO SELECTED FACTORS IN PIGLETS

Húska M., Kováč G., Link R., Novotný J., Popelková M.

Univerzita veterinárskeho lekárstva, Komenského 73, 041 81 Košice, Slovenská Republika

The aim of our study was to obtain more information about the influence of *casei subp. pseudoplantarum no. 294* oral on the systemic immunity response in the digestive tract of piglets. In two model experiments, 6 pigs in each group - experimental (E) and control (C) - were used. 6 animals in group E were given 3 ml of *L. casei subp. pseudoplantarum no. 294* oral. Blood collection was from eyes, through the venous circulation on the 5., 14., 21., 28., 42., 49., 59. and 73. days of age. To realize the aim, we determined phagocytic activity of neutrophils (FA Ne) and leukocytes (FA Lc), the phagocytic activity index of neutrophiles (IFA Ne) and leukocytes (IFA Lc), reduction of tetrazolium salt (INT Test) and concentration of total immunoglobuline- (Tlg), concentration of erytrocytes (Ec), leukocytes (Lc), Hb, Hk, albumines (ALB), total proteins (TP), MCV and glucose.

VPLYV PODÁVANIA *LACTOBACILLUS REUTERI* NA VNÚTORNÉ PROSTREDIE PRASIAT

INFLUENCE OF *LACTOBACILLUS. REUTERI* ADMINISTRATION TO INTERNAL ENVIROMENT IN PIGS

Húska, M., Reichel P., Novotný J., Link R., Popelková M.

Univerzita veterinárskeho lekárstva, II. interná klinika, Košice, Slovenská republika

The aim of our study was to obtain more information about the influence of *Lactobacillus reuteri* on the systemic immunity response in relationship to bacterial pathogen *E. coli* in the digestive tract of piglets. In two model experiments, 18 pigs in each group - experimental (E) and control (C) - were used. For 49 days, 10 animals in group E were given 3 ml of *L. reuteri* oral for 5 days. Each animal was applied with 3 ml *E. coli*. Blood collection was from eyes, through the venous circulation on the 49, 54 and 59 days of age. To realize the aim, we determined phagocytic activity of neutrophils (FA Ne) and leukocytes (FA Lc), the phagocytic activity index of neutrophiles (IFA Ne) and leukocytes (IFA Lc), reduction of tetrazolium salt (INT Test) and concentration of total immunoglobuline- (Tlg). 24 hours after application of E. coli in group C, first clinical changes, such as increased temperature and, in one case, death, appeared. In group E no death was recorded. Obtained values were highest in group E on 59 day of age.

ANALÝZA MLIEKA TRANSGÉNNYCH A NETRANSGÉNNYCH KRÁLIKOV

ANALYSIS OF TRANSGENIC AND NON-TRANSGENIC RABBIT MILK

P. Chrenek[1,3], S. Dragin[1,2], L. Chrastinova[1], K. Kirchnerova[1], J. Rafay[1], J. Bulla[3]

[1]Výskumný ústav živočíšnej výroby, Nitra, [2]Agronomická fakulta, UNS, Srbsko a Čierna Hora, [3]Fakulta Biotechnológií a potravinárstva, SPU, Nitra

The aim of this preliminary study was to compare milk production and quality of transgenic and non-transgenic rabbit females on the I. - lactation. Transgenic animals (F0 generation) were made by embryotransfer of microinjected rabbit eggs with WAP-hFVIII gene construct into pronucleus of fertilized eggs. The next F1 generation was obtained after

breeding of transgenic founder rabbits (F0 generation) with non-transgenic rabbit.

Transgenic rabbits produced recombinant human factor VIII (rhFVIII) into milk. Possible effect on milk quality and quantity of transgenic females was compare with non-transgenic females. The amount of milk produced by does at 10^{th}, 15^{th}, 20^{th} and 30^{th} day of the I.- lactation by weight-suckle-weight method and milk quality (fat, protein, lactose, and number of somatic cells) of both group were measured. Comparison of milk production showed that there are no differences between transgenic and standard genotype females. Significant differences ($P<0,05$) in content of proteins, fat and number of somatic cells were received in transgenic rabbit milk comparing with non-transgenic one.

ÚČINOK FYTOBIOTIK A EXOGÉNNYCH TRÁVIACICH ENZÝMOV NA ZDRAVIE A UŽITKOVOSŤ HOSPODÁRSKYCH ZVIERAT

THE INFLUENCE OF PHYTOBIOTICS AND EXOGENOUS DIGESTIVE ENZYMES ON HEALTH AND PRODUCTION EFFICIENCY OF FARM ANIMALS

Ivanko, Š., Dinda, Š., Mařeček, E.,*Chalupa,M **. Falat, M.***

*Cymedica Zvolen, s.ivanko@worldoe.cz,*UKZUZ Praha, Motol** Cymedica CZ *** Dona.s.r.o.,072 43 Veľké Revištia*

The results of our experiments approved, that exclusion of antibiotic growth promotor (avilamycin) and the use of phytobiotic product XTRACT^{TM} in combination with RONOZYME P and ROXAZYME G2 is provable improving the health of animals and production efficiency of complete feed mixes, especially by balancing requirement of calcium and phosphorus. Complete feed mixes with a reduced level of Ca and closer relation between Ca and P total resulted in a statistically very significant higher average of body weight gain together with a significant better feed conversion rate.

APPLICATION PCR – BASED POLYMORPHISM OF LEPTIN GENE AS QTL FOR MILK PRODUCTION TRAITS IN DAIRY CATTLE IN SLOVAKIA.

Jakabová, D.[1], Trandžík, J.[1], Haško, M.[1], Massányi, P.[2], Kozlík, P.[1], Chrastina J.[1], Jakab, F.[3], Turčan, J.[3], Kukurová L.[4], Bulla J.[2]

[1] State Breeding Institute, Slovak Republic, [2] Slovak Agricultural University, Slovak Republic, [3] State Breeding Inspection, Slovak Republic,[4] Constantine the Philosopher University, Slovak Republic

Leptin is a hormone synthesized by adipose tissue, with important effects in regulating body weight, metabolism and reproductive function. The protein is approximately 16 kDa in mass and encoded by the obese (ob) gene. We investigated DNA polymorphism in ob locus, what is associated with higher milk production (*AB* genotype in RFLP1).

MAMÁRNA KARCINOGENÉZA A JEJ OVPLYVNENIE PODÁVANÍM MELATONÍNU U OPAKOVANE STRESOVANÝCH POTKANOV

MAMMARY CARCINOGENESIS AND THE INFLUENCE OF MELATONIN ADMINISTRATION IN REPEATEDLY STRESSED RATS

Kassayová, M., Adámeková, E., Bojková, B., Marková M., Kubatka, P., Ahlers, I., Ahlersová, E.

Katedra fyziológie živočíchov, Ústav biologických a ekologických vied, Prírodovedecká fakulta UPJŠ, Košice

The aim of this study was to evaluate the effect of exogenous melatonin (MEL) on N-nitroso-N-metylurea (NMU)-induced mammary carcinogenesis in repeatedly immobilized female Sprague-Dawley rats. Melatonin solution was given at low doses, 4 μg/ml of tap water, discontinuously - from 3.00 p.m. to 8.00 a.m., with the administration onset from 5th day before carcinogen administration to 63th day of animal age (during 15 days – the promotion phase) or until the end of experiment (20 weeks). Animals were immobilized in special boxes for 7 x 120 minutes. Long-term MEL administration reduced the number and the size of mammary tumours more markedly in comparison to its short-term administration.

ÚLOHA PROGESTERÓNU, IGF-I A IGFBP-3 V REGULÁCII POHLAVNÉHO DOSPIEVANIA PRASNIČIEK

THE ROLE OF PROGESTERONE, IGF-I AND IGFBP-3 IN REGULATION OF PORCINE SEXUAL MATURATION

Kolesárová A.[1], Sirotkin A.[2], Kramárová M.[1], Massányi, P. [1], Kováčik J.[1]

[1]Katedra fyziológie živočíchov, Slovenská poľnohospodárska univerzita v Nitre, [2]Ústav genetiky a reprodukcie HZ, Výskumný ústav živočíšnej výroby v Nitre, E-mail: akolesarova@pobox.sk

The aim of our experiments was to study the influence of level of progesterone (P_4), insulin-like growth factor I (IGF-I), IGF-binding protein-3 (IGFBP-3) in blood plasma and the release of these substances by porcine ovarian granulosa cells cultured in vitro on sexual maturation. Gilts were divided in two groups according to the sexual maturation (sexually immature gilts and sexually mature gilts). By radioimmunoassay and immunocytochemistry we determined, that sexual maturation of gilts is associated with an increase content of P_4, IGF-I, IGFBP-3 in blood plasma and granulosa cells. These data demonstrate the ability of P_4, IGF-I and IGFBP-3 to regulation of porcine sexual maturation.

EXPRESIA PROTEÍNKINÁZY G , MAP KINÁZY ERK1,2, TYROZÍNKINÁZY PHT A ODOZVA OVARIÁLNYCH GRANULÓZNYCH BUNIEK PRASNIČIEK NA DBCAMP, IGF-I A OXYTOCÍN

THE EXPRESSION OF PROTEIN KINASE G, MAP KINASE ERK1,2, PHOSPHOTYROSINE PHT AND RESPONSE OF PORCINE OVARIAN GRANULOSA CELLS ON DBCAMP, IGF-I AND OXYTOCIN

Kolesárová A.[1], Sirotkin A.[2], Kramárová M.[1], Massányi, P. [1], Kováčik J.

[1]Katedra fyziológie živočíchov, Slovenská poľnohospodárska univerzita v Nitre, [2]Ústav genetiky a reprodukcie HZ, Výskumný ústav živočíšnej výroby v Nitre, E-mail: akolesarova@pobox.sk

The aim of our experiments was to study the regulation of the expression of protein kinase G (PKG), MAP kinase (ERK1,2) and phosphotyrosine (PhT) in porcine ovarian granulosa cells cultured in vitro. Gilts were divided in two groups according to the sexual maturation (sexually immature gilts and sexually mature gilts). By immunocytochemistry we determined, that sexual maturation of gilts is

associated with the expression of PKG, ERK1,2 and PhT. It was observed that dbcAMP (analog cAMP), insulin-like growth factor I (IGF-I) and oxytocin (OT) influenced the expression these kinases during sexual maturation in gilts. These data demonstrate that in pigs PKG, ERK1,2, PhT, cAMP, IGF-I and OT control gonadal functions and sexual maturation.

HODNOTENIE NUTRIČNÉHO STAVU DOSPELÝCH OSÔB S VYUŽITÍM ANTROPOMETRICKÝCH PARAMETROV A STANOVENIA TELESNÉHO TUKU

EVALUATION OF NUTRTITIONAL STATUS IN ADULTS BY ANTHROPOMETRIC PARAMETERS AND BODY FAT MEASUREMENT

Kopčeková, J., Šramková, K., Daniška, J.

Katedra výživy ľudí FAPZ, SPU Nitra

The objective of the study was to evaluate somatometric parameters in 119 adult humans aged 23-65 years (average age 46,69 years). Body composition, particularly body fat content was estimated using bioelectrical impedance analysis. According to body fat content was overweight classificated by 34,4 % of persons (34,8 % of females and 33,4 % of men) and obesity by 30,3 % of persons (28,3 % of females and 37,0 % of men). The body composition classification according to body mass index was by 38,9 % probands different compared with evaluation „overweight“ or „obesity“ according to body fat content.

APOPTÓZA AKO MARKER KVALITY A ŽIVOTASCHOPNOSTI KRÁLIČÍCH EMBRYÍ PO MIKROMANIPULÁCIÁCH

APOPTOSIS AS A QUALITY AND VIABILITY MARKER OF RABBIT EMBRYOS AFTER MICROMANIPULATION

Kordovánová, D.[1], Makarevič, A.[2], Chrenek, P. [2]

[1]*Univerzita Konštanína Filozofa Nitra, Fakulta prírodných vied*
[2]*Výskumný ústav živočíšnej výroby, Hlohovecká 2, 94992 Nitra*

This study was designed to examine the effects of microinjection on quality and viability of rabbit embryos. The aim of it was to determinate if programmed cell death – apoptosis (using two parameters: TUNEL-positive cells per embryo and TUNEL –index) should by a good marker to evaluate embryos for selection and transfer to uterus. Microinjection of foreign gene resulted in decreased developmental rate and increased

frequency of apoptotic cells to compare with control group. Therefore, we concluded, that TUNEL –index can be a suitable parameter.

ZMENY AKTIVITY CHYMOTRYPSÍNU A TRYPSÍNU V TRUSE JAPONSKÝCH PREPELÍC PO APLIKÁCII CD A CR

CHANGE OF ACTIVITIES CHYMOTRYPSIN AND TRYPSIN IN DROPPINGS OF JAPANESE QUAILS AFTER CD AND CR APPLICATION

Korének, M., Koréneková, B., Skalická M., Naď, P.

Universita veterinárskeho lekárstva, Košice

The effect of Cd on the activity of chymotrypsin (ACHT) and trypsin (AT) in droppings of Japanese quail was observed. The group 1 was control. In the 2. group, Cd was added daily in dose 0.12 mg Cd/day and animal and in group 3, Cd+Cr (0.12 mg Cd and 0.12 mg Cr) was added. ACHT and AT were photometric determined on 35. and 58 day of experiment. In group 2, Cd decreased ACHT and AT in the middle of the study (135.3; 116 U/g) as well as in the end of experiment (132.1;201.3 U/g) in comparison to control. In group 3, Cd+Cr increased ACHT and AT in the middle of the study (213.9;147.9 U/g) as well as in the end of experiment (270.5;210.7 U/g).

SLEDOVANIE ÚČINKU SELÉNU U VAJEC JAPONSKÝCH PREPELÍC PO APLIKÁCII KADMIA

OBSERVATION EFFECT OF SELENIUM AFTER CADMIUM APPLICATION IN JAPANESE QUAIL EGGS

Koréneková, B., Šály, J. , Skalická, M. Naď, P., Buleca, V., *Soták, M.

*Katedra výživy, dietetiky a chovu zvierat, Univerzita veterinárskeho lekárstva, Košice, *Prešovská univerzita, Prešov*

The influence of Se and Cd was observed on quality of Japanese quail eggs. Quails (n=80) were divided into 4 groups with 20 animals per group. Group 1 was the control group. In the group G2, Se was administered daily in dose 0.78 mg of Se for one quail. In the group G3, combination of Se and Cd, in dose 0.12 mg of Cd and 0.78 mg of Se, and G4, 0.12 mg of Cd was added. The weight of eggs, solidity and thickness of eggshell were determined. Se (G2) increased weight of eggs, strength as well as thickness of eggshells in the end of experiment. After addition of Se+Cd in group G3 were found lower values in comparison to G2. Cd

treatment (G4) markedly decreased weight of eggs strength of eggshell and thickness of eggshell.

PROTEÍNY AKÚTNEJ FÁZY U ZVIERAT

ACUTE PHASE PROTEINS IN ANIMALS

Kováč G., Vargová M., Popelková M.

II.Interná klinika, Univerzita veterinárskeho lekárstva ,Komenského 73, 041 51 Košice

The objective determination of animal health is important among other things due to the increasing focus of farmers, consumers and politicians on the welfare of animals. As non-specific markers of inflammation, Acute phase proteins testing is a tool for studing pathogenesis, the spread of infectious diseases or the efficancy of pharmaceuticals and vaccines. The measurement of acute phase proteins might also prove useful in defining the objective health status of an animal or a herd. The present definition of health as the freedom of certain specified disease agents does not guarantee healthy animals.

PROBIOTIKÁ: ICH FUNKCIE A VLASTNOSTI

PROBIOTICS: THEIR FUNCTION AND CHARACTERS

Kramárová, M., Kolesárová, A., Kováčik, J., Massányi, P., Lukáč, N.

Katedra fyziológie živočíchov, Slovenská poľnohospodárska univerzita v Nitre

The use of probiotics presents a new, more ecological way. The aim of this work was to provide information about influence and using probiotics preparations. Probiotics are being increasingly studied for their ability to enhance host resistance and recovery from infection. Probiotics are defined as the microbial food supplements, which beneficially affect the host by improving its intestinal microbial balance. Probiotics are the health enhancing functional food ingredients used therapeutically to prevent diarrhoea, improve lactose tolerance and modulate immunity. They may also have potential to prevent cancer and lower serum cholesterol levels Bacterial species that have traditionally been regarded as safe are used in probiotics, the main strains used include lactic acid bacteria and bifidobacteria that inhabit the intestinal tracts of human and animals.

Probiotics can be used as innovative tools to alleviate intestinal inflammation, normalize gut mucosal dysfunction, and down-regulate hypersensitivity reactions. Probiotics open new therapeutic modalities in a number of diseases and it may be expected that their importance will increase with growing knowledge and experience. The use of probiotic can help fortify natural resistance.

VPLYV MATERNÁLNEHO TESTOSTERÓNU NA SOCIÁLNE A EXPLORAČNÉ SPRÁVANIE MLÁĎAT LABORATÓRNEHO POTKANA

INFLUENCE OF MATERNAL TESTOSTERONE ON SOCIAL AND EXPLORATION BEHAVIOUR OF LABORATORY RAT PUPS

Kršková, L., Talarovičová, A.

Univerzita Komenského v Bratislave, Prírodovedecká fakulta, Katedra živočíšnej fyziológie a etológie, Mlynská dolina B-2, 842 15 Bratislava krskova@fns.uniba.sk

The purpose of the present study was to characterize the influence of maternal testosterone (pregnant Wistar rat females administered 2.5 mg of testosteroni isobutyras on gestation day 14) on offsprings (1-23 days old pups) postnatal social and exploration behaviour. Social behaviour was studied with direct observation method, exploration with open field test. Behavioural events were compared between control and testosterone group. Increased maternal testosterone influenced: character of vocalization, decreased stay underneath mother, increased competition and crawling in the nest; stimulated especially male postnatal exploration behaviour how is ambulation, sniffing, sniffing the air, urination, but reduced vocalization.

VPLYV VÍRUSOV (BHV-1 A BVDV) NA VITALITU VČASNÝCH BOVINNÝCH EMBRYÍ IN VITRO

INFLUENCE OF VIRUSES (BHV-1 AND BVDV) ON THE VITALITY OF EARLY BOVINE EMBRYOS IN VITRO

Kubovičová, E., Pivko, J., Makarevič, A., Grafenau, P., Ríha, Ľ., Parkányi, V.

Ústav genetiky a reprodukcie hospodárskych zvierat, VÚŽV Nitra, Slovensko

Bovine embryos collected embryos from seronegative cows and heiferes were exposed in vitro to herpesvirus – 1 (BHV –1) and bovine viral diarrhoea virus (BVDV) for 60 minute. The results showed, that early bovine embryos can be infected with herpesvirus –1 and such infection is rapidly embryocidal. Within 24 hours of exposure embryos collapsed and

became grossly degenerated. Direct immunofluorescent method by the use of polyspecific anti IBR/IPV FITC conjugate detected an adherence and penetration of virus through the *zona pellucida* and its accumulation mainly in the cells of trophoblast. Titration of infectivity associated with embryos immediately after exposure and 24 h later indicated a mean increase in virus titer between 10-50 fold. Bovine embryos (with or without zona pellucida) exposed to BVDV showed positive signal on the fluorescent conjugate BVDV.

SPOROTVORNÉ BAKTÉRIE AKO POTENCIÁLNE RIZIKO KONTAMINÁCIE POTRAVÍN

SPOREFORMING BACTERIA AS POTENTIAL RISK FOR CONTAMINATION OF FOOD

Link, R., Kováč, G., Novotný, J.

Univerzita veterinárskeho lekárstva, II. Interná klinika, Komenského 73, Košice

Some species of genus Bacillus are known as agents of food poisoning, among them especially Bacillus cereus. It produce one emetic toxin and three different enterotoxins, one of them is haemolysin. But also other species can produce toxins, e.g. Bacillus mojavensis, fusiformis, pumilus, subtilis, megaterium. As bacteria of genus Bacillus produce endospores, they are resistant to hostile physical and chemical conditions. In addition they have a wide range of physiological adaptations and so they are able to survive process of preparation of food.

VPLYV BACILLUS LICHENIFORMIS NA FYZIOLÓGIU TELIAT PRI DIARHOICKOM SYNDRÓME

EFFECT OF BACILLUS LICHENIFORMIS ON PHYSIOLOGY OF CALVES WITH DIARRHOEA

Link, R., Kováč, G.

II. Interná klinika, Univerzita veterinárskeho lekárstva, Košice, Komenského 73

Bacillus licheniformis was added to milk replacer fed to calves with early diarrhoeic syndrome. The calves were fed culture of *Bacillus licheniformis* at the dose of 3.10^7 for ten days, with daily check of health

status. Blood was collected before (0) and then on day seven and fourteen. We evaluated following indices during experiment: serum levels of Na, K and parameters of immune profil (phagocytic activity of leukocytes, reduction of tetrasolium, serum levels of total immunoglobulins), blood pH, base excess-BE, standard bicarbonate- SB, packed cell volume-PCV, white blood cells. In the present study *Bacillus licheniformis* had positive effect on the occurrence of diarrhoea in treated calves.

ZLEPŠENIE UTILIZÁCIE KRMIVA V CHOVE OŠÍPANÝCH POMOCOU PROBIOTICKÝCH PREPARÁTOV

IMPROVEMENT OF FEED UTILIZATION IN PIGS BY PROBIOTIC PREPARATION

Link, R., Kováč, G., Húska, M.

II. Interná klinika, UVL Košice, Komenského 73, 041 81

The aim of our work was to evaluate the efficacy of probiotic preparation BioPlus 2B, which contain Bacillus licheniformis and Bacillus subtilis, on value of some indices of protein and energetic profile in blood of piglets. In the experiment were used 18 weaned pigs of the age 42 days divided into two groups, The first group was the experimental group and the second served as a control group. BioPlus 2B had not significant effect on value of parameters of protein profile but we found out significant differences in levels of cholesterol and total lipids between groups on day 14 of the experiment

VZŤAH MEDZI SÉROVÝMI HLADINAMI ANTIOXIDAČNÝCH VITAMÍNOV A IMUNOGLOBULÍNOV NEONATÁLNYCH TELIAT

RELATIONSHIP BETWEEN ANTIOXIDANTS VITAMINS AND IMMUNOGLOBULINS IN THE NEONATAL CALVES BLOOD

Lukáč, N[1]., Bárdos, L[2]., Massányi, P[1]., Brezina, B[1]., Kramárová, M[1].

[1]*Slovak Agriculture University, Tr. A. Hlinku 2, 949 76 Nitra, Slovak Republic, E-mail: norbert.lukac@uniag.sk*

[2]*Szent Istvan University, 2103 Gödöllő, Hungary, E-mail: lbardos@fau.gau.hu.*

Determinate of antioxidants vitamins (retinol - ROL, retinyl palmitát - RP, β-carotene - BC, α-tocopherol - AT) level and immunoglobulins (IgG1, IgG2, IgM, IgA) in calves (n = 15) Holstein-Friesan breed. Calves from first group (A=5) after born ago suckling of

colostrum been was taken blood, other calf separation by by two group (B, n=5; C, n=5) by after colostrum suckling by 1 hour of live with one litre colostrum and followinge after 4 and 10 hour of living was taken blood.
Between concentration of retinoid and vitamin - E in claves blood and cows blood no significant difference. The plasma BC levels and retinoids of differed significantly (p=0.001) from each other. Determinate high demonstrativeness between RP before colostrums suckling and immunoglobulins in the all classes it the same time (p=0.001). Detected high correlation between of Rol and IgG1 level (r=0,91), RP and IgG2 level (r=0,92) and also RP and IgA level ((r=0,77).

ÚČINOK KOBALTU NA ŠTRUKTÚRU A FUNKCIU SEMENNÍKA U CHRČKA

THE EFFECT OF COBALT ON HAMSTER TESTICULAR STRUCTURE AND FUCTION

Lukáč, N., Massányi, P., Kramárová, M., Toman, R., Kolesárová, A.

Katedra fyziológie živočíchov, FBP, SPU v Nitre

In this study the effect of cobalt on the structure and function of hamster testis was studied.
The highest relative volume of germinal epithelium was detected in control group (72.48 ± 2.91%). In experimental groups (administration of 5, 10 and 20 mg of $CoCl_2$ per kg body weight) decrease of germinal epithelium was detected with significant difference in group B and C in comparison with control. Relative volume of interstitium and lumen was significantly higher in groups after cobalt administration.
In the evaluation of the diameter of seminiferous tubules significant increase of this parameter in experimental groups was found. The lumen of the tubule was significantly increased in group B, but in all lead exposed testes the tendency of increased luminization was detected. In all experimental groups also the number of nuclei was decreased. All data suggest that cobalt doses administered in this study have negative effect on germinal epithelium – main function and structural part of testis.

This study was supported by State program Food Quality and Safety (18b/02-Biological Aspects of Increasing Quality of Animal Origin Foodstuff) and VEGA Scientific Grant 1/2417/05 from the Ministry of Education of Slovak Republic.

SLEDOVANIE A POROVNÁVANIE TRANSPORTU NIEKTORÝCH MASTNÝCH KYSELÍN CEZ ČREVNÝ EPITEL OVIEC

INVESTIGATION AND COMPARISON OF TRANSPORT OF SOME FATTY ACIDS ACROSS CAECUM EPITHELIUM IN SHEEP

Maková, Z.

Ústav patologickej fyziológie, Univerzita veterinárskeho lekárstva, Komenského 73, 041 81 Košice

The influence of oestradiol on propionate (15 and 30 mmol.l^{-1} of Thyrode'solution) transport across isolated sheep caecum epithelium in vitro from mucosal to serosal side was investigated. The equipment constructed in our laboratory for studing fluxies of acids was used. Propionate absorption in 30 mmol level was higher than in 15 mmol level. Adition of oestradiol to propionate (30 mmol level) increased its absorption when propionate was combined with acetate in the solution. Oestradiol might have effected the morphological properties of the epithelium could well have been the reason for our finding.

KVALITATÍVNE A KVANTITATÍVNE HODNOTENIE TERCIÁRNYCH FOLIKULOV VAJEČNÍKOV MODERNÝMI ZOBRAZOVACÍMI METÓDAMI A HORMONÁLNYMI PARAMETRAMI

QUALITATIVE AND QUANTITATIVE EVALUATION OF TERTIARY FOLLICLES IN OVARIES BY MODERN PICTURAL METHODS AND HORMONAL PARAMETERS

Maraček, I., Halagan, J., Danko, J.

Katedra normálnej anatómie, histológie a fyziológie, Univerzita veterinárskeho lekárstva, Košice.

This paper is focused on evaluation and monitoring of surface tertiary follicles based on simultaneous use of laparotomy with digital photo documentary evidence, ultrasound investigation and determination of the oestradiol-17β and progesterone in the follicular fluid of the largest follicles from the ovaries of Slovak white goats. It can be concluded from performed observations that the results point to the development of folliculogenesis after lambing in lamb-suckling period also after lamb-weaning and oestrus induction during galactopoesis in milking period of the improved Wallachian breed ewes and after superovulation treatment of the white goats.

DAPA AKO MARKER PRE HODNOTENIE SYNTETICKEJ KAPACITY BACHOROVEJ MIKROFLÓRY

DAPA AS MARKER FOR QUANTIFYING MICROBIAL SYNTETIC CAPACITY OF THE RUMEN

Maskaľová I., Vajda V.,

Univerzita veterinárskeho lekárstva, Košice

In two groups of dairy cows during the puerperal period we have analyzed the level of VFA and pH – marker of the rumen fermentation of carbohydrates, NH_3 – marker of rumen degradation of protein and values of DAPA amino acids of the cell walls - marker of the microbial protein synthesis in the rumen content. The results of the examination confirmed the direct linear regression (r 0.772) between the values of VFA and DAPA and limiting influences of fermentable energy for the formation of bacterial biomass. The deficit value of NH_3 (x 10.14 ± 2.28 mg/100ml) confirmed the highest correlation between NH_3 and DAPA (r = 0.837) the influence of the deficit of nitrogen to synthesis the microbial protein in the rumen.

ALTERÁCIE ŠTRUKTÚRY OBLIČIEK MYŠÍ PO EXPERIMENTÁLNOM PODANÍ OLOVA

STRUCTURAL ALTERATIONS OF MICE KIDNEYS AFTER A LEAD ADMINISTRATION

Massányi, P., Lukáč, N., Kováčik, J., Toman, R., Kramárová, M., Kolesárová, A.

Slovenská poľnohospodárska univerzita v Nitre

In this study analysis and potential changes in the mice kidney are reported. Animal we intraperitoneally injected with experimental dose of lead ($PbCl_2$) and after 48 hours were killed. We determined that experimental dose of lead markedly influenced the relative volume of kidney corpuscles and relative volume kidney of tubules ($P<.01$). The diameter of kidney corpuscles was in group A (experimental dose 5 mg $PbCl_2$ per 1 kg on body weight) 76.36 μm. Height of tubules epithelium was lower in experimental groups in comparison with control group. Number of glomeruli evaluated per constant area was significant higher ($P<.01$) in group A and B (experimental dose $PbCl_2$ 10 mg per kg of body weight) that in control group. Results of this experiment suggest that the lead administrated caused expressive effect on the kidney structure. Lead mainly affected the structure of nephritic system which can cause eventual nephritic dysfunction and failure in urea secretion.

This study was supported by State program Food Quality and Safety (18b/02-Biological Aspects of Increasing Quality of Animal Origin Foodstuff) and VEGA Scientific Grant 1/2417/05 from the Ministry of Education of Slovak Republic.

VPLYV VYBRANÝCH IMPLEMENTOROV NA ULTRAŠTRUKTURÁLNU KATEGORIZÁCIU SPERMIÍ BARANA

EFFECTS OF CHOSEN IMPLEMENTORS ON THE ULTRASTRUCTURAL CATEGORIZATION OF RAM SPERM

Matejašáková, E., Pivko, J., Makarevič, A.V., Kubovičová, E., Sirotkin, A.V., Riha, Ľ.

Katedra zoológie a antropológie, Univerzita Konštantína Filozofa v Nitre
Ústav genetiky a reprodukcie hospodárskych zvierat, VÚŽV Nitra

In our study we tested effects of chosen implementors on the ultrastructural state of sperm´s heads: its membranes and acrosomes. Fresh ram sperm diluted in Biladyl was divided into five groups according to added implementor (IGF-I, EGF, Caffeine and Glutathione). Sperm sample without implementor was served as a control. Totally 300 sperm's heads were classified as belonging to four categories according to state of capacitation. We found out that growth factors (IGF-I and EGF)and Glutathione increased membrane's stability and fertilizing capacity of ram sperm. Caffeine although significantly increased sperm activity, but caused swelling of acrosomes and vesiculization of sperm's membranes.

KORTIZOL, MALONDIALDEHYD (TBARS) A ANTIOXIDAČNÁ KAPACITA PLAZMY U DOJNÍC VYSTAVENÝCH OPERAČNÉMU STRESU

THE INFLUENCE OF SURGICAL STRESS ON THE CORTISOL, MALONDIALDEHYDE, AND PLASMA ANTIOXIDATIVE CAPACITY IN DAIRY COWS

[1]Mudroň P., [2]Rehage J.

[1]2nd Clinical Department of Internal Diseases, The University of Veterinary Medicine, Kosice, The Slovak Republic
[2]Clinic for Cattle, School of Veterinary Medicine, Hanover, Germany

The present investigation was undertaken to study the effects of surgical stress on thiobarbituric acid reactive substances (TBARS) and ferric reducing ability of plasma (FRAP) in dairy cows. Ten Holstein-Frisian dairy cows, mean age 5.26 years, admitted for treatment of left abomasal displacement (omentopexy), were used in our study. Blood

samples were drawn from the jugular vein prior to surgery, immediately and then 15, 30, 60, 90 minutes, and 2, 5, 10, and 24 hours after reposition of abomasum. Surgical stress resulted in a significant increase in plasma cortisol concentrations within five hours of surgery ($p<0.05$). Similarly, surgery transiently enhanced the plasma levels of TBARS ($p<0.05$). In contrast, antioxidative capacity (FRAP) showed a tendency for slight decline during surgery, followed by steady rise to the pre-surgical values. In conclusion, these data extend existing knowledge by indicating that stress reaction caused by surgical correction of left displacement of abomasum is associated with a transient increase in lipid peroxidation.

ÚČINOK KADMIA NA VYBRANÉ PARAMETRE BUNKOVEJ IMUNITY U HYDINY

EFFECT OF CADMIUM ON SELECTED PARAMETERS OF CELL IMMUNITY OF POULTRY

Naď P., Pistl J.*, Skalická M., Koréneková, B.

Katedra výživy, dietetiky a chovu zvierat, Ustav mikrobiológie a imunológie, Univerzita veterinárskeho lekárstva, Košice*

The individual influence of Cd and in interaction with Zn and Se was observed on cell immunity of Japanese quail. Quails (n=70) were divided into 7 groups with 10 animals per group. Group K was the control group. In the group Cd1 cadmium was administered in dose 0,12 mg/day/animal. Group Cd2 - cadmium was administered in dose 0,24 mg/day/animal. In Se group selenium was administered daily in dose 0.016 mg for one quail. In Zn group zinc was administered in dose 4,0 mg/day/quail. The group Cd+Zn combination of zinc and cadmium and the group Cd+Se combination of selenium and cadmium were added. In conclusion, we recorded important immuno-depresive effect of Cd as well as protective effect of Zn against negative influence of Cd. In our work we observed protective effect of increased dose of Se, however in lower level in comparison to protective effect of Zn.

POROVNANIE KINETIKY SÉROVÝCH HLADÍN OXYTETRACYKLÍNU U OVIEC PO PRÍPRAVKOCH S PREDĹŽENÝM ÚČINKOM A ICH ZNÁŠANLIVOSŤ

A COMPARISON OF THE SERUM LEVEL KINETIC OF OXYTETRACYCLINE AFTER LONG ACTION PREPARATIONS IN SHEEP AND THEIR TOLERANCE

Neuschl, J., J Nagy, Sokol, J.,, Šály, J.

University of Veterinary Medicine, Košice, Slovak Republic, neuschl@uvm.sk

Blood serum concentrations and biological half-life of oxytetracycline after long action preparations were investigated in adult sheep of the Slovak merino breed. Contemporarily their local tolerance has also been observed. In the first group oxytetracycline was administered in the form of preparation Tetravet 20% L. A. inj. a.u.v. and in the second group in form of preparations Engemycin 10% L.A. inj. a.u.v. Oxytetracycline was administered intramuscularly at a single dose of 20 mg per kg of b.w. The blood serum concentrations of oxytetracycline were studied in the intervals of 1st, 6th, 24th hours and 2nd, 3rd, 4th, 5th, 6th, 7th and 8th days after single administration of preparations.

VPLYV SUBAKÚTNYCH DÁVOK SALINOMYCÍNU SODNÉHO NA HMOTNOSTNÉ PRÍRASTKY A ZDRAVOTNÝ STAV KURČIAT

THE EFFECT OF THE SUBACUTE DOSES SODIUM SALINOMYCIN ON WEIGHT GAINS AND HEALTH IN CHICKS

Neuschl J., Šály J., Korének M., Kremeň J.,Valenčáková,A.

Univerzita veterinárskeho lekárstva, Komenského 73, 041 81 Košice, neuschl@uvm.sk

The study presents information about the toxic action of sodium salinomycin in the anticoccidial preparation Synvertas plv. a.u.v. in chicks under the condicions of subacute intoxication. The experiment was carried out in chicks of the meat hybrid Ross of both sexes, 5 weeks old. The first experimental group of chickens (n = 10) was administered sodium salinomycin at a dose of 5.3 mg/kg b.w. (53 mg of the preparation). The second experimental group (n = 10) was treated with sodium salinomycin at a dose of 10.6 mg/kg b.w. (106 mg of the preparation). The preparation was administered daily by a tube into a crop in the form of water suspension (1:5) at early hours for 7 d. The control group consisting of 6 chickens

received the same volume of water in the same way as the experimental chickens. We observed the overall health state of chickens and looked for possible clinical symptoms of intoxication and determined live body weight.

BIOLOGICKÁ DOSTUPNOSŤ CHLORIDU TETRACYKLÍNIA U OVIEC PO APLIKÁCII VUBIVET C PRM.A.U.V. V MLIEKU A VODE

BIOLOGICAL AVAILABILITY OF CHLORTETRACYCLINIUM CHLORIDE IN SHEEP AFTER ADMINISTRATION OF VUBIVET C PRM.A.U.V. IN MILK AND WATER

Neuschl, J., Nagy, J., Sokol, J., Šály, J.

University of Veterinary Medicine, Košice, Slovak Republic, neuschl@uvm.sk

The standard chlortetracyclinium chloride biological availability and other pharmacokinetic parameters were observed in adult sheep of the Slovak merino breed after administration of Vubivet C prm. in milk and in water. Both groups were given chlortetracyclinium chloride in Vubivet C prm. a.u.v. preparation in a single dose of 20 mg/kg b.w. The preparation was administered per os in 2% suspension by probe. Chlortetracyclinium chloride concentrations in blood serum were determined chromatographically after 1, 3, 6, 12 and 24 hour. After Vubivet C prm. administration in milk and water indicated that biological availability of Vubivet C prm. administered in milk is 33.79 % lower than in water. When the preparation was applied in water the biological half-time of chlortetracyclinium chloride was 8.64 hr and 8.82 hr when applied in milk.

ANTIMIKROSPORIDIÁLNY ÚČINOK ALBENDAZOL U KRÁLIKOV EXPERIMENTÁLNE INFIKOVANÝCH ENCEPHALITOZOON CUNICULI

ANTIMICROSPORIDIAL EFFECT OF ALBENDAZOLE IN RABBITS EXPERIMENTALLY INFECTED BY ENCEPHALITOZOON CUNICULI

Neuschl, J., Čonková, E.,Čellárová,E., Šály,J.

University of Veterinary Medicine, Košice, the Slovak Republic, neuschl@uvm.sk

In adult rabbits of the New Zealand white breed, female sex, development of experimentally induced encephalitozoonosis (Encephalitozoon cuniculi) has been observed after the therapeutic affect by albendazole compared with the positive and negative control groups. The

negative control group were not infected by microsporidia. The positive control group were infected by Encephalitozoon cuniculi microsporidia with a single intraperitoneal dose of 5.10^7. ml^{-1}.The experimental group after inoculaction with Encephalitozoon cuniculi in the same dose and way as in the positive control group, albendazole was subsequently applied. The experimental group, albendazole was applied in the form of Aldifal 2.5% susp. in a dose 5 mg/kg of b. w. per os with tube. Albendazole has been administered to animals from the experimental group from day 7 after inoculation by Encephalitozoon cuniculi, twice a week for 11 weeks and overall this was applied 21 times. The titre of antibodies was determined by the IFAT method.

VPLYV VYBRANÝCH METABOLICKÝCH PARAMETROV V KRVNOM SÉRE DONORIEK KRÁV NA ZISK A KVALITU EMBRYÍ

THE INFLUENCE OF METABOLIC PARAMETERS IN BLOOD SERUM OF DONORS COWS IN RELATION TO EFFECT AND QUALITY OF EMBRYOS

Novotný F., Macák V., Hajurka J., Valocký I., Ćernota S.

Univerzita veterinárskeho lekárstva, Klinika pôrodníctva, gynekológie a andrológie, Komenského 73, 041 81 Košice, Slovenská republika

The study focused on observation of influence of serum cholesterol, urea and total protein before and after superovulation on the yield and quality of embryos in donors cows. Positive correlation was found between the level of cholesterol and superovulatory response (r=0.74), production of embryos (r=0.65) and transferable embruos (0.33). Levels of urea were in negative correlation to the superovulatory response (r= -0.32), to flushed embryos (r=-0. 60) and transferable embryos (r=-0.62). The influence of total proteins in the blood serum of donors cows on effectivity of embryo transfer was not proved in our experiments.

BIOPLEXY STOPOVÝCH PRVKOV A ICH VPLYV NA MINERÁLNY METABOLIZMUS OŠÍPANÝCH

BIOPLEXES TRACE ELEMENTS AND THEIR INFLUENCE ON MINERAL METABOLISM OF PIGS

Novotný, J., Kováč, G., Link, R., Húska, M.

Univerzita veterinárskeho lekárstva Košice, Komenského 73, SR

A four-week experiment was carried out on piglets (experimental group – n = 10 and control group – n = 10) to observe the effects of bioplexes of

Fe, Cu, Zn, Mn, and Se on the micromineral profile of blood serum and tissue (liver, kidneys, loin muscles, and bones). Organic trace elements supplementation resulted in a significant increase in blood serum concentrations of Fe ($P < 0.01$), Cu ($P < 0.05 – 0.001$), Zn ($P < 0.05 – 0.01$), Mn ($P < 0.01$); concentration of Fe in liver ($P < 0.05$); Se in kidneys ($P < 0.01$), bones ($P < 0.05$); and Mn and Zn in bones ($P < 0.01$).

VPLYV SUPEROVULÁCIE NA KATECHOLAMINERGICKÝ SYSTÉM A AKTIVITU MONOAMINOOXIDÁZY HYPOFÝZY OVIEC

THE EFECT OF SUPEROVULATION ON CATECHOLAMINERGIC SYSTEM AND ACTIVITY OF MONOAMINEOXIDASE OF PITUITARY GLAND OF SHEEPS

Pástorová, B., Maraček, I., Staníková, A.

Katedra normálnej anatómie, histológie a fyziológie, Ústav fyziológie, UVL Košice

The hormonal effect of stimulation on catecholamine levels and activity of monoamineoxidase in the hypophysis of ewes in the estric period was studied by radioenzymatic method. The oestrous of ewes was synchronized with Ageline sponges (20µg chlorsuperlutin). After synchronization we induced superovulation by means of 2000 IU serum gonadotrophin. The results indicate that hormonal serum gonadotrophin stimulation increases significantly ($p<0,01$) pituitary dopamine and epinephrine levels in ewes. Monoaminooxidase activity in the hypophysis decreased significantly to almost half in comparism to control values.

DYNAMIKA ZMĚN UKAZATELŮ METABOLICKÉHO PROFILU KREVNÍ PLAZMY NOSNIC V PRŮBĚHU SNÁŠKOVÉHO CYKLU

CHANGES OF METABOLIC PROFILE PARAMETERS IN LAYING HENS DURING THE LAYING PERIOD

Pavlík, A.

Ústav morfologie, fyziologie a genetiky zvířat, Mendelova zemědělská a lesnická univerzita v Brně, e-mail: pavlik@mendelu.cz

The aim of the study was to compare some biochemical parameters of blood plasma (total protein, glucose, uric acid, alkaline phosphatase and cholesterol) in laying hens during laying period. In experiment, 36 ISA Brown laying hens were used. Hens were divided into 3 groups,

12 birds per cage. Each group was housed in 3 different systems. The blood was sampled from 22 week to 75 week of age. So far determined parameters of biochemical profile in laying hens were in some cases significant different, but they were in a physiological range. No distinct effect of housing system on the biochemical parameters was found.

ÚČASŤ TRANSKRIPČNÉHO FAKTORA STAT-1 V REGULÁCII FUNKCIÍ OVARIÁLNYCH BUNIEK OŠÍPANÝCH

INVOLVEMENT OF TRANSCRIPTION FACTOR STAT-1 IN REGULATION OF THE FUNCTIONS PORCINE OVARIAN CELLS

Pavlová[1], S., Sirotkin[1,2], A. V., Benčo[2], A., Vašíček[1], D., Tandlmajerová[2], A.

[1]Výskumný ústav živočíšnej výroby, Hlohovská 2, 949 92 Nitra
[2]Univerzita Konštantína Filozofa, Tr. A.Hlinku 1, 949 01Nitra

The aim of our work was to examine the involvement of transcription factor STAT-1 and hormones ghrelin and leptin in the regulation of ovarian functions: in proliferation, apoptosis, secretory activity and expression of CREB. It was observed, that the transfection of cultured porcine ovarian granulosa cells with gene construct encoding STAT-1 stimulated ocurrence of apoptosis, proliferation and inhibited the release of progesterone P_4. Furthermore, leptin addition increased the expression of STAT-1 whilst transfection of cells with STAT-1 gene construct modified the response of cell proliferation, apoptosis and secretory activity of leptin and ghrelin. These results suggest the involvement of STAT-1, ghrelin and leptin in control of ovarian cell function as well as the involvement of STAT-1 in mediating leptin and ghrelin action.

VPLYV IGF-I NA DOZRIEVANIE OOCYTOV A VÝVOJ BOVINNÝCH EMBRYÍ IN VITRO

THE INFLUENCE OF IGF-I ON OOCYTE MATURATION AND BOVINE EMBRYO DEVELOPMENT IN VITRO

Popelková[1], M. Makarevič[3], A., Pivko[3], J., Kačmárik[2], M., Kováč[1], G., Húska[1], M.

[1]II. interná klinika, Univerzita veterinárskeho lekárstva, Košice, [2]Klinika pôrodníctva, gynekológie a andrológie, Univerzita veterinárskeho lekárstva, Košice, [3]Ústav genetiky a reprodukcie HZ, Výskumný ústav živočíšnej výroby, Nitra

The present study demonstrates the effect of insulin-like growth factor I (IGF-I) on bovine oocyte maturation and subsequent embryo

development. The addition of 100 ng/ml IGF-I to maturation medium significantly enhanced oocyte nuclear maturation, compared with control group (93.5 vs 82.4 %, $P < 0.05$). IGF-I (100ng/ml) added to either IVM or IVM/IVC media significantly increased cleavage rate of bovine embryos (78.8 and 83.8 %, resp.) compared with control group (68.2 %). Positive cumulative effect of IGF-I added to IVM/IVC media was observed by higher D7 blastocysts formation (27.4 vs 15.3 %, $P < 0.05$). We can conclude that the supplementation of embryo media with IGF-I promotes oocyte nuclear maturation, embryo cleavage and D7 blastocyst rate.

VPLYV SEZÓNY NA PRODUKCIU LH A TESTOSTERÓNU U INTAKTNÉHO A KASTROVANÉHO JELEŇA KARPATSKÉHO (*CERVUS ELAPHUS*).

EFFECTS OF SEASON ON THE SECRETION OF LH AND TESTOSTERONE IN INTACT AND CASTRATED RED DEER STAGS (*CERVUS ELAPHUS*)

Pošivák J.[1], Lazar G.[1],Valocký I.[1], Horňáková Ľ.[1], Čurlik J.[2]

[1]Department of Obstetrics, Gynecology and Andrology, UVM Košice, Slovakai, [2]Dept. of Parazitol., Diseases of Fish, Bees and Game Animals, UVM Košice, Slovakia

At 2-4 monthly intervals during the year blood samples were collected every 15 min for 6h from 2 intact and 3 castrated red deer stags to study the relationship between season and the secretion of LH and testosterone. In the intact stags plasma LH and testosterone concentrations changed during the year; the LH levels were maximal in August during the phase of testicular redevelopment, while the testosterone levels were maximal from September to November coinciding with the time of peak testicular activity and the mating season. The castrated stags had higher plasma levels of LH than the intact stags at all times of the year, and there was no clear seasonal cycle in LH levels in these animals.

METODICKÝ POSTUP ZMRAZOVANIA SEMENA BARANOV V PLÁVAJÚCOM ZÁVESNOM ZMRAZOVAČI

METHOD OF FREEZING OF RAM SEMEN IN THE SWIMMING HANG UP FREEZER

Riha, Ľ., Apolen, D., Pivko, J., Grafenau, P., Kubovičová, E.

Ústav genetiky a reprodukcie hospodárskych zvierat, VÚŽV Nitra.
Ústav šľachtenia oviec a kôz, Trenčianska Teplá

Many factors influence survivability of sperms after deep freezing. One of the most important principle during semen conservation is creation of such environment, which comes up close to the natural conditions created by seminal plasma. For achieving this intention, available diluents which protect sufficient number of fertile sperms are necessary. By the use of the new methods, diluents on the base of Tris with addition of egg yolk are prepared and are widely used in various animal species, including rams.

METABOLICKÝ PROFILOVÝ TEST A JEHO VÝZNAM V CHOVE DOJNÍC

METABOLIC PROFILE TEST AND ITS VALUE IN REARING OF DAIRY CATTLE

Schneidgenová, M.

Department of Animal Physiology, Slovak Agricultural University in Nitra

Metabolic profile test is significant method in detection of subclinical stage of metabolic disorders. It allows control of health and good physiological status of animal. For better diagnostic is necessary to select fitting profile (proteins, energetic, mineral, vitamin profiles...). It is also very important to choose representative sample of animal in order to have significant results about all herd and to avoid metabolic diseases. In conclusion, metabolic profile test is useful help for farmers and breeders to keep animals in good condition.

NOVÝ REGULÁTOR OVARIÁLNYCH FUNKCIÍ OŠÍPANÝCH – HORMÓN THROMBOPOIETÍN

NEW REGULATOR OF OVARY FUNCTION OF PIGS –HORMONE TROMBOPOIETINE

Sirotkin, A. V., Sanislo, P., Schaeffer[2], H.-J., Florkovičová, I., Kotwica[3], J., Hetényi, L.

[1]Výskumný ústav živočíšnej výroby, 949 92 Nitra, Slovensko; Research Institute of Animal Production, 949 92 Nitra, Slovakia,
[2]Universitäts-Frauenklinik, 50931 Köln, Germany
[3]Institute of Animal Production and Food Research, 10-718 Olsztyn-Kortowo, Poland

The effect of TPO, with and without blockers of protein kinase A (PKA, KT5720) and mitogen activated protein kinase (MAPK, PD98059), was investigated using cultured porcine ovarian cells. TPO stimulated proliferation (expression of PCNA), apoptosis (bax), accumulation of protein kinases (PKA, MAPK, TK, cdc2/p34) and transcription factor CREB, but inhibited secretion of A, E, TGF and IGFBP-3 and stimulated P, OT, inhibins and IGF-I output. PKA and MAPK blocker were able to prevent or reverse these TPO effects. These results offer the first evidence that TPO is a potent regulator of ovarian cell functions, including proliferation, apoptosis, the secretion of steroids, peptides, growth factors and binding proteins, and the expression of some intracellular messengers. They also demonstrate the importance of PKA and MAPK in mediating the effects of TPO on ovarian cells.

VPLYV ZINKU A KADMIA NA ICH DISTRIBÚCIU VO VAJCIACH JAPONSKÝCH PREPELÍC

INFLUENCE OF ZINC AND CADMIUM ON DISTRIBUTION IN JAPANESE QUAIL EGGS

Skalická, M., Koréneková, B., Naď, P.,*Dolinská, S., *Kušnírová, E.

*Katedra výživy,dietetiky a chovu zvierat, Univerzita veterinárskeho lekárstva, Košice, *Prešovská univerzita, Prešov*

The effect of zinc and cadmium on quality of Japanese quail eggs was investigated. Japanese quails (n=80) were divided into 3 groups. Each group consisted of 20 birds. Group 1 was the control group. In the experimental group G2, 0.12mg of Cd for one quail was added. In experimental group 3, Zn was administered daily in form of water solution in dose 12 mg of Zn for one quail. In group G4, combination of Cd and Zn,

in dose 0.12mg of Cd and 12 mg of Zn. The levels of Zn and Cd in eggs were evaluate with method AAS. It was observed protective effect of Zn against of Cd long-term application in Japanese quail.

VPLYV BIELKOVINOVÝCH FRAKCIÍ BOVINNEJ AMNIÓNOVEJ TEKUTINY NA PROLIFERÁCIU LYMFOCYTOV PERIFÉRNEJ KRVI

INFLUENCE OF BOVINE AMNIOTIC FLUID POLYPEPTIDE FRACTIONS ON PROLIFERATION OF PERIPHERAL BLOOD LYMPHOCYTES

Sobeková, A., Kostecká, Z., Blahovec, J.

Katedra chémie, biológie a biochémie, Univerzita veterinárskeho lekárstva, Košice

Polypeptide substances of amniotic fluid influence the cell proliferation and differentiation of developing animal embryo. The aim of this study was to determine the mitogenic effect of some peptide components of bovine amniotic fluid on bovine peripheral blood lymphocytes using MTT colorimetric assay. We have observed inhibition of ConA-induced lymphocyte proliferation by Peak I of amniotic fluid. On the other hand, peptides of Peak II have activated proliferation of indicator cells. The proliferation of peripheral lymphocytes was not significantly changed after the addition of natural bovine amniotic fluid.

ORGANIZAČNÉ, HYGIENICKÉ A VETERINÁRNE KRITÉRIÁ NA ČINNOSŤ ZARIADENÍ PRE LABORATÓRNE ZVIERATÁ

ORGANIZATION, HYGIENIC AND VETERINARY CRITERIAS FOR THE PROCEEDING OF EQUIPMENTS FOR THE LABORATORY ANIMALS

Sokol, J.[1], Hanzel, S.[1], Golian, J.[2], Rajský, D.[3], Pavličová, S.[2]

[1] Krajská veterinárna a potravinová správa Trnava, [2] Slovenská poľnohospodárska univerzita Nitra, [3] Regionálna veterinárna a potravinová správa Dunajská Streda

The methodic technique of control comfortable with the legal norms of European Corporation and EU (86/609/EHS and 2003/65/ES) and Slovak Republic (regulations of government of the SR č. 289/2003 Z. z. and 489/2003 Z. z.) were processed. Classified object of methodic technique for the keeping of laboratory animals and for the practice of experiments to animals were verified. Comfortable with actual legislation we were processed technique of editing of paper about compliance of requirements to keeping and location of experimental animals.

ZMENY KVALITATÍVNYCH UKAZOVATEĽOV BRAVČOVÉHO MÄSA POČAS DLHODOBÉHO MRAZIARENSKÉHO USKLADNENIA

THE CHANGES OF NUTRITIONAL CHARACTERISTICS OF PORK MEAT DURING THE LONG PERIOD OF FREEZING STORAGE

Sopková, D.

Ústav fyziológie, Univerzita veterinárskeho lekárstva, 041 81 Košice, SR

Freezing is one of the most cautious ways of meat preservation. It enables long-term storage without application of chemical additives and significant side-effect. However, criteria of frozen meat have not been unambigously determined. The changes in the nutritional characteristics of pork meat (*m. longissimus dorsi*) of normal quality, and that of altered quality (PSE: pale, soft, exudative) were observed in dependence on the length of freezing storage. The aim was to deepen and to make objective the knowledge on the effect of freezing process on the parameters of quality of pork meat. During freezing storage, the differences in the contents of total proteins and aminoacids between the PSE and control meat were eliminated, the values of valine, lysine, leucine, custine, histidine and arginine significantly decreased, probably in the form of free aminoacids due to the elevated losses of meat juice after defreezing.

ANALÝZA PRODUKTOV DEGRADÁCIE LIPIDOV V TUKOVOM TKANIVE OŠÍPANÝCH POČAS MRAZIARENSKÉHO USKLADNENIA

THE ANALYSIS OF PRODUCTS OF HYDROLYTIC AND OXIDATIVE DEGRADATION OF ADIPOSE TISSUE

Sopková D., Staníková, A., Maraček, I.

Ústav fyziológie, Univerzita veterinárskeho lekárstva, 041 81 Košice, SR

The changes in the basic lipid constants *(peroxidation number, number of fat acidity and thiobarbituric acid)* of pork meat *(m. longissimus dorsi)* of normal quality, and that of altered quality *(PSE: pale, soft, exudative)* were observed in dependence on the length of freezing storage. The aim was to deepen and to make objective the knowledge on the effect of freezing process on the parameters of quality of pork fat. Statistically significant changes in the basic lipid constants in thermally untreated frozen pork fat occur in general after month 6 of freezing storage in both groups.

„ŠUNKA V PLECHU“ Z PSE MÄSA

„CANNED HAM“ FROM PSE MEAT

Sopková, D.

Ústav fyziológie, Univerzita veterinárskeho lekárstva, 041 81 Košice, SR

The changes in the technological characteristics of pork meat (*m. longissimus dorsi*) of normal quality, and that of altered quality (PSE: pale, soft, exudative) were observed in dependence on the length of freezing storage. The aim was to deepen and to make objective the knowledge on the effect of freezing process on the parameters of quality of pork meat. According the sensory analysis of the product “canned ham” from PSE and control pork meat, all the sensory parameters, above all juiciness were evaluated more favourable in the control meat. During the long-term freezing storage, however, the sensory differences between the products are smaller, and since month 8, there is no perceptible difference between samples.

NUTRIČNÉ PARAMETRE BRAVČOVÉHO KVALITATÍVNE ZMENENÉHO PSE MÄSA

THE NUTRITIONAL PARAMETERS OF PORK MEAT OF ALTERED QUALITY- PSE MEAT

Sopková, D.

Ústav fyziológie, Univerzita veterinárskeho lekárstva, 041 81 Košice, SR

The changes in the levels of amino-acids of pork meat (*m. longissimus dorsi*) of normal quality, and that of altered quality PSE (pale, soft, exudative) were observed in dependence on the length of freezing storage. The aim was to deepen and to make objective the knowledge on the effect of freezing process on the parameters of quality of pork meat.
According to our finding, pork meat with PSE, regarding total proteins and aminoacids, is not nutritionally less valuable than that qualitatively unchanged. The results showed generally higher values of essential isoleucine, treonine, valine, leucine and phenylalanine, non essential tyrosine, glutamic acid, cystine, aspartic acid and alanine in the fresh musculature of pigs with PSE meat. The finding was emphasised by the sum of essential aminoacids in the PSE meat and correlated with statistically significantly higher values of total proteins in the PSE meat.

DENNÝ PROFIL HLADÍN MELATONÍNU VO VYBRANÝCH TKANIVÁCH A MELATONÍNOVÝCH RECEPTOROV V HYPOTALAME POTKANA.

DAILY PROFILE OF MELATONIN CONCENTRATION IN SELECTED TISSUES AND MELATONIN RECEPTORS IN HYPOTHALAMUS OF RAT.

Stebelová K., Herichová I., Zeman M.

Katedra živočíšnej fyziológie a etológie, Prírodovedecká fakulta UK, Mlynská dolina B-2, Bratislava

Melatonin (Mel) is a hormone synthesized primarily in the pineal gland. Mel production is under circadian control and is inhibited by light. Night time Mel concentrations in the pineal and plasma are higher than during the daytime. While Mel synthesis in retina and Harderian glands was definitely proven, direct evidence for Mel synthesis in GIT is still missing. In our study we determined Mel levels in plasma, pineal, GIT and different peripheral tissues and measured expression of gene encoding Mel receptors in hypothalamus during 24 hours (RT-PCR). Rhythmic pattern of Mel was estimated in plasma, pineal and pancreas while concentrations in spleen, kidney, duodenum and colon did not exhibited a rhythmic profile.

VPLYV VITAMÍNU E NA PRODUKCIU VAJEC U NOSNÍC

THE EFFECT OF VITAMIN E ON EGGS PRODUCTION IN LAYING HENS

Šály, J., Kušev, J., Baranová, D., Neuschl, J., Máteová, S., Kremeň, J.,

Univerzita veterinárskeho lekárstva, Komenského 73, 041 81 Košice, saly@uvm.sk

The effect of vitamin E on the egg production was observed in the laying hens of hybrid Shaver in their 1.st and 7 st month of egg- laying. The control and experimentals groups at both ages categories of laying hens (10 in each group of both age categories) were fed a complex feed mixture for laying hens of the Hyd-10. Vitamin E in drinking water at a dose of 20 mg/day/hen was administered to the first experimental groups and at a dose of 30 mg to the second experimental groups. Addition of vitamin E at both doses increased the egg weight – most pronouncedly in the laying hens in their 1 st month of egg-laying. The increase in egg-laying in the experimental groups was not signicant. The most pronounced increase in weight was found out in the egg-white, then in the egg-yolk and eggshel. At the dose of 30 mg of vitamin E and higher weight of eggs the largest eggshells damage and decrease in both the eggshell solidity and thickness

occurred. Administration of vitamin E caused the significant increase in its content in the blood plasma and the decrease in the lipid content in the blood serum in comparison with the control laying hens. The content of anorganic phosphorus and total proteins in the blood serum were increased with the dose of vitamin E. In the content of calcium and ALP, ASP and ALT activities there were only slight differences between the laying hens with addition of vitamin E and control ones

METABOLIZMUS VÁPNIKA V SÚVISLOSTI S TVORBOU VAJEČNEJ ŠKRUPINY

CALCIUM METABOLISM RELATED TO THE EGG SHELL FORMATION

Šály, J., Baranová, D., Neuschl, J.

Univerzita veterinárskeho lekárstva, Komenského 73, 041 81 Košice, saly@uvm.sk

Calcium needed for the egg shell formation is obtained from feed and bone tissue. The laying hen create a depot of nonstabile calcium in the medular bone. Maximum of the calcium retention ability of a laying hen in 24 hour is 1,8 g. The rest to 2,0 – 2,2 g in egg shell has to be filled from the body reserves what means 25 – 40%.This amount of calcium depends on the concentration of Ca in feed, feed intake, absorption etc, Due to our findings is the increasing of Ca in feed over 4% useless. Laying hens to age of up to 40.wk. require 3,3% and after 3,7% Ca in feed mixture. Calcium is transported to lumen of oviduct from blood by the cells of uterus.Action is performed by molecules of calcium-binding proteins, and regulated by 1,25 dihydroxycholecalciferol. Therefore, lack of it disturbes absorption of Ca from gut transport via wall of uterus for egg shell formation, too. Increasing calcium content from 3,1% to 4,0 and 5% in feed improved the egg shell quality, increased calcium content and decreased alkaline phosphatase activity in blood serum. Increasing calcium content in the feed from 4% to 5% did not improve these parameters.

VPLYV SIMULOVANEJ MIKROGRAVITÁCIE NA RAST KOSTÍ NOHY PREPELICE JAPONSKEJ

EFFECT OF SIMULATED MICROGRAVITY ON LEG BONE GROWTH IN JAPANESE QUAIL

Škrobánek, P., Baranovská, M., Šárniková, B.

Ústav biochémie a genetiky živočíchov SAV, Ivanka pri Dunaji, SR

The purpose of this study was to assess the influence of simulated microgravity (hypodynamy) on morphological characteristics of the long bones of the right leg of Japanese quail females from 3 to 56 days of age. Femur and tibiotarsus were obtained at 14, 28, 42 and 56 days of age and the variables studied were: weight (g), length and width (mm), bone breaking strength (N) and bone index (ash weight /bone length; mg/mm).

All bone variables increased with bird age. However, the effect of hypodynamy on the examined variables was considerable. The tibiotarsus mean weight was significantly ($P < 0.001$) reduced by 0.154 g, although the femur mean weight in hypodynamy reared quails was almost identical to that of the age-matched control at 56 days of age. Similarly, there was significantly decreased tibiotarsus mean length by 3.16 mm ($P < 0.01$) and tibiotarsus mean width by 0.44 mm ($P < 0.001$) at the end of experiment. In the same way, bone index and bone breaking strength of both bones in birds reared under hypodynamy were lower than those of control ($P < 0.001$).

Our results suggest that although hypodynamy reduce bone growth of test birds, the long bones of the right leg of female Japanese quail were capable to grow and develop under conditions of simulated microgravity.

SPRÁVANIE SA POTKANOV OŽIARENÝCH GAMA-LÚČMI V OBLASTI HLAVY V TESTE NA HORÚCEJ PLATNI A V KRÍŽOVOM LABYRINTE

BEHAVIOR OF RATS IRRADIATED WITH GAMMA RAYS ON THE HEAD IN HOT PLATE TEST AND IN PLUS MAZE

Šmajda, B., Kisková, J., Oravcová, Z., Tomášová, L.

Katedra fyziológie živočíchov, Ústav biologických a ekologických vied Prírodovedeckej fakulty UPJŠ v Košiciach

The effect of ionizing radiation on nociception in hot plate test and on some behavioral parameters in elevated plus maze were studied in female Sprague-Dowley rats. Irradiation of rats (n=16) with a single dose of 10 Gy on the head caused a statistically significant decrease in nociception (measured as latency time of escape from hot plate) immediately after

irradiation, but no changes during following 4 days (with even significantly shorter latency in irradiated animals on the 2nd day). Irradiation of rats (n=6) with a whole-body dose of 6 Gy caused a statistically significant decrease in rearing behaviour and an increased number of crossings of the open center of elevated plus maze compared with the sham-irradiated control group. No significant differences were detected up to the 4th day after irradiation. These results suggest, that the applied doses of radiation can cause only short-lasting and reversible changes in nociception and in parameters of explorative behaviour in female rats.

POROVNANIE CHOLESTEROLÉMIE A SOMATOMETRICKÝCH UKAZOVATEĽOV V SKUPINE DOSPELÝCH OSÔB

COMPARATION OF BLOOD CHOLESTEROL AND SOMATOMETRIC PARAMETERS IN ADULTS

Šramková, K., Kopčeková, J., Daniška, J.

Katedra výživy ľudí FAPZ SPU Nitra

The survey study included 109 randomly selected adult persons (85 women and 24 men), aged 20-58. The objective of this study was to monitor the distribution of risk factors – obesity and total cholesterol. Overweight was present in 23,5 % of women and 25,0 % of men. Obesity was present in 7,1 % of women and 20,8 % of men. Obesity is associated with an increased risk of many major chronic diseases. Elevated blood cholesterol was assed in 24,8 % of all group.

KOSTNÁ DENZITA, RIZIKO OSTEOPORÓZY A NUTRIČNÉ PARAMETRE

BONE DENSITY, RISK OF OSTEOPOROSIS AND NUTRITIONAL PARAMETERS

Šramková, K.[1], Bitter, K. [2], Lukáčová, O. [3]

[1] Katedra výživy ľudí FAPZ SPU Nitra, [2] Špecializovaný odborný ústav sv. Svorada, n.o. Nitra-Zobor, [3] Národný ústav reumatických chorôb Piešťany

The aim of the study was to evaluate bone density in 161 adults (116 women and 45 men) aged 14–73 years (average age 45,90 years). Prevalence of the osteoporosis was 5,80 % in women and 0,45 % in men, prevalence of osteopenia was 48,72 % in women and 6,30 % in men.

According to body mass index was evaluated normal weight only in 26,1 % women with osteopenia. The highest age was in the osteoporosis group in women and in men too. The lowest body mass index was in women with osteopenia and in men with osteoporosis. Half of the litre and more per day was daily consumed quantum of milk in 2,78 % of women (all from group with normal density). The most of milk products was consumed in women and in men from group with osteopenia and normal bone density.

VÝSKYT RUJE PO HORMONÁLNOM OŠETRENÍ U ZVERNICOVO CHOVANÝCH DANIELIC PO SEZÓNNEJ ANESTRII.

THE ONSET OF ESTRUS CYCLE IN FARMED FALLOW DEER (*DAMA DAMA*) FOLLOWING SEASONAL ANOESTRUS.

Šťavová Ľ. [1],Harvánková M.[1], Harbáč D.[1], Košúthová L.[2]

[1]Klinika pôrodníctva, gynekológie a andrológie, Univerzita veterinárskeho lekárstva, Košice, [2]Ústav parazitológie, chorôb rýb, včiel a zveri, Univerzita veterinárskeho lekárstva, Košice

In our experiment we monitored concentration of progesterone, estradiol 17β, LH and onset and repetition of estrus cycles with its detection after anoestrus period in fallow deer. There were used five fallow deer does (n=9), three to five years of age and 30 – 35 kg of bodyweight. Fallow deer does are profound seasonaly polyestric animals. The length the estrus cycle increased and became more variable as the season proceeded but was not affected by age of the doe or live weight. The onset of the first signs of estrus following the anoestrus period is in 13-14 days. Mean duration of the estrous cycle in farmed fallow deer during the major rutting season is 21 days with a range of 19-22 days. Our results pinpoint these hormonal changes: preovulatory level of LH release reached 20 ng/ml approximately 4h following the onset of estrus, the range of progesterone concentrations was 0,1-0,3 ng/ml and estradiol 17β level reached 23-25 pg/ml. These hormonal changes found in farmed fallow deer are similar to those of other deer species so far investigated.

FUNKCIA ŠTÍTNEJ ŽĽAZY A STREDNOMOLEKULOVÉ PEPTIDY V KRVNOM SÉRE HOVÄDZIEHO DOBYTKA V PODMIENKACH EKOLOGICKY PODMIENENÉHO NEDOSTATKU JÓDU A PRI JEHO KOREKCII

FUNCTION OF THYROID GLAND AND MIDDLE MOLECULAR PEPTIDS IN BLOOD SERUM OF CATTLES AT CONDITIONS ECOLOGICALLY CONTINGENT BY IODINE INSUFFICIENCY AND AT ITS NORMALIZATION

Turianica, I., *Rostoka, L., Angelovičová, M., Daniška, J., Krivosudská, E.

Slovenská poľnohospodárska univerzita v Nitre, Slovenská republika
**Užhorodská národná univerzita v Užhorode, Ukrajina*

Function of thyroid gland and middle molecular peptides (MMP) of blood serum in cattle under the ecologically condition of iodine ins insufficiency and correction was studied. The aim of this work was studying influence of ecologically conditioned iodine deficiency on the hormonal function of thyroid gland reserves of middle moleculare peptides in the blood serum as well as increase of body weight in cattle. Development of iodine deficiency in tissues of organism in cattle adequately expressed its insufficiency in environments. Iodine correction even during of two month increasing of its reserves, activating of hormonal function of thyroid gland and increasing of body weight of cattle, particularly under ecologically conditioned of iodine deficiency.

LIMITY NUTRIČNEJ FYZIOLÓGIE PRI REGULOVANÍ METABOLICKÝCH FUNKCIÍ DOJNÍC.

LIMITS NUTRITIONAL PHYSIOLOGY FOR REGULATION METABOLIC FUNCTION IN DAIRY COWS.

Vajda. V., Maskaľová I.

Katedra výživy dietetiky a chovu zvierat, Univerzita veterinárskeho lekárstva, Košice

Transition period is the most critical period in the production cycle of dairy cows. Dry matter intake, concentration of energy and proteins, structure of the feed and carbohydrate composition are important factors affecting milk production. Nutritional imbalances, deficiencies, or erratic management of feeding programs for dairy cows create large number of health problems and metabolic diseases. The presented system of biological control of the level of nutrition lactating cows in the farms comes from the analysis of nutritional and dietetic value of feeds. The calculated parameters

of TMR are evaluated in relation to analyzed markers of ruminal fermentation, blood intermediate metabolism for specific biologic phase.

VPLYV MONOKLONOVÝCH PROTILÁTOK NA AKROZÓMOVÚ REAKCIU BÝČÍCH SPERMIÍ.

INFLUENCE OF MONOCLONAL ANTIBODIES ON THE ACROSOME REACTION OF BOVINE SPERM.

Valentovičová, J., Simon, M., Antalíková, J.

Ústav biochémie a genetiky živočíchov SAV, Ivanka pri Dunaji

Capacitacion and acrosome reaction of sperm are accompanied by changing of sperm membrane proteins. Therefore, identification and characterization of these proteins can help us to better understand molecular mechanisms of these processes. The aim of study was: 1. To determine the localization of some proteins by mAbs against bovine sperm antigens. 2. To test the influence of antisperm monoclonal antibodies on the acrosome reaction of bovine spermatozoa treated by 0,1mM calcium ionophore. The indirect immunofluorescence assay showed the localization of the antigens under study on sperm head membranes. None of mAbs stimulated but all inhibited the acrosome reaction of capacitated bovine sperm.

CHOISEN HISTOLOGICAL PARAMETERS OF OVIDUCT IN PUERPERAL EWES AFTER CARBETOCIN TREATMENT

Valocký, I., Lenhardt, Ľ., Krajničáková, M., Lazar, G., Pošivák, J., Horňáková, Ľ., Novotný, F.

Klinika pôrodníctva, gynekológie a andrológie, Univerzita veterinárskeho lekárstva, Komenského 73, 041 81 Košice
Clinic of Obstetrics, Gynaecology and Andrology, The University of Veterinary Medicine in Košice, Komenského 73, 041 81 Košice

Our work focused on the observation of the oviduct in ewes during puerperium after carbetocin (Depotocin-Léčiva) treatment. Twenty-four Slovak merino sheep 3-4 years old and weighing 40-45 kg were used in the experiment. The animals were divided into two groups. The experimental ewes (n = 12) were administered 0.07 mg carbetocin (Depotocin, Léčiva) after lambing at h 24 and 72. The first dose was given intramuscularly (i.m.), the second one was given subcutaneously (s.c.). The control ewes (n = 12) were administered with a saline solution at the same intervals. The

animals of the both groups were slaughtered on days 7, 17, 25, and 34 postpartum (n = 3). The measurement of the left and right oviduct weight in both groups revealed significant differences ($P < 0.05$) on day 17 postpartum. Significant differences in oviduct length between both groups were found on day 25 ($P < 0.05$) postpartum. Significant differences ($P < 0.05$) in secretory and ciliary cells between both groups were recorded on day 34 postpartum. The results of the evaluated parameters extend and update knowledge about oviduct in sheep postpartum and are an important part of continues control of reproductive activity.

KVANTITATÍVNE A KVALITATÍVNE ZMENY FOLIKULOV OVÁRIÍ PO INDUKOVANEJ RUJI OVIEC V ANESTRICKOM OBDOBÍ.

QUANTITATIVE AND QUALITATIVE FOLLICULAR CHANGES OF OVARIES IN EWES AFTER OESTROUS INDUCTION DURING ANESTRUS.

Vlčková R., Lacková Z., Antal J., Maraček I.

Katedra normálnej anatómie, histológie a fyziológie, Ústav fyziológie, Univerzita veterinárskeho lekárstva v Košiciach

Three days after lamb weaning and than 48-72 hours after FGA (40 mg) and eCG (1000 U.I.) treatment (for 12-13 days) for oestrous induction and OR stimulation three sheep of Improved Wallachian breed were examined using the laparotomic ultrasound method and digital fotography. Sheep were milked during this period. There was increasing in the number of follicles >3 mm in diameter (selection stage) three days after weaning. Despite measuring after treatment was more important in the number of < 3 mm follicles (recruitment stage). This may reflect that folliculogenesis begins early after parturition and proceeds in better follicular waves.

MÔŽU MATERNÁLNE HORMÓNY PRÍTOMNÉ VO VAJCI OVPLYVNIŤ POSTEMBRYONÁLNY VÝVIN A SPRÁVANIE MLÁĎAT PREPELÍC JAPONSKÝCH?

CAN MATERNAL HORMONES IN EGG AFFECT DEVELOPMENT AND BEHAVIOR OF JAPANESE QUAIL HATCHLINGS?

Zeman, M.[1,2], Okuliarová, M.[1], Slobodová D.[1],

[1]Katedra živočíšnej fyziológie a etológie, Prírodovedecká fakulta UK, Mlynská dolina B-2, Bratislava
[2] Ústav biochémie a genetiky živočíchov, SAV, Ivanka pri Dunaji

Transgenerational transfer of hormones from mother to eggs and embryos may have consequences on development and behaviour of progeny. Epigenetic effects of testosterone were suggested to effect level of fearfulness and learning abilities that may determine surviving in new environment as well as the activity of selected physiological systems. Manipulations of maternal hormone concentration may be potentially used to influence postembryonic performance in precocial birds.

STANOVENIE VÝSKYTU PATOLOGICKÝCH SPERMIÍ BÝKOV, BARANOV A ŽREBCOV

EVALUATION OF OCCURRENCE OF PATHOLOCICAL SPERMATOZOA IN BULLS, RAMS AND STALLIONS

Zemanová, J., Massányi, P., Lukáč, N., Trandžík, J.

Katedra fyziológie živočíchov, Slovenská poľnohospodárska univerzita v Nitre

In this study evaluation of present status in insemination of farm animals focused on bull (n=20), ram (n=10) and stallion (n=7) semen quality is reported. Microscopic and submicroscopic structure of normal and pathological speramtozoa was studied. Stained samples were evaluated on optic microcope Carl Zeiss at the magnification 1.500x. Evalation of percentual occurence of pathological spermatozoa determined 10.98% of pathological spermatozoa in bulls, 10.56% in rams and 11.19% in stallion semen. As the physiological value is 20%, we can conclude that the semen of studied breeding animals was of good quality.

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