MORPHOLOGY OF UDDERS AND LACTATING MAMMARY GLANDS IN SHEEP

HLUCHÝ SVÄTOSLAV
Slovak University of Agriculture in Nitra, Slovak Republic

Morphology and histochemistry of lactating udders and mammary glands are dealt with in this paper.
Key words: sheep, udder, mammary gland, histochemistry, morphometric.

RELATIONSHIP BETWEEN HAEMATOLOGICAL PARAMETERS AND THE VIABILITY OF THE GREY KARAKUL LAMBS

BOSÎNCIUC S., FECIORU Elena, FILOTE Elena, BRADATAN Gh., FILOTE M.
Sheep Development Research Center, Popăuţi, Botoşani, Romania

The karakul sheep belonging to the grey variety represents an interesting subject for the specialists because of the specific particularities of their exploitation. The main impediment, which stops the numeric and qualitative multiplication of the respective population, is the lethal element occurring at 1/3 of the grey lambs, resulting from the homogeneous and heterogeneous pairs. The losses caused by the death rate of the pink lambs in the first months makes the exploitation of these sheep expensive. The determinative hematological parameters for the grey karakul lambs can be an index of viability and a useful way in reducing their losses because of death.

Key words: Karakul, grey, lethal, haematological, biochemical.

COMPARATIVE STUDY OF THE RESULTS OF SERUM TOTAL PROTEIN MEASUREMENT BY THE BIURET METHOD AND BY REFRACTOMETRY

CAPRIŢĂ Rodica*, CAPRIŢĂ A.**, CREŢESCU Iuliana*
Faculty of Animal Science and Biotechnology

Serum total protein represents a main biochemical parameter used in the study of the protein and nitrogenous status of animals. The goal of the study was to compare two laboratory techniques, refractometry and the biuret method and to suggest the most suitable one for serum total protein determination in different animal species. Refractometry has the advantage to be performed in a very short time and does not need any reagents, while the biuret method is more laborious and expensive. The protein values determined by refractometry are lower in comparison with those measured by the biuret method. The differences between the values measured by the two methods are: 0.14 in chickens, 0.06 in pigs, and 0.14 in cows. The refractometric method can be accomplished with good results both in pigs and cows, the percentage differences not exceeding 1.25% and 2.16%, respectively, but is not recommended in chickens, where the differences are of 5.43%.
Key words: serum total protein, refractometry, biuret method.

CHANGES IN SOME PHYSIOLOGICAL PARAMETERS IN SUSSEX HENS UNDER VARIABLE CONDITIONS OF TEMPERATURE

DINU Cristina*, PÂRVU Monica*, RĂDOI I.**,BRĂSLAŞU M.C.**

**Faculty of Veterinary Medicine "Spiru Haret" Bucharest, Romania*
*** Faculty of Veterinary Medicine USAMV Bucharest, Romania*

The changes in some physiological parameters were monitored in Sussex hens exposed to temperatures of 24-26^{0}C and 35-38^{0}C for 30 minutes and then for 3 hours. The experiment was conducted on 15 laying hens, aged 40 weeks, kept under standard conditions. It was observed that under the conditions of exposure for 30 minutes at 35-38^{0}C, the layers increased the contractility of myocardium by 13.2% for P wave and by 68.1% for R wave, while heart beat increased by 26 cycles, getting therefore accommodated to the new conditions. When the heat stress was prolonged to 3 hours, the bird organism got adapted by decreasing the heartbeats with 8 cycles. Respiration frequency, surface temperature and rectal temperature increased progressively with the time of exposure to heat stress ($p \leq 0.05$).
Key words: accommodation, adaptation, heartbeat, respiration frequency, and rectal temperature.

GROUND-WATER QUALITY ANALYSIS FORM THE DUMP OF ASH AND SLAG RESULTED IN THE LIGNITE COMBUSTION AT C.E.T. ARAD

LIXANDRU B., TRANDAFIR G., morariu FLORICA, MIHUT T.
Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania

Ash and slag resulted after lignite combustion at CET (electric heating plant) Arad are deposited in a dump with a waterproofed bottom of settled clay in order to protect the aquiferous layer from the ground. Even so, periodically, ground-water quality is checked to prevent possible negative effects. Therefore, in 2002, through 15 interception wells placed on the exterior edge of the deposit, ground-water samples were taken and analyzed regarding hydrogen ions, sulfate and ammonium concentrations. Our results show that pH, sulfate and ammonium values are under the admitted maximal limit, and the ground-water layer is not in danger, yet, by the waste water used to wet ash deposit surfaces in order to prevent the dissipation phenomenon.
Key words: dump, ash, electric heating plant, combustion, lignite

RESEARCHES REGARDING THE IMPACT OF AIR POLLUTION THROUGH FOSSIL FUEL COMBUSTION AT C.E.T. ARAD

LIXANDRU B., TRANDAFIR G., MIHUT T.
Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania

At C.E.T. (electric heating plant) Arad, during 2000-2002, was assessed the impact had on the environment by the gaseous pollutants (CO_2, CO, NH_3, NO_2 and SO_2), sedimentable powders and ash resulted in the process of lignite combustion. In each of the three years, monthly mean values of the analyzed noxes were under the maximal limits admitted by norms. Out of the ash balance resulted a percent of electro-filter retainance of the flying ash of 99.6%. This is the reason why the immediate impact of the sedimentable powders on the environment is undistinguishable. It is not known the effect of long-term accumulation. A major impact on the terrestrial biotope has the ash and slag already occupying 20% of the deposit area.
Key words: combustion, fossil fuel, gaseous pollutants.

STUDY OF LEAD AND CADMIUM CONTENT IN SOIL, WATER AND PLANTS IN FREIDORF AREA

BORDEAN Despina-Maria*, DRAGOMIRESCU Monica*, NICULA Marioara*, BUTNARU Monica, GOIAN M.**, GERGEN I.******

**Faculty of Animal Sciences and Biotechnologies, Timişoara, România*
*** Faculty of Agriculture Timişoara, România*
****Faculty of Food Technology Timişoara, România*

The aim of our work was to study the lead and cadmium content in soil, water and plants samples taken from a delimitated area in Timisoara between Calea Sagului Road and Freidorf. The lead (47 ppm) and cadmium (1.90 ppm) levels in soil are very high. In water and plants the levels of Pb and Cd are under the warning threshold. Cadmium is one of the most mobile and toxic metals and lead is toxic through accumulation.
Key words: lead, cadmium, soil, water, plants.

STUDY OF THE BEHAVIORAL ADAPTATION OF ZOOGLEAL BIOCENOSIS FROM COAL BIOFILTERS IN THE TREATMENT PROCESS OF PHENOL POLLUTED WATERS

MÂŞU Smaranda, TRANDAFIR G., LIXANDRU B., VĂCARU Mirela-Cristina
Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania

Study of phenol biological oxidation from wastewaters was carried out in a biofilter with granular coal. The dynamics of zoogleal pellicle commun biocenotic modifications, show that during a period of 4-5 days present species adapt to consuming a hydrocarbonate substrate, formed exclusively of phenol, with the condition of supplementing it with biogene elements, nitrogen and phosphorous, in sufficient quantities. Formed zoogleal populations may increase their metabolism of phenol biooxidizing so that they consume, in the same conditions, 45 times more phenol. Yields reach 99.8% for waters with concentrations ≥ 1 g phenol/l.
Key words: adaptation, biocenosis, phenol, biofilter.

INVENTORY OF THE BIOMASS SOURCES RESULTED FROM THE ANIMAL BREEDING DOMAIN IN DAMBOVITA AND THE ASSESSMENT OF THE BIOGAS PRODUCTION PROVIDED BY THESE SOURCES

ŞTIRBU Clara, MOISE V., MOISE Lavinia, DUNEA D.
Faculty of Environmental Engineering and Biotechnologies, Târgovişte, Romania

The gradual reduction of the classic energetic sources made the mankind is more attentive to the use of the unconventional resources of energy. Among these sources, the agricultural organic wastes that may be used in order to obtain biogas occupy an important place. At the Dambovita county level, the necessity of organic wastes use appears due to the intensive activities of animal breeding in the hilly and mountainous areas, knowing the economic and ecologic considerations the use of these unconventional sources has. For this, a study was carried out on the entire county surface, regarding the agricultural organic materials energetic potential according to the biogas quantity resulted after animal wastes, domestic wastes, vegetal wastes and wastewater processing plant sludge fermentation.
Key words: biomass, biogas, unconventional energies, punching

RESEARCHES ON THE DIGESTION OF SOME NOURISHING SUBSTANCES FROM ALFALFA HAY AND BARLEY BASED RATIO ON ADULT COYPU

BURA M., LUCA I., PĂTRUICĂ Silvia, GROZEA A., ŞTEF Lavinia, TÎRSALĂ Ş.C.
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

This paper presents a study regarding the digestion of the nourishing substances from alfalfa hay and barley based ratio on three adult coypus. During the experimental period the amount of ingested forages, the quantity of excreted faeces and the chemical composition of feeds have been determined. Knowing these we evaluate: ingesta, egesta and digesta of nourishing substances and also their digestive parameters (Qd). The averages of digestive parameters were between 86.19-94.80% for S.O., 82.84-89.73% for crude protein, 68.16-74.43% for crude fat, 53.30-59.49% for cellulose and 86.86-95.60% for SEN.
Key words: coypus, nourishment, digestion

THE EFFECT OF SOYBEAN AND SUNFLOWERS SEEDS ON THE QUALITY OF THE SWINE CARCASSES

CIURDAR A., DRINCEANU D., POLEN T., LUCA I, DUMITRESCU Gabi
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

In this paper we studied the effect of soybean and sunflower grains on the quality of the fattening swine carcasses during the growing-finishing period (27-110 kg) at 30 hybrids (Large White and Landrace). To the experimental lot made up from 15 animals was administered feed with the energetic and protein level of 3280 kcal ME, 14.9% CP (crude protein) in the first period and 3281 kcal EM şi 12.8 % CP in the second period. To the control lot was administered feed with 3109 kcal ME and 14.9% CP level in the first period and 3098 kcal ME, 12.9 % CP in the second period. Substituting the meal (the soya meal, the sun flower meal) from the ration structure with soybean and sunflower grains in proportion of 5%, has no significant influence on the carcasses quality.
Key words: energetic level, soybean, sunflower grains, carcasses quality

DEVELOPMENT OF METHODOLOGICAL DESIGNS FOR QUALITY ASSESSMENT OF THE CEREAL PRODUCTS (WHEAT, BARLEY, OATS, RICE FILING, SORGHUM) USED IN COMPOUND FEED MANUFACTURE

CRISTE Rodica Diana, DUCA R.C., OLTEANU Margareta
Institute for Biology and Animal Nutrition, Baloteşti, Romania

The mishaps in the forage industry during the past decade (dyoxin present in the forages genetically modified crops, spreading of the bovine encephalopathy, Salmonella in the eggs), which turned into media scandals, focused the attention of the consumers worldwide on the role of the feed industry in the food chain. The consequence is a trend towards a quality control system in the feed industry similar to the one in the food industry. The companies develop and implement own methodological designs to check the quality of feed ingredients and of the finished feeds intended to reveal their variability and to develop a system of control assisting the managerial decision-making. These designs are similar to the insurance policy and they prevent nutritional, technical and juridical mishaps. The purpose of the paper is to present the methodological designs developed by IBNA to check the quality of the wheat, barley, oats, sorghum and rice filing used as feed ingredients.
Key words: ***feeds, cereals, methodology, check, quality***

THE OPPORTUNITY OF IMPROVING THE CURRENT ROMANIAN FEEDING SYSTEM FOR RUMINANTS BY INCLUDING A NEW PARAMETER – aa_{ID}

DRAGOMIR C
Institute for Biology and Animal Nutrition, Baloteşti, Romania

The article highlights the need of refining the current Romanian feeding systems for ruminants by considering amino acids profile of intestinally digestible protein. A minimal estimation tool, based on current feeding system is proposed and its major weaknesses are discussed. Of these, lack of knowledge on individual amino acids degradability, the composition of microbial protein and digestibility of amino acids in by-pass protein are the most important issues. Although the proposed tool is sensitive, of all factors, only to amino acids composition of feeds, it still leads to an increase effectiveness of the feeding system, especially for certain ruminant categories and feeding situations.
Key words: ruminants, amino acids, feeding system

NUTRITIONAL IMBALANCES IN THE DAIRY COWS FEEDING IN THE FAMILY FARMS FROM THE TIMIS COUNTY

DRINCEANU D.*, LUCA, I.*, ŞTEF Lavinia* CĂPRIŢĂ Rodica*, ŞTEF D.*, PEŢ I.*

**Faculty of Animal Science and Biotechnologies Timisoara, România*
***Faculty of Food Products Technology, Timisoara, România*

Feeding rations were formulated in 87cattle family farms from the Timis County, in the indoor period of the year 2003 (January – April), allowing the evaluation of the assurance mode of the main nutritive indices in the administered feed, respectively the energy, digestible protein, calcium and phosphorus [1,3]. Only in 6 farms (6.9%) the energy and the digestible protein levels are correlated and correspond to the dairy cows requirements. In 81 farms energy-protein imbalances are registered, respectively in 25 farms (28.8%) an energy and protein excess is noted, in 19 farms (21.8%) the energy is deficient and the protein is in excess, and in 17 farms (19.5%) both energy and protein are deficient. In 12 farms the Ca/P ratio is in normal limits, but in 53 farms (61.0%) mostly a phosphorus deficit is registered.
Key words: dairy cows, rations, family farm

INFLUENCE OF A BORON-ENRICHED COMPOUND (VETABOR) ON THE LEVEL OF EGG FATTY ACIDS AND CHOLESTEROL

DUCA R.C.*, CRISTE Rodica Diana*, SCOREI R.**, CHEŢEA Manuela*, MITRUŢ Mihaela**

** Institute for Biology and Animal Nutrition, Baloteşti, Romania*
***S.C. Natural Research S.R.L.*

The paper approaches the influence of Vetabor (boron-enriched compound produced by S.C. NATURAL RESEARCH S.R.L.) on the quality of eggs from ROSO-SL – 2000 hybrid hens discussing the levels of fatty acids and cholesterol.
Key words: fatty acids, boron, egg

METHODOLOGY TO ASSESS BROILER NUTRITIONAL REQUIREMENTS

DUMITRU A.*, BURLACU R.**

**Institute of Biology and Animal Nutrition Baloteşti, Romania*

*** University of Agricultural Sciences and Veterinary Medicine, Bucharest, Romania*

The assessment of broiler nutritional requirements (and in the other species and categories of farm animals) has a dynamic character depending both on the continuous process of their capacity to ingest and use the feeds, and on exogenous factors such as the nature of feeds, the technology of feeds preparation and the technology of exploitation. During the past years, valuable data were produced on the physiology of animal nutrition, particularly on ingestibility and on the optimisation of energy to plastic matter ratio, which requires a review of the parameters used to assess feed conversion and the norms of nutrients. Another important element is the mathematical modelling used to simulate the energy and protein metabolism, to develop software for diet optimisation, to assess the quantity and quality of animal production and to develop strategies aiming to reach maximal performance by animal species and categories.
Key words: broiler, nutritional requirements, energy, protein, amino acids

MATHEMATICAL MODEL USED TO SIMULATE GROWTH PROCESSES IN BROILERS

DUMITRU A.*, BURLACU R.**

**Institute of Biology and Animal Nutrition, Baloteşti*

***University of Agricultural Sciences and Veterinary Medicine, Bucharest*

Traditionally, the energy and protein allowances aim to increase production (daily gain, in our case) as much as possible. There are only a few systems assessing the energy and protein requirement, in order to provide the possibility to monitor the quality of carcass as well, mainly expressed by lipid to protein ratio. The method of mathematical simulation of the metabolism processes gives the possibility of a dynamic assessment of the feeding norms related both to the rate of weight gain and to carcass quality. Considering that the quality of a given weight gain belongs to the interval $\left(\min\frac{Lr}{\Pr}\le\frac{Lr}{\Pr}\le\max\frac{Lr}{\Pr}\right)$*, where Lr – daily retained lipids and Pr – daily retained protein, it means that the feeding norms will be expressed [*$norm_{min}$*,* $norm_{max}$*] as intervals. The selection of one of the possible values can be done function of the growth technology used in that particular case, of the target in terms of economics and/or in terms of proper human feeding.*

Key words: mathematical modelling, broilers, norms, energy, protein, amino acids

NEWTONIAN MODEL FOR LACTATION

GRAS M., NICOLAE Ioana, DUMITRU A., BURLACU R.

Research-Development Institute for Cattle Breeding, Baloteşti, Romania

The main objective is the prediction of milk yield during lactation using the method of a simple model of the mammary gland of the dairy cows. Nutritional and hormonal inputs are considered. The assessment is based on the number and activity of the secretory cells. These biological components seem to dominate the system that determines the essential features of the lactation curve.Appendix 4 shows the general design; table 2 shows the main symbols.The model accepts the hypothesis that there is no restriction in meeting the requirement of metabolites carried through the blood flow for milk synthesis and growth of the mammary gland cells. The model considers that the mammary gland consists of undifferentiated cells whose number was noted with C_u*, of differentiated cells adapted to the secretion of milk whose number was noted with* C_s *and of a storage compartment represented by channels, alveoli and cistern glands holding M [kg] of milk. The model postulates that the H hormone controls the rate at which the undifferentiated* C_u *cells divide to generate secretory cells.The level of milk M that was produced but not yet extracted which, if it is high may indicate an incomplete regeneration of the mammary gland milk, may trigger immediately, directly and on long-term the answer indicated by the hormones through biochemical and physical pressure. The time (independent variable) t is measured in days. The "carrier" variable shows the level of blood metabolites S [mg* m^{-3}*].*

NUTRITIVE EFFECT OF SOME FITO-ADDTIVES IN WEANED PIGLETS FEED

MOJZI A., DRINCEANU D., DUMITRESCU Gabi, LUCA I., STEF Lavinia, CIOCHINA Liliana
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

This research establishes the nutritive and histological effect of some medicinal plants and spices mixture. This mixture was incorporated in the experimental diet with a 3.14 % inclusion rate to the experimental group formed of 12 weaned piglets and 12 weaned piglets in the control group. In the end of the experiment cecum fragments were taken from 2 piglets from both groups. The samples were prepared using histological techniques. After paraffin embedding, the samples were cut in 6 µ pieces and colored with hematoxiline - eosine. In the experimental group, the microscopic studies showed important modifications in the cecum mucous level. These modifications occur in the development stages of cecum ephitelia, thin hipertrophy of the absorbent ephitelium, and development of glandular tissue, which suggest a better feed use.
Key words: nutrition, fito-nutritive, weaned piglets

CONSIDERATIONS ON THE CURRENT METHODOLOGIES ASSESSING FORAGE DIGESTIBILITY IN RUMINANTS

OLTEANU Margareta, DRAGOMIR C., DIHORU Alexandrina, VOICU I.
Institute of Biology and Animal Nutrition, Baloteşti, Romania

Digestibility is a particularly important factor, next to ingestion, in assessing the nutritive value of forages. Currently, a large array of methods is available to assess forage digestibility in ruminants. New methods have been developed during the recent years assessing the differences between the apparent digestibility (throughout the entire digestive tract), the ruminal digestibility (degradability) and digestibility in the stomach (real, by pass, digestibility), avoiding thus the possible confusions.

Key words*:* methods, digestibility, ruminants

THE EFFECT OF SOME ADDITIVES USED IN FEEDIND OF GROWING FINISHING PIGS

POLEN T., KOVACS G., TĂPĂLAGĂ I., CRISTESCU M.
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

The experiment was carried out over a group of 28 growing finishing pigs, allotted into two equal groups. The control group (C) received a basal diet supplemented with a 1% premix – vitamins and microelements as oxides and salts mixed with maize flour-based diet; the experimental group (E) received the same diet supplemented with 1% premix made of vitamins and microelements as chelatated phosphoric glass on zeolite based diet. At the end of our research it was revealed that group (E) obtained a better growing gain (13.5%), a 7.68% greater feed intake and a feed conversion rate reduction of 5.33%.
Key words: growth-finishing pig, zeolites, microelements

THE EFFECT OF SOME FORAGE ADDITIVES USED IN FEEDING OF WEANED PIGS

POLEN T., POLEN Lilia
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

The experiment was carried out over a group of 24 weaned piglets, allotted into two equal groups The control group (C) received a basal diet supplemented with a 1% premix – vitamins and microelements as oxides and salts mixed with maize flour-based diet; and the experimental group (E) received the same diet supplemented with 1% premix made of vitamins and microelements as chelated phosphoric glass on zeolite based diet. At the end of our research it was revealed that group (E) obtained a better growing gain, 8%, greater feed intake, 3.65%, and a smaller feed conversion rate of 6.14% versus group (C).
Key words: weaned piglets, zeolites, microelements

MATHEMATICAL MODEL OF ANALYZING THE DEPENDENCE OF THECORPORAL MASS (G) IN FUNCTION OF LYSINE (L) AND METHIONINE + CYSTINE (M) AT BROILERS

POPESCU I.*, DRINCEANU D.*, GRIGOROIU E.*, LUCA I*, POPESCU Andreea**, CORMAN Sandra*
** Faculty of Animals Science and Biotehnologies, Timişoara*
*** Faculty of Economy, Timişoara*

This work presents a mathematical model of the corporal mass (g) dependence function of lysine (l) and methionine + cystine (m) at broilers. The mathematical model was deduced using the bibliographical source nrc 1994, unidimensional mathematical modes and the matlab program. Using the theory of mathematical modeling, a two-dimensional mathematical model was deduced. The relative errors between the values given by the model and those given by nrc 1994, at the end of nine weeks of growth vary from 0.09% to 2.49% and the total relative error is 1.27%. These small relative errors show that the obtained mathematical model determines with a good precision the values of the corporal mass (g) from lysine (ll) and metionine + cystine (m) at broilers.
Key words: broilers, mathematical model

MATHEMATICAL MODEL OF STUDYING THE DEPENDENCE OFENERGY (E) IN FUNCTION OF PROTEIN (P) AND METHIONINE + CYSTINE (M) AT BROILERS

POPESCU I.*, DRINCEANU D.*, GRIGOROIU E.*, LUCA I*, POPESCU Andreea**, CORMAN Sandra*
** Faculty of Animals Science and Biotehnologies, Timişoara*
*** Faculty of Economy, Timişoara*

This work presents a mathematical model of the dependence of energy (e) in function of protein (p) and methionine + cystine (m) at broilers. The mathematical model was deduced using the bibliographical source nrc 1994, unidimensional mathematical modes and the matlab program. Using the theory of mathematical modelling, a two-dimensional mathematical model was deduced. The relative errors between the values given by the model and those given by nrc 1994, at the end of nine weeks of growth vary from 0.18% to 1.26% and the total relative errors is 0.8%. These relative small errors show that the obtained mathematical model determines with a good precision the energy (e) necessary to the broilers, knowing protein (p) and methionine + cystine (m).
Key words: broilers, mathematical model

INFLUENCE OF FODDER NUCLEI ON GROWTH AND FEED UTILIIZATION FOR TURKEY BROILERS

STOICA I., DRĂGOTOIU D., MARIN M., STOICA L., PANĂ C, POGURSCHI E.

Faculty of Animal Sciences, Bucharest, Romania

Because a modern form of ensuring protein and amino-acids demands is extremely important for the turkey-hen broiler, bred in medium, small farms and in family poultry farms, the researches had in view to perform of some fodder nuclei (proteini-vitamin-mineral concentrates), differentiated on the four breeding stages. The research goal consisted in establishing the influence upon the bio-productive performances of different fish meals and soy grist percents in the nuclei, supplemented with synthetic acids and with an enzyme product, called Allzime Vegpro for improving the nutritive value of soy grist. During the experiment, we observed the broilers body weight, the daily average gain, the specific consumption, as well as the chemical composition of broilers carcasses. It was also established that the use of soy grist is considered economic in the presence of the enzyme complex Allzyme Vegpro using the dose of 1g/kg of concentrate feed.

Key words: fodder nuclei, turkey broiler, soy grist, enzyme product

VARIATION OF HEAT ENERGY IN DAIRY COWS FED ON DIFFERENT DIETS, ACCORDING TO THE METHOD OF DETERMINATION

VOICU Dorica *, VOICU I.*, BURLACU GH.*, PANĂ C **, IOANCĂ I.*

**Institute of Biology and Animal Nutrition, Baloteşti, Romania*
*** University of Agricultural Sciences and Veterinary Medicine, Bucharest, Romania*

The experiment was conducted on 8 primiparous Maramureş Brown cows and investigated the stages of energy degradation, particularly the heat energy related to the structure of diets. The cows weighing between 460-510 kg were assigned to 4 groups of 2 cows each. The experimental period lasted 150 days and consisted of four successive stages. The diets included roughages (leguminous + gramineous haylage and hay) and concentrate feeds (corn, peas and wheat bran). The values of heat energy determined as the difference between the metabolisable energy and the energy lost through milk were 5-12% higher than the values determined with the chambers of respiratory exchanges; these values correspond to the negative energy balance due to the body weight loss of the cows.

Key words*:* energy balance, dairy cows, diets

STUDY CONCERNING SOME PARTICULARITIES OF NODOSITIES FORMATION IN THE BIRDSFOOT TREFOIL (*LOTUS CORNICULATUS* L.)

DRAGOMIR N.*, VULCEAN Rosana**, DRAGOMIR Carmen**, PEŢ I. **, CRISTEA Corina*, RECHIŢEAN D.*, ŢINTOI O.*, SELEGEAN M.***

* Research and Development Center for Pasture Culture, Timişoara, Romania
** Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania
**** West University , Timişoara, Romania*

THE PAPER PRESENTS THE PLANTS DEVELOPMENT PHENOPHASES AND ROOTS PENETRATION DEPTH INFLUENCES ON THE NODOSITIES NUMBER IN BIRDSFOOT TREFOIL PLANTS ARE PRESENTED IN THIS WORK. ACCORDING TO THIS, IN THE FIRST YEARS OF VEGETATION, THE HIGHEST NUMBERS OF

NODOSITIES IS OBSERVED DURING THE FRUIT FORMATION PERIOD. THE HIGHEST NUMBERS OF NODOSITIES ARE FORMED (80% IN THE FIRST VEGETATION YEAR AND 90%B IN THE SECOND) ON THE 0-10 CM SOIL DEPTH.

Key words: birdsfoot trefoil, vegetation period, soil depth

RESEARCHES ON THE SEED PRODUCTION IN THE BERSEEM CLOVER IN THE PLAIN REGION OF BANAT

DRAGOMIR N.*, OPROI Cristina**, DRAGOMIR Carmen***

** Research and Development Center for Pasture Culture Timişoara, Romania*
*** Research and Development Center Lovrin, Romania*
**** Faculty of Animal Sciences and Biotechnologies Timişoara, Romania*

This work concentrate the researches made during 2001 – 2003, concerning the influence of the seeding row distance and seed amount on surface unit, on the seed production in the case of berseem clover. In the conditions of a normal year (2001) the seed production can increase over 60 kg/ha, comparing with the more arid years when seed production decreased with 62%. In average, the highest registered production yield (383 kg/ha) was observed in the case of 25 cm seeding row distance and 10 kg/ha seed amount on surface unit.

Key words: berseem clover, seed production, seedling row distance, seed amount, dryness

BACTERIOLOGICAL EXPERIMENTS ON SOIL AND PLANTS FERTILIZED WITH MANURE COMING FROM STABLE SHEEP

FILOTE M., FILOTE Elena, BOSINCIUC S.

Sheep Breeding Research and Development Centre, Popauti, Boto;ani, Romania

The use of organic fertilizers on surfaces destined to obtain fodders implies a major risk for the health of the animals and for animal production if they are not properly processed. Specialty literature says that by using the manure must and fresh manure to fertilize grasslands and pastures induced morbidity of 65% in adult bovines and of 85% in young bovines. The use in our experiment of partially fermented manure by introducing it the soil as an extra fertilizer to the totally fermented manure $31.4x10^5$ to Onobrychis Viciifolia culture blended with Bromus inermis and $13.4\ x10^5$ to silo crop culture. The consume of fodder (green grass and hay) from the surfaces sown with the mixture of herbs fertilized with the two categories of manure led to total morbidity in youngsters by 22% greater than in adults. From the two kinds of fodders eaten by the animals, the green grass induced a greater morbidity than hay.
Key Words: manure, fermentation, soil, plants

GROWTH BIOSTIMULATORS INFLUENCE UPON THE CHEMICAL COMPOSITION IN PERENNIAL FORAGE LEGUMINOSARUM

PEŢ I.*, DRAGOMIR N.**, DRINCEANU D.*, LUCA I.*, ŞTEF Lavinia*, DRONCA D.*, SELEGEAN M., DRAGOMIR Carmen****

** Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania*
** Research and Development Center for Pasture Culture, Timişoara, Romania
**** West University Timişoara, Romania*

Plant chemical composition is depending on various factors like: species, cultivars, plant age, pedoclimatical conditions and soil management. Biostimulants application has a positive influence both on the productivity and chemical composition of plants. Use of different biostimulators in alfalfa, can induce increases in crude protein content, up to 5.43%, crude fat content up to 1.44%.

In red clover are increases in crude protein content up to 0.98% can be observed after same applications. In birdsfoot trefoil increase in crude fat, up to 0.43%, is induced after use of biostimulators.

Key words: biostimulators, alfalfa, red clover, birdsfoot trefoil

THE STAGE OF REALISATION AND APPLICATION OF THE AMELIORATION PROGRAMME FOR BULLS RAISED IN THE CENTRE AND NORTH-WEST AREA OF THE COUNTRY

VELEA C.

Faculty of Animal Sciences and Biotechnologies, Cluj -Napoca, Romania

The periodic analysis of the stage in realization of animals' amelioration programmes, elaborated and adopted in time is a mandatory technical-scientific need, on which depends their subsequent periodic re-actualisation. This is the frame in which the present paper was elaborated, its results being also analyzed within a „round table" of all decision-maker representatives from the area and from the central level.

Key words: amelioration programme, cattle breeds

INFLUENCE OF THE DIETT STRUCTURE ON SOME BEEF PRODUCTION INDICES AT SLAUGHTERING IN ROMANIAN BLACK AND WHITE BULLS

ACATINCĂI S., CZISZTER L.T., STANCIU G., ERINA Silvia

Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

The influence of the feeding level on some beef production indices at slaughtering, such as: body weight, carcass weight, killing-out percentage, total meat in carcass, adherent tallow and bones in carcass was studied in the Romanian Black and white young bulls. Bulls that were fed a diet supplemented with 20 or 30% concentrates realized superior performances that those fed with a basic diet, as follows: body weight was 7.5-12.04% higher ($p<0.01$), killing-out percentage was 1.16-3.29% higher, carcass weight was 8.82-15.74% higher ($p<0.01$). Also, the total meat in carcass was 8.8 to 16% higher ($p<0.01$) in experimental groups than in control group.

Key words: Romanian Black and White bulls, beef production, feeding level

INFLUENCE OF THE DIET STRUCTURE ON SOME BEEF PRODUCTION INDICES AT SLAUGHTERING IN ROMANIAN SPOTTED BULLS

ACATINCĂI S., STANCIU G., CZISZTER L.T., ERINA Silvia

Faculty of Animal Sciences and Biotechnologies, Timişoara

The influence of the feeding level on some beef production indices at slaughtering, such as: body weight, carcass weight, killing-out percentage, total meat in carcass, adherent tallow and bones in carcass was studied in the Romanian Spotted young bulls. Bulls that were fed a diet supplemented with 20 or 30% concentrates realized superior performances that those fed with a basic diet, as follows: body weight was 8.8-13.3% higher ($p<0.01$), killing-out percentage was 1.44-2.35% higher, carcass weight was 10.4-15.96% higher ($p<0.01$). Also, the total meat in carcass was 10 to 16% higher ($p<0.01$) in experimental groups than in control group.

Key words: Romanian Spotted bulls, beef production, feeding level

STUDY ON H-F DAIRY COWS BEHAVIOR RAISED IN FREE-STALLS

BENCSIK I., PĂCALĂ N., STĂNCULEŢ Jana, BENCSIK Alena, DRONCA D.
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

The experiments were done on 25 cows raised in free-stalls on slatted floor in 25.5-31.5 m ^{2} boxes. In the experimental period the cows were fed with grass, silage and hay. The concentrates were fed during the milking time and the quantity depends on milk production of each cow. The dairy cows were watched every 10 minutes in 24 hours period for several days. We have observed that the primiparous and secundiparous cows are resting 1-2 hours less than the older cows. The time needed to ingest the forages is longer at primiparous and secundiparous. During 24 hours cows are spending 12-14 hours to rest, so is necessary to build comfortable and spacious pens. Cows are spending 5-6 hours to feed so we must provide a larger feeding area for each cow.

Key words: behavior, free-stall, H-F dairy cows

THE IMPORTANCE OF PERFORMING OPTIMUM BODY CONDITION AND USING IT IN PREGNANT ROMANIAN BLACK SPOTTED BREED DAIRY COWS

CALIN C., BUNGHIUZ Coculeana, GRIGORAS Sanda,
COLCERI D., GRAS M., MATEI Rodica
Research and Development Institute for Bovine Baloteşti

The present report proposes an optimum feeding of high yielding cows during the dry period. The expected results are: better conditioning for subsequent lactation, healthy progeny, easy calving, avoiding over conditioning (fat cow syndrome) and better using of foodstuffs. In order to optimize body condition we considered that fat depots represents a source of energy in early lactation, since energy involved in milk secretion is higher than energy intake. Changing body condition is an efficient way to evaluate changes of energy level occurring during lactation and dry period.
Key words: body condition score, dry period

EFFECTS OF MILK FEEDING PLAN ON BEHAVIOUR AND GROWTH OF CALVES 1. NUTRITIONAL BEHAVIOUR

CZISZTER L.T., STANCIU G., ACATINCĂI S., ERINA Silvia
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

Thirty one-week old Romanian Black and White calves were used to compare the nutritional behaviour when fed four different milk feeding plans. The feeding plans were: FP1 69 kg milk replacer in 10 weeks; FP2 45 kg in 10 weeks; FP3 47 kg in 12 weeks, and FP4 57 kg in 12 weeks. Calves were fed milk using an automatic feeding machine, and offered ad libitum water and a concentrate mixture. The observations were: milk allotted daily by the automatic machine, actual milk consumption, number of breaks, milk consumption speed, number of robberies, number of daily visits with (feedings) and without consumption (visits). Calves in all feeding plans learned during the first week on the automatic machine to consume the entire milk replacer of the ration. The behavioural data showed that the most suitable feeding plan, for the rearing conditions specific to the Didactical Farm Timişoara, was FP3 with a total duration of 12 weeks and a consumption of 47 kg dry milk replacer.
Key words: calves, milk feeding plan, nutritional behaviour

EFFECTS OF MILK FEEDING PLAN ON BEHAVIOUR AND GROWTH

OF CALVES 2. GROWTH PERFORMANCE

CZISZTER L.T., STANCIU G., ACATINCĂI S., ERINA Silvia
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

Thirty one-week old Romanian Black and White calves were used to compare the growth performance when fed four different milk feeding plans. The feeding plans were: FP1 69 kg milk replacer in 10 weeks; FP2 45 kg in 10 weeks; FP3 47 kg in 12 weeks, and FP4 57 kg in 12 weeks. Calves were fed milk using an automatic feeding machine, and offered ad libitum water and a concentrate mixture. Milk replacer was consumed in high proportion by calves in all the four feeding plans, 99.58% to 89.15% as reconstituted milk, and 97.36% to 86.36% as dry milk powder. The milk feeding plan had no significant effect on growth rate of calves (ADG varied from 759 g in FP1 to 728 g in FP4, p>0.05). The number of feeding periods (3 in FP1, 4 in FP2, and 5 in FP3 and FP4) and the overall consumption of dry milk replacer had a direct effect, while the number of days the feeding plan lasted (70 days in FP1 and FP2, and 84 days in FP3 and FP4) and the consumption of the reconstituted milk had an indirect effect on the ADG of calves. An equation was established to compute the ADG of calves taking into account these independent variables. The correlation coefficient of the equation with ADG was 0.68.
Key words: calves, milk feeding plan, growth performance

EFFECT OF BREEDS AND PERFORMANCE TYPES OF HORSES ON THE BREEDING PROCESS OF THE MORAVIAN WARM-BLOOD HORSE

ŠAMKOVÁ J., MISAŘ D., JISKROVÁ I.
Mendel University of Agriculture and Forestry Brno, Czech Republic

The Moravian warmblood is a strain of Czech warmblood. This strain is based on Austro-Hungarian stocks Furioso North-Star, Przedswit, Gidran, Catalin, Nonius and Shagya. The objective of the present study was to document the effects of individual factors of breeding the Moravian warm-blood horse on the development of its traits. For analytical purposes we selected the period of 1928 – 1960, which was divided into 3 eleven-year stages; the individual traits were analysed according to the breeds. In some cases the stud in which the stallions were reared was used as an ancillary criterion. Using the analysis of variance we found statistically highly significant differences in the proportions of the individual gene resources in all the stages of our studies (P<0.01). Multiple comparisons revealed that the stallions originating from the local Moravian stud were the most important genetic resource in all the stages (P<0.01). Stallions from Pohořelice and Kladruby represented another important source of variability. Oldenburg stallions played an important role in the process of improving robustness (1928 - 1938), while oriental horses were used in the period of breed improvement (1939-1949).
KEY WORDS: **HORSES, MORAVIAN WARM BLOOD HORSE, FACTORS OF BREEDING**

STUDIES CONCERNING SOME NUTRITIONAL ASPECTS IN JUMPING HORSES

BOCHIŞ Flavia, LUCA I., CZISZTER L.T., STANCIU G. TĂPĂLAGĂ I., ERINA Silvia

Faculty of Animal Science and Biotechnologies, Timişoara, Romania

The horse digestive characteristic needs a well balanced diet between fodders and concentrates. The number of feedings per day and the order of consumption for all forages and the water intake are crucial for a good digestion and health. The paper present a study made in 7 different stables

with sport horses. The feeding program, the components of the diets, the given quantities and the nutritional level assured was monitored for each group of horses.

Key words: sport horse, feeding program, forages, nutritional level

HORSE GENOTYPING

GEORGESCU S.E.., REBEDEA Mariana**, CONDAC E*., IONICA Elena*, DINISCHIOTU Anca*, COSTACHE Marieta*

**University of Bucharest, Faculty of Biology, Molecular Biology Center, Bucharest, Romania*
***Institute of Biology and Animal Nutrition, Baloteşti, Romania*

Recently, breeders have turned to molecular biology and they are using PCR (polymerase chain reaction) applied to the detection of short sequence repeats (microsatellites). Microsatellite markers are evenly distributed across genome and can be identified within DNA samples using PCR. In our experiment we analyzed 34/200 English Thoroughbred horses from Cislău haras, from which seven were complete family with Stock Marks Kit. For each generation an individual receive 50% of their genetic makeup from each parent; grandparents contribute 25%, and so on. Horses identification and offspring determination by amplification of the STR loci was realized using modern technology of DNA extraction and automatic genotyping. This technology is for the first time applied in Romania and provides a more efficiently and sensitive method for parentage and individual identification.

Key words: Thorougbred, microsatelite, genotyping

USE OF BIOCHEMICAL MARKERS IN PATERNITY ASSESSMENT IN HORSES

REBEDEA Mariana*, CUREU I.*, GHIŢĂ Elena*
GEORGESCU S.E., IONICĂ Elena**, COSTACHE Marieta****

**Institute of Biology and Animal Nutrition, Baloteşti, Romania*
***University of Bucharest, Faculty of Biology, Molecular Biology Center, Bucharest, Romania*

THE PAPER PRESENTS INVESTIGATIONS IN THE USE OF BIOCHEMICAL BLOOD MARKERS FOR PATERNITY ASSESSMENT. THE GENETIC STRUCTURES FROM LOCI TF, PA, ES, GC AND AL IN A POPULATION OF ENGLISH THOROUGHBRED HORSES WERE IDENTIFIED BY ELECTROPHORESIS USING POLYACRYLAMIDE AS MIGRATION SUBSTRATE. THE STUDY OF BIOCHEMICAL MARKERS IN HORSES PROVIDES IMPORTANT TOOLS TO ANIMAL HUSBANDRY PRACTICE BEING ONE OF THE MOST EFFICIENT, DURABLE AND ACCURATE MEANS TO IDENTIFY AN ANIMAL CONSIDERING THAT THE GENOTYPES ARE TRUE "IDENTITY PAPERS" OF AN INDIVIDUAL. THE RESULTS OF THIS STUDY ARE USED A WORKING BACKGROUND TO DEVELOP THE METHOD OF GENOTYPING WITH MOLECULAR MARKERS.

KEY WORDS**: HORSES, PATERNITY ASSESSMENT, BIOCHEMICAL MARKERS**

RESEARCHES ON THE PREPOTENCY OF SOME NONIUS STALLIONS REARED IN IZVIN STUD FARM - TIMIŞ COUNTY

TĂPĂLAGĂ I., NICULA Mărioara, BOCHIŞ Flavia
Faculty of Animal Sciences and Biotechnologies Timişoara, Romania

From 1971 to 1990, at the Izvin Stud Farm, Timiş County, for covering of the Nonius brood mares, 29 breeding stallions were used in reproduction. Only 14 stallions had more than 20 offspring during their whole reproduction activity. The total number of these offspring varies from 21 heads

for N XX stallion, to 66 heads for the N VII stallion. The total number of the offspring was 580, i.e. an average of 41.43 per head. Only 391 offspring (213 colts and 178 fillies) reached the age of 4 and were passed the qualification for the energetic capacity test; 254 offspring (43.79% of the total number, 153 colts and 101 fillies) have been retained for reproduction. After a thorough analysis of the quality of the breeding stallions' offspring, the results show that both stallions, N X and N XX can be considered as having both female and male offspring. The stallion TN 1 (Turf Nonius 1) can be considered as male breeder, whereas the stallions N XVI and N XXI as female breeder. The stallions N VII, N XIX and N XXI can be taken into consideration both as ameliorators and male and female breeders.
Key words**: offspring, stallion, prepotency**

RESEARCHES ON THE INFLUENCE OF AGE IN NONIUS STALLIONS AT THE TIME OF MOUNTING ON REPRODUCTIVE FUNCTION

TĂPĂLAGĂ I., NICULA Mărioara
Faculty of Animal Sciences and Biotechnologies Timişoara, Romania

In the Nonius variety bred at the Pădureni Stud Farm, then at the Izvin Stud Farm we monitored the results in reproduction of a number of 6 breeding stallions used over a longer period of time in relation to their age at the moment of mounting. Exploitation duration was between 10-19 years. Nonius CXV was used in reproduction till the age of 25 and it gave birth to a number of 198 offspring. The number of broodmares mounted by the 6 breeding stallions was of 1129 that mean 188 per stallion on the average. There were a fecundity percentage of 74.10% and the birth rate one of 70.80%, i.e. 3.40% and, respectively, 4.10% more than the average per stud farm for the same period of time. The number of sterile broodmares was of 292 individuals (25.40%) that of valuable products were of 60.40%, that of unfit ones was of 24.60%, and that of the dead ones before the age of 4 was of 16.02%.
Key words**: breeding stallion, broodmares, foals**

RESEARCH ON IMPROVEMENT POSSIBILITIES OF MILK YIELD IN BOTOŞANI BROWN KARAKUL SHEEP SUBPOPULATION

FILOTE Elena, FILOTE M., BOSÎNCIUC S, URSACHI Floarea
Sheep Development Research Center, Popăuţi, Botoşani, Romania

Under the current socio-economic conjuncture, getting greater amounts of milk commodities could make sheep breeding and exploitation more efficient. The selection of the brown type, followed by the appropriate matching of the couples with rams obtained from the best dairy ewes (record mothers) increased the milk yield by 37.4%, compared to the non-selected sheep of the same colour class. The indirect selection method according to the gain rate of the three-week old lambs, applied within the breed, combined with the selection according to the individual yield calculated on the basis of the regular controls proved to be the most adequate and we highly recommend it to increase the milk yield in Karakul breed.
Key words: Karakul, brown colour, milk, selection

MILK YIELD ASSESSMENT IN KARABASH SHEEP COMPARED TO TSIGAI SHEEP

GHIŢĂ Elena*, DRĂGĂNESCU C.*,REBEDEA Mariana*, CUREU I.*, JOITOIU Ruxanda**, POPESCU Valerica**
**Institute of Biology and Animal Nutrition Baloteşti, Romania*

***Animal Breeding and Reproduction Unit Teleorman, Romania*

The study involved a group of Karabsh sheep raised at IBNA farm and the sheep raised by 4 private farmers from Teleorman county, monitored for their official milk yield. The method of the "Checking coefficient" was used to measure milk yield in IBNA sheep, while the method recommended by the instructions in force was used to measure the milk yield in Teleorman county. The milk yield thus determined was compared to the milk yield of Tsigai sheep. Data analysis showed that Karabash sheep had 50 to 70% higher milk yield under production conditions than Tsigai sheep. The Karabash breed is sedentary unlike the Tsigai breed, which is transhumant. Karabash sheep are raised and used in a quite different manner than the one used in our country for Tsigai and Tsurcana sheep. The current system has to be adapted to the requirements of Karabash sheep so this breed can be raised on a higher scale.
Key words: Karabash sheep, Tsigai sheep, milk yield

ASSOCIATION OF THE BLOOD GROUP FACTORS WITH THE QUALITATIVE FEATURES OF THE LAMB PELTS IN THE BOTOŞANI KAKARUL BREED

HRINCĂ Gh.*, URSU S.*, PĂDEANU I.**
**Station of Research and Development for Sheep, Popăuţi-Botoşani, Romania*
***Faculty of Animal Science and Biotechnologies, Timişoara, Roamnia*

The paper describes an application of the blood group systems in sheep belonging to the Botoşani Karakul breed. It concerns the association of the antigenic determinants with the lamb pelt production. This correlation type had in view the grouped comparison of the frequencies of the eight blood group factors in the both, manifest and hidden, depending on each qualitative specific feature of the lamb pelts. The causes of these associations are discussed. The detection of these correlations should be an excellent instrument for the early selection of sheep to improve the lamb pelt production in the Botoşani Karakul breed.
Key words: blood group factor, lamb pelt, Karakul sheep

LES PRINCIPALES PROPRIÉTÉS PRODUCTIVES DES OVINES TSIGAIE DU NOYAU DE SÉLECTION DU TYPE DÉSIRÉ POUR LAINE-VIANDE-LAIT

MAŞNER O., LIUŢCANOV P.

Faculté de Zootechnie et Biotechnologies (UASM), Chişinău, R. Moldova
Le laboratoire pour les ovidés à laine semi fine (INZMV), v. Maximovca, R. Moldova

The studies were hold on the sheep of Tsigaie breed for wool-mutton-milk after that, was formed the breeding kernel which included in all 936 heads (19 rams, 698 mother-sheep, 9 young sheep and 210 sheep for reproduction). The intensity of selection was 31.66; 41.9; 5.69 and 37.77% according to group. Selected sheep groups nave a higher possibility for production: rams-body weight 81.84 kg, wool production- 7.48 kg, mother sheep's corresponding 53.80 and 4.74 kg, young sheep for reproduction (male) – body weight 62.89 kg, wool production- 8.50 kg and length of lock- 14.45 cm, young sheep for reproduction (female)- 42.47 kg, 5.62 kg, 14.31 cm correspondingly. The selection's differences in groups of selected sheep allowed to receive a valuable animal and to active the waiting genetic progress. The economical effect from the realizing of production possibility the sheep work out 84.0 lei/year, where 90% for body weight, and only 10% are for wool production.

Key words: Tsigaie, breeding kernel, the higher production

THE ANALYSIS OF ESTRUS INDUCTION AND SYNCHRONIZATION IN MERINO EWES THROUGH NON-HORMONAL METHODS

MOISE Lavinia, MOISE V., STIRBU Clara, DUNEA D.

Faculty of Enviromental Engineering and Biotechnologies, Târgoviste, Romania

The profitability of sheep breeding is significant when they are grown in optimal extensive conditions, and when an intensive reproduction with a big number of lambs is obtained. These lambs are valorized in periods with maximal solicitations. A mass inhibition of estrus occurrence is initially required to achieve the synchronization. This paper presents the non-hormonal methods of estrus induction and synchronization in Merino ewes, that is the internal and external factors. Hence, in the analyzed population, a higher fecundity percent, with about 4% was observed in the groups of ewes that received daily 200-300 g of concentrates in the ration during the preparation for mating, than in the groups that did not received supplements. Merino breed is included in the group of sheep breeds with long reproduction season, which is offering the possibility to be used more efficient.

Key words: ***temperature, light, age, feeding, estrus induction, estrus synchronization***

STUDY OF THE INDUCTION AND SYNCHRONIZATION OF THE OESTRUS IN SHEEP FROM MERINO BREED THROUGH THE APLICATION OF THE HORMONOTHERAPY WITH PROGESTINS

MOISE Lavinia, ŞONEA C., MOISE V., MANEA L.

Faculty of Environmental Engineering and Biotechnologies, Targoviste, Romania

The intensive reproduction systems which are used to produce lambs for meat (3 births in 2 years or 2 births in one year) are not possible in a natural way only by using breeds with a very long sexual season (Merino breed) or practicing the early weaning and the induction of the oestrus with treatments that contain different hormonal substances. Oestrus induction and the synchronization of sheep could be done mainly by progesterone and progestin administration along with or in association with PMSG. The administration of this medicine is administration parentheraly, orally, subcutaneous by using implants and vaginally by using sponges impregnated with progesterone. The treatment is applied for a period of time equivalent with at least the period of existence of the cyclical bodies. When the treatment finishes, the level of the progesterone suddenly decreases and it is possible the development of the ovarian follicles by reaching the phase of the dehiscent follicle and results the synchronization of the oestrus and the producing of the ovulation.

Key words: ***sheep, progestin, oestrus induction, oestrus synchronization***

ÉTUDE DES PARAMÈTRES BIOCHIMIQUES À LA RASE OVINE CHAROLLAIS, IMPORTEÉ EN ROUMANIE

PĂDEANU I.*, FALCĂ C.**, TORDAI Timea*,. HRINCĂ Gh.***, BARNA Corina**

** Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania*
*** *Faculty of Veterinary Medicine, Timişoara, Romania*
**** S.C.P.C.O. Popăuţi-Botoşani, Romania*

Investigations were carried out at SC Emiliana SRL - sheep farm Valcani. In this farm a flock of Charollais sheep (237 ewes and 20 rams, 9 month old) was imported from the southern part of France in October 2003. The study shows that some of the important biochemical parameters (glucose, albumin, urea and phosphorus) are within normal limits, but calcium and magnesium are below normal levels. The same situations were found in young rams (10 month old) of the Transylvanian Merino sheep breed. From all the biochemical parameters analyzed for the Transylvanian Merino young rams, only urea (13.2 mg/dl) has a significant ($p<0.01$) low plasmatic level, 95.4% compared to Charollais young rams fed with 500 g extra daily compound feed.
Key words: Charollais sheep breed, Transylvanian Merino sheep breed, biochemical parameters

THE INFLUENCE of SOUND STIMULATION DURING HATCHING ON THE MORTALITY OF PYGMY GROOSES

HLUCHÝ SVäTOSLAV
Slovak University of Agriculture in Nitra, Slovak Republic

In the work the influence of the artificial sound stimulation during incubation on the speed of the duck hatching as well as on their mortality during that period was studied.In the experiment, the Pygmy groose breed set eggs was used. They were hatched in four hatcheries. The eggs of the first two hatcheries (control groups ka and kb) were not sound stimulated. in the other two groups the set eggs were, from the very first hour of hatching, stimulated by the ,,knocking,, sound from an electronic sound generator (experimental groups "a" and "b"). For the stimulation, the sound with the amplitude of power 1250 mv and time interval 176 ms was applied. the fastest hatching process was recorded in the groups with sound stimulation. the "a" experimental group was The fastest, the Pygmy grooses were hatched after 825.00 ±.22 hours, when compared with the "Ka" control group (hatching after 834.13 ± 2.30 hours of incubation) the result is statistically significant ($P < 0.05$). in the "b" experimental group the ducks were hatched after 829.00 ± 0.87 hours of incubation. The difference is statistically significant ($P < 0.05$) when compared with the respective control group "Kb" in which ducks were hatched after 833.63 ± 2.77 hours of incubation.
Key words: hatching, sound stimulation, Pygmy groose, mortality

GANDER EJACULATES MONITORING DURING REPRODUCTIVE SEASON

SVETLIK I.S., WEIS J.
Agricultural University Nitra, Faculty of Agrobiology and food sources, Slovak Republic

Domestic geese are seasonal birds and among all poultry species, have the lowest reproductive capability, also poor semen quality and low egg production. Geese can live up to 20 years or more, but their reproductive potentials remain on acceptable level only up to the fifth reproductive season. They are usually kept for 3 or 4 seasons in breeding practices, however in the first reproductive season the egg fertilisation and hatchability rates are lower than those in the next season. Our intention is to improve reproduction parameters in the last major geese-breeding farm in Slovakia, by analysing semen quality with intention to introduce insemination. Insemination represents a real and effective alternative for natural breeding, monogamy and low quality semen production.

Key words: poultry; gander; semen quality

MATHEMATICAL MODELLING OF TURKEY BROILERS GROWTH PROCESS

PÂRVU Monica*, BURLACU R. **, GROSSU Doina ***, DINU Cristina*, MARMANDIU A.****

**Faculty of Veterinary Medicine "Spiru Haret", Bucharest, Romania*
***Faculty of Landed Improvement, USAMV Bucharest, Romania*
***Institute of Biology and Animal Nutrition Baloteşti Bucharest, Romania
*****Faculty of Veterinary Medicine, USAMV Bucharest, Romania*

For work out a mathematical modeling, it was study the growth process on turkey broiler. The experiment used 300 one day-old turkey chicks raised on the floor, assigned to 5 randomized groups (one control and four experimental groups). The experimental period was of 98 days. The chicks received isocaloric diets with three levels of feeding (ad libitum, 90% and 80% of ad libitum) and three protein levels (according to the standard and lower with 5% and 10%). The growth energy and the growth speed were significantly influenced by the level of feeding and by the dietary protein level. The highest daily weigh gain was assessed, by mathematical modeling at 118 g, achieved at 75 days. The weight at maturity (22 weeks) was assessed, by mathematical modeling, with the highest value being 13664 g.
Key words: mathematical modeling, turkey

L-LYSINE AND DL-METHIONINE NUTRITIVE EFECT ADMINISTRED TO LAYING HENS

SIMIZ Eliza*, DRIHA Ana*, DRINCEANU D.*, LUCA I.*, SIMIZ F.**
**Faculty of Animal Sciences and Biotechnologies, Timişoara, România*
***Faculty of Veterinary Medicine, Timişoara, România*

The experiment was carried out over 69 Tetra SL layers, at a 27-36 weeks of age. Layers were alloted into 3 groups containg 23 layers, each one, and they were given a different protein level diets (17, 16 and 15% respectively). Diets were supplemented with DL-methionine and L-lysine until the methionine and lysine reached the 0.38% and 0.80%, respectively, level. The best egg production was registered to the group E2 (1417 eggs/period of time, with an average of 141.7 eggs/week), with a significantly difference ($p \leq 0.05$) versus group M and the same difference versus group E1. Group E2 stands out regarding egg mass (8088.39 g), but the significantly differences between groups were cancelled, by make up (to group M and E1) of lower egg production with heigher individual masses.

Key words: laying hens, protein level, amino acids

HETEROSOMAL GENES INVOLVED IN GENETIC DETERMINISM OF PLUMAGE COLORS AND SEX DETERMINATION IN POULTRY

PRICOP FL.

S.C. Avicola Bucureşti S.A., Bucureşti, Romania

. The experimental results and also the results obtained in farm conditions in broiler hibrid "ROBAR SL" resulted from red Rhode Island and barat Marans, wich can be sexed by the color of feather, shows that the color of plumage at one day hibrid chicken obtained from homosigot parents gold and barat is the result of heterosomal genes. The sexing of the one day hibrid chicken after the color of feathers can be explained by the presence of barat gene in W chromosome. The activity of this gene is influenced by the epistatic effect of a heterosomal gene placed also in the W chromosome. For a

better understanding of our research we have made a genic approachement of genetic determinism of sexes. We propose the introduction of the concept of sex dominant gene, wich can be noted SDW and is placed in the W chromosome. The SDW gene has two functions: sex dominant gene in relation with her recesive allel wich can be noted sdw , placed in the Z chromosome; epistatic gene in relation with the gene that determin plumage color, placed in W chromosome. By crossing F1 descendents between them selves we have obtained in generation F2 three genotype categories, wich showed that the females from generation F1 are heterosigots.
Key words: gene, barat, gold, epistatic, heterosoms, hipostatic-dominant, hipostatic-recesive.

ASPECTS CONCERNING THE SUINA BREEDING IN JUCU COMMUNE INCIDENCE, CLUJ COUNTY

CORNOIU Il.

Faculty of Animal Husbandry and Biotechnology, Cluj-Napoca, Romania

STARTING FROM THE EXTENSION NECESSITY OF SUINA BREEDING PRACTICE IN THE POPULATION FARMSTEADS, IN THE PRESENT STUDY WE PROPOSED A CONCISE PRESENTATION OF THEIR BREEDING AND EXPLOITATION SITUATION IN A COMMUNE FROM CLUJ COUNTY. TO IDENTIFY SOME IMPROVING POSSIBILITIES OF THE SUINA BIOLOGICAL MATERIAL DESTINED FOR REPRODUCTION AND THE EFFICIENT EXTENSION OF THIS SPECIES BREEDING PRACTICE, WE BEGAN WITH THE ANIMAL ASSESSMENT FROM JUCU COMMUNE INCIDENCE, CLUJ COUNTY AND WE HAVE DONE A STUDY CONCERNING SOME MORPHOLOGICAL FEATURES IN PARENTAL FORMS.

KEY WORDS**: SUINA, MORPHOLOGICAL FEATURES**.

ESTIMATES REGARDING THE INFLUENCE OF TECHNOLOGICAL ENVIRONMENTAL FACTORS CONCERNING SOWS REPRODUCTION

CRÎNGANU Iuliana, DRĂGOTOIU Tomiţa

Faculty of Animal Sciences, Bucharest, Romania

One of the important technological factors that influence the reproduction performances is represented by the number of animals in one dock. Simionescu D., when experimenting the reproductiv behavior of sows from the mounting-pregnancy dock, reached the conclusion that depending on the density and the size of the dock we can get a bigger fertility index with the values between 84.3-90.6% at the sows from the dock for 7-9 heads that have an area of 1.8-2.1m^2/head. The improvement concerning the puberty and the correct manifestation of being in heat age decrease can be obtained through improving the growth conditions, male exposer, hormone indices and selection. In lactation, if we consider the enlargement of the nursed lot and the improvement of the speed which the piglets grow, we can estimate that the daily progress of the piglet lot which is a very good indicator of the sow`s milk production.
Key words: reproduction, sows, technological environmental factors

THE INVESTIGATIONS OF ANTIOXIDANTS IMPACT ON BOAR'S SEMEN FERTILIZATION ABILITY

MARANDICI Elena*, DARIE G.**, GRANACI Vera*

**The Agrarian University, Republic of Moldova*

***The National Institute of Animal Husbandry and Veterinary Medicine, Republic of Moldova*

It were tested four types of diluents used for boar's semen. The best result of sow's fertilization (77.8%) was achieved by using of M22 antioxidant included in composition of diluent. This

diluent (D IV) can be successfully used in dilution of boar's semen and incubation during 5 days so it allows to maintain spermatozoa's fertilization ability.

Key words: boar, sow, semen, diluent

DEVELOPMENT OF MUSCULAR, ADIPOSE AND OSSEOUS TISSUE IN COMMERCIAL HOGS DEPENDING ON AGE AND WEIGHT

PETROMAN Cornelia

FACULTY OF FARM MANAGEMENT TIMIŞOARA, ROMANIA

Hog live weight increases progressively from birth to slaughter, while mean daily gain decreases with age, after a progressive increase by 189 days, though corporal weight increases. The share of muscular, adipose, and osseous tissue in the carcass is different, as it is influenced by age and weight. Muscular tissue deposits are at their maximum at a weight of 105.712 kg, then they diminish, adipose tissue sets more slowly in young animals, but they reach their maximum at the age of 210 days (25.18%). Osseous tissue has a higher share in young animals, with a growth rate greater than the animal's general growth.
***Key words**: commercial hogs, tissues, growth gain, ratios, influence, age, and weight*

HISTOLOGICAL EXAMINATION OF VAGINAL SECRETIONS IN SOWS DURING PUERPERAL AND LACTATION PERIODS

PETROMAN Cornelia

FACULTY OF FARM MANAGEMENT TIMIŞOARA, ROMANIA

After expulsion of foetuses and of foetal envelopes, follows a period of recovering of the organism of the parturient, in general, and of genital apparatus, in particular. The interval during which morphological and physiological changes of gestation regress, tending to re-establish the general state before gestation, is called puerperal period. On sows, the most important involution changes take place at the level of uterus. Uterus metabolism intensifies, and the number of histiocytes, lymphocytes, leukocytes, and eusinophytes increases stimulation of macrophages. They have identified in the vaginal secretions during the puerperal period different types of cells, such as: neutrophil granulocytes, cocobacillar and polymorphous flora, dead epithelial cells, pavimentary cells, and levuric cells, with variable share during the 40 days of investigations, but within normal limits, attesting the possibility of a normal replication of the reproductive cycle.
Key words: puerperal period, estrum cycle, vaginal secretions, leukocytosis

THE SHARE OF CEREALS OF COMBINED FORAGE STRUCTURE IN MEAT SWINE

PETROMAN I.

FACULTY OF FARM MANAGEMENT TIMISOARA, ROMANIA

If a swine raiser has proper equipment (that need considerable investments), if he own land to produce basic cereals for combined forage, and if he has enough knowledge in the field, he can

produce himself combined forage for meat hogs. In this situation, the other ingredients for combined forage (grit, animal meals, vitamin and mineral supplements, forage additives, etc.) must be purchased from commerce. Making up recipes for animal farms was done taking into account the fact that the mixture is between a cereal and a soy grit that has to meet two requirements: to supply the necessary lysine and energy. The forage obtained by associating the three cereals (barley, maize, and wheat) has an energetic value (kcal/kg) between 3080-3324 kcal/cal. As the share of cereals produced on the farm of the combined forage for meat hogs (60-100 kg) meets the energetic and lysine requirement structure necessary to the mean daily gain of 700 g, the recommended forage shall contain 80.2% wheat, 16.8% soy grit 48, and 3% vitamin and mineral supplement – the most costless forage despite the fact that meat hogs need to get 2.5 kg per day per head.
Key words: meat swine, digestible energy, essential amino acids

HABITAT AS ENVIRONMENT IN SWINE

PETROMAN I.

FACULTY OF FARM MANAGEMENT TIMISOARA, ROMANIA

Biologically and psychologically, habitat represents the inhabited territory of a certain animal, or of a certain species, or of a group of species, within which the animal(s), in our case, swine, find uniform and acceptable life elements and conditions, and to which they have adapted. Habitat has a certain influence on organism and psychology; it corresponds to some biological – protection from cold or heat, or from different dangers – and psychological necessities – rest, safety, and relaxation. Habitat is also a refuge and a geometrical place for affection, the space in which relationships between swine occur as they like it to – sows feed piglets, sleep together as well as other hogs, even if at a certain time they reject each other. Space as a habitat is disputed when swine live in the open, or when it is too much for them – yard, garden, forest, etc. In the conditions of intensive swine raising, space is compartmented most of the times, specially arranged, which reduces habitual disputes or even annihilates them. Nevertheless, limited, unorganised, nor administered habitat results in troubles, both physical and psychical. Depending on the way in which changes occur in swine habitat, this can be monotonous, periodical, erratic, or sequential.
Key words: swine, habitat, household system, and industrial system.

Levels of cobalt, nickel, cooper and manganese in fishes from the Danube River

ANDREJI J., STRÁŇAI I.

Slovak Agricultural University in Nitra, Faculty of Agrobiology and Food Resources, Slovakia

Concentrations of Co, Ni, Cu, and Mn were determined in the muscle, liver and kidney of five fish species (Barbel – Barbus barbus, Prussian Carp – Carassius gibelio, Roach – Rutilus rutilus, Sterlet – Acipenser ruthenus, and Northern Pike – Esox lucius). The fishes were caught in June–September 1997, and March–April 1999, in main stream of the Danube River (Slovakia), between 1720–1766 r. km. The ranges of concentrations in muscle, liver and kidney (mg.kg^{-1} wet weight) were as follows: Co 0.01–0.37, 0.01–1.11, 0.01–1.31; Ni 0.02–0.47, 0.01–0.73, 0.05–1.07; Cu 0.06–2.46, 3.32–45.24, 1.99–29.03; and Mn 0.29–0.88, 0.39–4.20, 0.45–4.79, respectively. The concentrations of some metals exceeded hygienic limits for a human consumption use.
Key words: heavy metal, accumulation, fish, Danube River, Slovakia

CONTRIBUTION FOR OBTAINING OF SOME PRODUCTION PERFORMANCES IN CONSUMABLE TROUT,

BRED IN FLOATABLE FISH POUNDS

BOARU Anca, VODĂ R. M. *, CERBU Gh. ***

**Faculty of Animal Husbandry and Biotechnologies, Cluj-Napoca, Romania*
***Salmonid Complex of Brădişor-Lotru, Romania*

THIS WORK PAPER TRIES TO OFFER ONE OF THE SIMPLEST AND FAVORABLE CONTROL AND CONSUMABLE TROUT PRODUCTION INCREASING SOLUTIONS. BESIDE A CONCISE DESCRIPTION OF THE CONSUMABLE TROUT BREEDING IN FLOATABLE FISH POUNDS, IS PRESENTED ONE OF THE PROBLEMS WITH THE FISH BREEDER ARE CONFRONTED IN WINTER PERIOD –SURFACE WATER FREEZING. THE FISH DENSITY INCREASING IS ONE OF SOLUTIONS THROUGH WE CAN SUCCEED TO HAVE NOT IN WINTER "ICE BRIDGE", AND THE FEEDING AND THE OXYGENATION TO BE TWO PROCESSES STRICTLY CONTROLLED ALSO IN THIS PERIOD. ALSO, IN COLD SEASON WE HAVE THE POSSIBILITY TO REGISTER MINIMAL DEATH RATES AND EVEN TO OBTAIN A WEIGHT GAIN THAT IS NOT NEGLIGIBLE.

KEY WORDS**: TROUT, FLOATABLE FISH POUNDS**

CONTRIBUTIONS TO THE KNOWLEDGE OF EMBRYOGENESIS IN CARP (*CYPRINUS CARPIO* L.)

GROZEA A., BURA M., POPESCU V., ILIE Daniela, MUSCALU-NAGY R., BĂNĂŢEAN-DUNEA I., MUSCALU-NAGY Cristina
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

The studies were carried out in April-May 2003 on 90 carp embryos obtained by mean of artificial fertilization. Morphological aspects of embryos were continually followed and their developmental stages were established. The time elapsed from fecundation was recorded, and morphological aspects shown by greatest number of embryos were described. We distinguished seven periods in embryogenesis of carp: zygote, cleavage, blastula, gastrula, segmentation, pharingula and hatching. Like in many other cyprinids, the developing eggs of carp contain no structural lipids in the form of droplets. Embryos in pharingula period showed an elongation of caudal part above the yolk and this pull out a part of the yolk in the form of an elongated diverticulum connected with the embryo. Results of the studies described in this paper, observations, and conclusions drawn from our earlier research on embryos of zebrafish and goldfish show that embryogenesis in cyprinids is not very diversified but more complex than it was realized in previous studies described in the literature.

Key words: carp, embryo, development.

TECHNOLOGY, DESIGN AND MANAGEMENT OF CIRCULAR TANKS USED IN AQUACULTURE

IORDACHE G.*, NICOLESCU Carmen*, CRISTEA V.**
„Valahia" University Târgovişte, Romania
„Dunărea de Jos" University Galaţi, Romania

This paper reviews some of the current round culture tank, design and management techniques being employed to lower system costs and achieve increased productivity. Possible mechanisms and the associated engineering criteria used to design water inlet and outlet flow structures, waste

feed observation structures and crowding and grading structures for large circular tanks were described. The discussion was limited to tank systems, but can be generally applied to either flow-through designs or water recirculating systems.
Key words: circular tank, inlet flow, outlet flow, fish culture management

MANAGEMENT OF WATER QUALITY IN RECIRCULATING SYSTEMS

IORDACHE G.*, NICOLESCU Carmen*, CRISTEA V.**
„Valahia" University Târgovişte, Romania
„Dunărea de Jos" University Galaţi, Romania

Because the productivity in aquaculture is established by the water quality, it is necessary to improve its parameters near their optimal values. The recirculating culture systems are isolated systems where the quality of the water is a result of the transformation of its chemical compounds. The physical and chemical status of the water is established by the chemical interactions between the compounds of the water and by the activity of the organisms living here. This study tries to present the most important physical and chemical parameters affecting water quality in recirculating culture systems (temperature, salinity, pH, alkalinity, carbon dioxide, dissolved oxygen, ammonia, dissolved organics). The technological recommendation made will provide data to obtain a high productivity in aquaculture enterprises.
Key words: water quality, recirculating systems, aquaculture, water management

STUDY ON THE BIOLOGICAL CYCLE OF *DAPHNIA MAGNA* IN LABORATORY CONDITIONS

MUSCALU-NAGY Cristina, BURA M., GROZEA A., DUMITRESCU Gabi, MUSCALU-NAGY R., CONDURARU Carmen

FACULTY OF ANIMAL SCIENCES AND BIOTECHNOLOGIES, TIMISOARA, ROMANIA

THE PAPER AIMS TO ESTABLISH THE AVERAGE OFFSPRING NUMBER BY DAPHNIA MAGNA FEMALE, THE TIME PERIOD BETWEEN HATCHING AND SEXUAL MATURITY, THE STUDYING OF SOME ASPECTS REGARDING THE MOLTING. THE ESSAYS TOOK PLACE IN TWO CONSECUTIVE STEPS: THE OBSERVATION OF MATURE DAPHNIA UNTIL THEY BREED NAUPLII, AND THEN THE STUDYING OF THE DEVELOPMENT STAGES OF JUVENILES. THE AVERAGE NUMBER OF PRODUCED NAUPLII BY A MATURE FEMALE WAS 25.28 AND BY A YOUNG FEMALE AT ITS FIRST BREED WAS 19.14. PER POPULATION, IT WAS ESTABLISHED THAT THE AVERAGE NAUPLII NUMBER WAS 22.21. A DAPHNIA, FROM THE HATCHING MOMENT, PASSING THROUGH THE NAUPLII STAGE AND REACHING THE SEXUAL ADULTHOOD MOULTS IN AVERAGE OF FIVE TIMES.

Key words: *Daphnia magna*, nauplii, juvenile, moulting, biologi

CONTRIBUTIONS AND NEW PRINCIPLES IN SALMONID BREEDING IN FLOATABLE FISH POUNDS

VODĂ R.M., BOARU Anca
Faculty of Animal Husbandry and Biotechnologies, Cluj-Napoca, Romania

By this work paper the authors propose to keep the advantage majority, which can be offered by the breeding and exploitation system of the consumable trout in floatable fish pounds and to offer solutions, which can considerably reduce the initial investment price of a such complex. After a

concise description of the consumable trout breeding system in floatable fish pounds, the work paper presents a new construction conception that means the improvement as constructive regards of such system that is the breeding of consumable trout in suspended fish pounds.
Key words: consumable trout, suspended fish pounds

HYDROLOGICAL REGIME INFLUENCE ON MELIPHEROUS HERBACEOUS PLANT GROWTH AND THEIR APICULTURAL PRODUCTIVITY IN DANUBE DELTA

CHIRILA Aurelia*, PATRUICĂ Silvia**, COVALIOV S.,***

CUZIC Mariana*, COCLEA Lilica********

** Institutul de Cercetare-Dezvoltare pentru Apicultura, Bucuresti, Statiunea Zonala Tulcea, România*
*** Universitatea de Ştiinţe Agricole şi Medicină Veterinară a Banatului, Timişoara, România*
**** Institutul de Cercetare-Dezvoltare Delta Dunarii, Tulcea, România*
***** Institutul de Cercetări Eco-Muzeale, Tulcea, România*
****** Asociaţia Crescătorilor de Albine „HERA", Tulcea, România*

Generally, is well known that meteorological factor evolution is influencing plants development. Present paper's aim is to establish the degree of hydrological level influence on Danube Delta melipherous herbal plants development and nectar secretion. The used method was periodically determination of growth phases of Mentha aquatica, Stachys palustris, Oenanthe aquatica and Lythrum salicaria, control weigh-meter method and palinological analyze of harvested honey in this period and hydrological level evolution in 2001-2002 years. From the obtained data was concluded that in 2001, when waters was sudden retreated from the floodable areas being followed by drought the observed melipherous plants were strongly affected in their development until irreversible fading phase whit the consequence of nectar secretion suppression.

Key words*:* hydrological regime, melipherous herbaceous plants, apicultural productivity, Danube Delta

RESEARCHES CONCERNING MOTHER BEE'S (QUEENS) BEHAVIOR IN HIBERNATION BEE FORMATION PERIOD IN NORTH DOBROGEA AREA

CHIRILA Aurelia*, PATRUICĂ Silvia**, COVALIOV S., CUZIC Mariana****, COCLEA Lilica********

** Institutul de Cercetare-Dezvoltare pentru Apicultura, Bucureşti, Statiunea Zonala Tulcea, Romania*
*** Universitatea de Ştiinţe Agricole şi Medicină Veterinară a Banatului, Timişoara, Romania*
**** Institutul de Cercetare-Dezvoltare Delta Dunarii, Tulcea, Romania*
***** Institutul de Cercetări Eco-Muzeale, Tulcea, Romania*
****** Asociaţia Crescătorilor de Albine „HERA", Tulcea, Romania*

Queens (mother bee's), prolificacy is strongly influenced by their genotype, their age, food and bee's families strength. Present paper aim is to establish the existence of influence factors concerning queens lying duration and former period of hibernation bee. The used method was capped young bee's quantity measurements at 30.09.2003, which was the base in queen lying limit date estimation. That for, four lots A, B, C, D, was taken in study. They differ by queen's age, stimulation and locations. Bee's families from A and B lots (queens - introduced before the linden harvest) haven't any capped young bee's, whereas B and D lots (queens - introduced after the sunflower harvest) have had capped young bee's, indicating that queen's lying duration is influenced also by age of different categories of

working bee's from the family.

Key words: mother bee, queen, behavior, ecology, North Dobrogea.

L'ETUDE CONCERNANT SUR LA COMPOSITION CHIMIQUE DU PROPOLIS

EREMIA N., DABIJA Tatiana
L'Université Agraire D'Etat de Moldavie

The study under the chemical composition of propolis: was study the chemical composition of propolis till the active period, and the maintenance of aminoacids and macro- and microelements. Was established that the initial water in propolis was between 2,09 -2,49 %, but hygroscope water was between 3,89-6,25%. The quality of propolis depends on the period of collection till the active period.Propolis after collecting in spring has a composition richer in aminoacids and macro- and microelements.

Key words: bee, propolis, aminoacids, macro- and microelements.

THE STUDY IN REGARD TO MONITORING OF MELLIPHEROUS TREES BELONGING TO LIPOVA FORESTRY DEPARTMENT

PĂTRUICĂ Silvia*, BURA M.*,DRONCA D.*, CHIRILĂ A.** OPREA I., BĂNĂŢEAN DUNEA I.****

** Faculty of Animal Sciences and Biotechnologies Timisoara, România*
***The National Institute for Research and Development in Apiculture, Tulcea, România*
**** Forestry Division, Timişoara, România*

This paper presents a study on monitoring of melliferous trees from Lipova Forestry Department. The study took place along the year 2003, in which period we look at: monitoring of mellipherous trees from this area, the blooming moment, the total amount of honey obtainable, and finally we established the number of bee families, which can be supported on Lipova Forestry Department area. The species of mellipherous trees are represented by: oak, durmast turkey oak, italian oak, hornbeam, linden, acacia, fir and beech, which cover a total area of 23.230ha. After processing the obtained data from our researches resulted that mellipherous trees belonging to Lipova Forestry Department can ensure in favorable forecast conditions harvests for care and production, for 3523 bee families.

Key words: bee, mellipherous trees, forestry, monitoring.

THE STUDY IN REGARD TO MONITORING OF MELIPHEROUS TREES BELONGING TO SĂVÂRŞIN FORESTRY DEPARTMENT

PĂTRUICĂ Silvia*, BURA M.*, DRONCA D.*, CHIRILĂ A.**,

OPREA I., BĂNĂŢEAN DUNEA I.****

* Faculty of Animal Sciences and Biotechnologies, Timişoara, România
**The National Institute for Research and Development in Apiculture, Tulcea, România

*** Forestry Division, Timişoara, România

This paper is presenting a study on the mellipherous trees from Săvârşin Forestry department. The study was made during the year 2003,when it has been inventoried the mellipherous trees from the area, the flowering period was determined and also the amount of honey that could be obtained. In the end, the number of bee families that can be kept on the area of Savarsin Forestry Department was calculated. The mellipherous trees from this area, are represented by: beech (29%), durmast (17%), turkey oak (13%), italian oak (3%), hornbeam (17%), linden (8%), spruce (3%), fir (2%) and oak (8%); these trees occupy a total area of 24463 hectare. After the data has been analyzed, it resulted that the area of Savarsin Forestry Department can ensure a mellipherous base for 6163 bee families.
Key words: bee, mellipherous trees, monitoring.

THE INFLUENCE OF THE BIOFERTILIZATION OF VESICULAR-ARBUSCULAR MYCORRHIZAL TYPE ON THE MULBERRY LEAF PRODUCTION

BRAILOIU TĂNASE Doina

Commercial Society SERICAROM SA – Research Department, Bucharest, Romania

The researches have been realized in the frame of the Project « The utilization of vesicular-arbuscular mycorrhyze in mulberry cultivation » - Contract no. 6/2001 – AGRAL Programme. The experimental device included the following variants: V0 – non-fertilized control; V1 – chemical fertilized NPK, dose 120: 60: 60 kg a.s. /ha; V2 – biofertilized with Endorize SOL, dose 25 mg/bush – experiment effectuated in the previous year. The obtained data made evident the value of the mean leaf production of 5.63 kg/bush obtained in the variant biofertilized with Endorize SOL product, higher than the production obtained in the variant fertilized with NPK of 5.31 kg/bush, the expenses concerning the application of the biofertilizer being effectuated in the previous year. The quantitative determinations concerning the heterotrphic bacterium and microfungus from soil made evident the normal values of total number of heterotrophic bacterium from soil and the normal values of microfungus from soil. There are noticed the higher values for the fertilized variants in comparison with the control. The utilization of the biofertilizer Endorize SOL in mulberry plantations provides the optimum developing of mulberry bushes and the obtaining of a leaf production at the level of that realized in conditions of NPK fertilization in dose of 120 : 60 : 60 kg a.s./ha.
Key words: biofertilization, Endorize SOL, shoot length, leaf weight, leaf production.

MODERN EQUIPMENT UTILIZED IN THE PROCESS OF FLOSS REMOVING FROM THE SILK COCOONS

MATEI A.*, POPESCU A.**, CIULU M.*, MATEESCU O.***
**Commercial Society SERICAROM SA – Research Department, Romania*
*** University of Agronomic Sciences and Veterinaru Medicine Bucharest, Romania*
**** Commercial Society ROMEXIM PRODCOMPLUS SRL, Romania*

The machine for floss removing from the silk cocoons MCS-20 is included in the technological system of equipments for the mechanization of the works in sericultural farms which has in exploitation about 1 ha of mulberry plantations and an annual production capacity of about 400 kg silk cocoons. The distribution of labor power in the process of silkworm rearing is presenting as follows: larvae rearing 45.8%; mounting 13.1%; mulberry leaves' harvesting 16.7%; food preparing 3.5%; cocoon harvesting and floss removing 20%; other works 0.8%. The removing floss machine – MCS-20 constitues a base component of the technological lines of sericultural works' mechanization, has a work capacity of 20 kg of silk

cocoons/h and it is served by one operator. This equipment contributes to the decreasing of the expenses/kg silk cocoons with about 20% and to the reducing of the silk cocoon losses with about 10%, following the avoidance of their deterioration risc by perforation. The MCS-20 machine is destined to the floss removing from the silk cocoons in fresh state, after harvesting, for their future processing. The utilization field covers all the type-dimensional scale of silk cocoons, produced by all the biologic categories of Bombyx mori silkworm: genetic stock, superelite, elite and commercial eggs. The machine is indicated to all the categories of producers which have as activity object the silkworm rearing in familial system or in industrial work conditions.
Key words: Bombyx mori L., silk cocoons, mechanization in sericulture

THE ROLE AND PLACE OF SNAILS IN HUMAN ALIMENTATION AND HEALTH

BUD I.

Faculty of Animal Husbandry and Biotechnologies, Cluj-Napoca, România

The vertiginous rise of snail meat consumption has lead to reconsidering this species, which is increasingly studied and bred in conditions of captivity. The aim of the present paper is to outline the importance of this species form the standpoint of being a source of animal proteins, as well as the beneficial role that the consumption of this meat has on human health. Besides a detailed description of the chemical composition of the snail meat as compared to other species of animals that enter in human alimentation, this paper presents the morphological characteristics of the main species of snails that enter in human alimentation. The high request for snail meat stands makes that in the next period the snail breeding will represent a lucrative business, in Romania too.
KEY WORDS: **SNAIL, HUMAN ALIMENTATION,HEALTH**

NUTRITION QUALITY OF TRAPPIST CHEESE WITH ASPECT ON ACID AND CHOLESTEROL CONTENTS

POPOVIĆ- VRANJEŠ Anka, VULIĆ Mirjana, SAVIĆ MILA, JOVANOVIĆ SLOBODAN
Faculty of Agriculture, Novi Sad, Srbija Republic
Faculty of Veterinary Medicine, Beograd, Srbija Republic

Effects of alimentary cholesterol and saturated fatty injection increase expanded interest for some food staffs atherogenik potential determination on the bases of their energetic value, total fat quantity, certain fatty acids and amount of cholesterol. There is analized content of mentioned Trappist cheese components with aspect on conclusion of possible risk. All saturated fatty acids are not atherogenic, except lauric acid (12:0), miristic acid (14:0) and especially palmitic acid (16:0). In relation to total cheese fat, fatty acid content isn't over 70%, cholesterol content is under 95 mg/100g and atherogenic index isn't over 50 base units. New knowledge is that steraric fatty acid (18:0) hasn't got atherogenic effect and influence on blood vessels protection.
Key words: whey, probiofit, nutrition value, terapeutic value

NUTRITION AND TERAPEUTIC VALUE OF NEW WHEY PRODUCTS

POPOVIĆ- VRANJEŠ Anka, VULIĆ Mirjana, TODOROVIĆ Sonja

Faculty of Agriculture, Novi Sad, Srbija Republic

Whey is the secondary product in cheese production processes, which is recognized for its big nutrition and terapeutic value from ancient period, as stated by Hippocrates (460 BC). In the last years, there are manifested significant efforts regarding the possibilities of whey use for people nutrition. One of these possibilities is the production of whey potions. In the world, there is a noticeable demand for functional products that are «half food half medicine». Whey content is a good raw material for that production. Probiofit is a new product from natural whey with probiotics culture (probioticcs) and inulin (prebiotics), which could be produced by or without fruit additive. Probiotics culture additives achieve whey bioconversion producing high nutritive values with terapeutic use in the hospital treatment for different types of diseases, such as liver, digestive organs, skin, and kidney diseases, and the reduction of body weight.

Key words: whey, probiofit, nutrition value, terapeutic value

ANALYSE OF PRODUCTIVE PERFORMANCES OF FEMALES AND BABY-RABBITS RECEIVED FROM DIFFERENT BREEDS OF RABBITS

SCRIPNIC Elena, ŞUMANSCHI A.

Faculty of Animal Science and Biotechnologies, Chişinău, Rep. Moldova

The change of breeds of rabbits for exploitation there is a motive for discussion for rabbit's exploitations, what can be simplifying studding productive performances of different breeds. Were used the adequate breeds of rabbits U.A. x N.A. and N.R. x V.N. for study. Studies showed that milk production of females from U.A. breed was higher with 25.0% than females from N.A. breeds. Growth evolution showed that baby– rabbits obtained from U.A.x N.A. breeds had the average of body weight of 734.09 g or with 16.5 % higher as the baby-rabbits obtained from N.R. x V. N. breeds at the end of growth period.
Key words: rabbit, milk production, body weight.

RAW MILK QUALITY RESEARCH

PENTELESCU O., MUREŞAN G.

Faculty of Animal Breeding and Biotechnology, Cluj-Napoca, Romania

Dairy farmers are in the business of producing food. They aim to ensure that the safety, flavour and quality of their raw milk will satisfy the highest expectations of the food industry and consumers alike. From raw material production to the point of consumption, all dairy products should be subject to a combination of control measures, and these control measures should be shown to achieve the appropriate level of public health protection. Good hygienic practices should be applied throughout the food chain so that milk and milk products are safe and suitable for their intended use. After some research on Romanian milk quality some hygienically characteristics determined us to conclude that we need urgently to implement some programs to monitories the critical control points of raw milk properties. The analysis had been made on raw milk collected from Dornelor Depression.

Key words: Milk Quality; SPC-Standard Plate Count; SCC-Somatic Cell Count; HACCP-Hazard Analysis and Critical Control Point, GAP-Good Agricultural Practices

INFLUENCE OF SEVERAL PHYSICAL AND PHYSIOLOGICAL FACTORS UPON MILKTOTAL-RETINOL

DRĂGOTOIU D., MARIN Monica, POGURSCHI Elena., DRĂGOTOIU Tomiţa, PANĂ C.
Faculty of Animal Sciences, Bucharest, Romania

Milk is an important source of fat-soluble vitamins, with retinol resulted from plant carotenoids metabolism. Vitamins A play a complex role in humans, as part of various biochemical processes of great importance to human life and activity. The objectives aimed at pointing out the total-retinol and β-carotene variation in milk according to species, season, physiological condition, and a series of physical factors (boiling, acidification, irradiation). The results emphasized a decrease in the total-retinol and β-carotene contents in milk over the winter, the significant loss also resulting from the influence of different physical treatments.

Key words: milk, total-retinol, β-carotene, physical factors.

THE ESTIMATION OF CALAMAR QUALITY

ŞTEF D.*, DRUGĂ Mărioara*, ŞTEF Lavinia**, DRUGĂ M.*, NICHITA Ileana***
*** Faculty of Food product Technology, Timişoara, Romania**
**** Faculty of Animal Science and Biotechnologies, Timişoara, Romania**
***** Faculty of Veterinary Medicine, Timişoara, Romania**

The aim of this study was to verify the quality of 1380 kg of calamari that was imported from Italy. The exams and the determinations were done at Veterinary service of Timis county For the correct appreciation of this product five samples were randomly taken and after organolepticaly examination were done the following exams: chemical, physical, bacteriological, parazitologicaly, and some determinations as: the presence of heavy metals, the pesticide and the radioactivity. The results of the physical and chemical exams of samples are presented in table 1 - 5. After these determinations was established that all the five samples meet the qualities from national and European the standard (2).
Key words: calamar quality, marine specialties

THE ESTIMATION OF HONEY BEE QUALITY

ŞTEF D.*, ŞTEF Lavinia**,DRUGĂ M.*, DRUGĂ Mărioara*, BUJANCĂ G.*
Faculty of Food product Technology, Timişoara, Romania
Faculty of Animal Science and Biotechnologies, Timişoara, Romania

The purpose of these researches was to verify the quality of three kind of honey bee (lime honey bee, acacia honey bee and mildew honey bee). For this research were took samples from different market from Timsoara locality. Were examined the organoleptical characteristics and after that the samples were examined for the physical and chemical characteristics. The organoleptical, physical and chemical characteristics at all tree kind of honeybee examined correspond from the quality point of view. For the future is compulsory to endowment the laboratories with modern apparatus and those authorising to be able to make determinations solicited by the European community
Key words: lime honey bee, acacia honey bee, mildew honey bee

STUDY OF MILK PRODUCTION PROFITABILITY IN CURTICI DAIRY FARM

GRIGOROIU E.*, POPESCU I.*, POPESCU Andreea**, GRIGOROIU G.*
** Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania*
*** Faculty of Economy, Timişoara, Romania*

THIS WORK PRESENTS THE STUDY OF MILK PRODUCTION PROFITABILITY IN A DAIRY FARM COMPRISING 365 COWS, DURING A PERIOD OF 3 YEARS. THE FUNDAMENTAL METHODS WERE USED FOR THIS STUDY: DOCUMENTATION, ANALYSIS, SYNTHESIS, COMPARISON FOR A LONG PERIOD OF TIME USING

SPECIFIC ECONOMIC INDICATORS, PROFITABILITY INCREASED IN THE ANALYZED PERIOD AND WAS RATED AT A GOOD LEVEL IN THE YEARS 1999 AND 2001, AND SATISFYING IN THE YEAR 2000. THE FARM ACTIVITY WAS ALSO PROFITABLE DURING THE WHOLE ANALYZED PERIOD DUE TO THE FACT THAT IT PRODUCED MILK AT A LOWER PRICE THAN THE AVERAGE SELLING PRICE. EVERY YEAR, THE FARM DELIVERED A MARKETABLE OUTPUT HIGHER THAN 350 LITERS PER FODDERED COW.

KEY WORDS**: DAIRY COWS, PROFITABILITY.**

STUDY OF LABOUR PRODUCTIVITY AT CURTICI DAIRY FARM

GRIGOROIU E.*, POPESCU I.*, POPESCU Andreea**, GRIGOROIU G.*
** Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania*
*** Faculty of Economy, Timişoara, Romania*

This work presents a study of labour productivity in a farm, during a period of three years, 365 dairy cows were taken into account. The fundamental methods were used for this study: documentation, analysis, synthesis, and comparison during a long period of time using specific economic indicators. Labour productivity obtained in this farm was rated at a satisfying level. Milk production obtained per day/man has increased during the analysed period from 2,86 hl in 1999 to 3,82 hl in 2001, due to the production increase by 33,6% in 2001 in comparison with 1999. Days/man consumption per foddered cow has increased in the analysed period by 5,7% due to reduction of foddered cow effectives from 384 in 1999 to 365 in 2001, and the maintenance of the same number of farm labourers.

Key words: dairy cows, labour productivity.

ECONOMIC EFFICIENCY IN PRACTICING PASTORAL BEEKEEPING

BUZAMĂT Genoveva, BURA M., PĂTRUICĂ Silvia, POPA Codruţa, ISTRATE D., BĂTĂRAN A.
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

THE PURPOSE OF THIS WORK IS PRESENTING THE ECONOMICAL ADVANTAGES OF PRACTICING PASTORAL BEEKEEPING COMPARED TO STATIONARY BEEKEEPING. FOR THIS PURPOSE WERE STUDIED TWO APIARIES FORMED FROM ONE HUNCHED BEE FAMILIES EACH. ONE OF THESE APIARIES HAD PRACTICED PASTORAL BEEKEEPING. IN EACH ONE OF THESE APIARIES WERE ANALYSED THE MOST IMPORTANT ECONOMICAL INDICATORS: - EXPENSES – INCOMES – BENEFITS. THE APIARY, WHICH HAD PRACTICED PASTORAL BEEKEEPING, OBTAINED GREATER PRODUCTIONS AT ALL BEEKEEPING PRODUCTS AND THIS DETERMINED A LARGER BENEFIT THAN THE APIARY THAT PRACTICED STATIONARY BEEKEEPING.

KEY WORDS**: PASTORAL BEEKEEPING, ECONOMIC EFFICIENCY.**

OBTAINING EFFICIENT ANIMAL PRODUCTION IN SMALLHOLDERS: EXTENSION PARADIGMS AND SPECTRUM

HUŢU I.

BUASVM, Faculty of Veterinary Medicine, Timişoara, Romania

The paper describes possible methods to be used in the efficient animal production methodologies disseminating as well as discussing the relevant extension theories. The substance of

methodologies - namely, Farming Systems Research, Rapid Rural Appraisal and Agroecosystem Analysis, Farmer-First and Farmer Participation Approach are described. In the article, we would like to approach the subject of disseminating animal production quality methodologies for smallholders by considering this recent development of farmer-participatory approaches. In the same time it is suggested the turnover of extension and research from problem focused approaches to mission-centred aim.
Key words: smallholders, animal production, and extension paradigms.

OBTAINING EFFICIENT ANIMAL PRODUCTION IN SMALLHOLDERS: EXTENSION BY FARMER PARTICIPATORY APPRAISAL

HUŢU I.

USAMVB Faculty of Veterinary Medicine, Timisoara, Romania

In this paper we describe possible methods to be used in the animal production methodologies disseminating as well as discussing the relevant farmer-participatory approach extension theory. In the wider research context the evolution of farmer participatory research is discussed in the light of the Cornwall's "typology of participation paradigm" and stakeholder/community participation. Practically, in this article, we would like to approach the subject of disseminating efficient animal production methodologies for smallholders (family farms) by considering recent development in the world of farmer-participatory approaches.

Key words: animal production, community participation, and farmer-participatory appraisal.

IMPACT OF THE NEW MARKET ORGANIZATION FOR MILK AND MILK PRODUCTS PRICES IN THE COMMON AGRICULTURAL POLITICS REFORM

STANCIU S.

Faculty of Agricultural Management, Timişoara, Romania

Dairy production is the foremost agricultural activity of the European Union, accounting for about 18% of the total value of Community agricultural output. Despite a decline in its market share, the Union still ranks as the world's chief exporter of dairy products. The CAP reform under Agenda 2000 has not fundamentally affected the common organization of the market (COM) in milk and milk products established in 1968 and subsequently revised in depth in 1984 to introduce milk quotas and in 1987 to scale down buying-in. The changes introduced to ensure the sector's stability and competitiveness essentially involve a progressive reduction in institutional prices from 2005 on, partly offset by direct payments to producers. The quota system is up for review in 2003 with a view to its discontinuation after 2006. The legal reference for the COM reform summarized below is Regulation (EC) No 1255/1999. The relevant reference for the milk-quota scheme is Regulation (EC) No 1256/1999 amending Regulation (EC) No 3950/92.
Key words: intervention prices, target price, export levy, refunds, and regulation.

ECONOMIC COMPARISON OF THE ORGANIC AND THE CONVENTIONAL SHEEP MILK PRODUCTION

LAPIS MIKLÓS, KOCH Krisztina

** University of Debrecen, Faculty of Agricultural Economics and Rural Development*

Organic farming has appeared in many countries in the world and in Hungary too. These farms

are getting more and more popular. Thus, we carried out a comparing analysis of the organic and the conventional sheep keeping important. Our analyses of certain indexes, shown that the organic technology emphasize a better view, for example in the case of the profit per labour hour. On the other side the worst disadvantage in this technology, that it is almost impossible to employ skilful, reliable shepherds, for a stock size like in the examined enterprises.
Key words: sheep milk, economic comparition, organic production

HEN EGG PRODUCTION EVOLUTION IN ROMANIA AND THE ENLARGED EUROPEAN UNION (2000-2003)

NISTOR Gh., NISTOR Eleonora

Banat's University of Agricultural Sciences and Veterinary Medicine, Timisoara, Romania

Hen eggs are important parts of the daily diet and highly valued in virtually all cultures and religions. The EU contributes about 11-12% to the global hen eggs. The share of the ten eastern European countries which will join EU in 2004, to EU production would rise to 21.5% in 2004. Romania, as a candidate country for joining the Community in 2007 registered a gradual increase in hen egg production, from 262,820 Mt in 2000 to 290,000 Mt in 2003. In 2000, per capita consumption in Romania was, on average, of 170 eggs.
Key words: hen eggs, production, consumption.

FRESH COW MILK PRODUCTION EVOLUTION IN ROMANIA AND THE ENLARGED EUROPEAN UNION COUNTRIES (2000-2003)

NISTOR Gh., NISTOR Eleonora

Banat's University of Agricultural Sciences and Veterinary Medicine, Timişoara

Romania has one of the smallest milk production sectors in the Central and Eastern European Countries (CEEC). Therefore it is necessary to increase the milk production and harmonize the quality standards with those of the EU standards, a condition for the prospective integration of Romania into the EU in 2007. Consumption of milk and other dairy products continues to remain low, due to reduced production and high retail prices. Romania is a net importer of dairy products. The main suppliers of dairy products to Romania were and still are Hungary, Poland and EU countries (Germany, France, the Netherlands).
Key words: dairy, milk, production, and consumption.

SHEEP MEAT PRODUCTION EVOLUTION IN ROMANIA AND THE EUROPEAN COUNTRIES DURING 2000-2003

NISTOR Eleonora, NISTOR Gh.

Banat's University of Agricultural Sciences and Veterinary Medicine, Timişoara

Until January 2007, when Romania is proposed besides Bulgaria to join the EU, all necessary preparations must be done, the strategy comprising a chapter for each sector including meat. In EU, the greatest sheep meat production belongs to UK with 307.250 Mt on average between 2000 -2003, followed by Spain, with 206.302 Mt/year for the same period. Among the countries that will join EU in 2004, Hungary has the highest sheep meat production in the last four years, being of 8.422 Mt. on average for 2000-2003 period. Romania and Bulgaria have nearly the same sheep meat production/year. Romania has in the last four years a steady sheep meat production, with a fluctuation from 48.032 Mt in 2001 to 50.968 Mt in 2002. In 2003 the sheep meat production

registered a decline to 50.000 Mt.

Key words: sheep meat, lamb, production, consumption.

CHICKEN MEAT PRODUCTION EVOLUTION IN ROMANIA AND THE ENLARGED EUROPEAN UNION (2000-2003)

NISTOR Eleonora, NISTOR Gh.

Banat's University of Agricultural Sciences and Veterinary Medicine, Timisoara, Romania

In Romania, domestic poultry industry still faces strong competition from imported products. Per capita consumption of poultry meat products in Romania is one of the lowest in Europe, because of the reduced purchasing power of the population. In the last four years, in Europe, chicken meat has increased its proportion of the total meat market because of beneficial price development and a positive health image among consumers.

Key words: poultry, chicken meat, production, and consumption.

THOROUGH RESEARCHES ON USING THE STRATIFIED COMPOSITE MATERIALS IN ENGINEERING OF THE MOULDBOARDS OF MODERN MECHANIC PLOUGHS

BUNGESCU S.

Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania

The paper presents the results of the author's researches on the line of pointing out the differences of behaviour for the requirements of the stratified composite materials used in the mouldboard's engineering of mechanic ploughs and pointing out the advantages in using the stratified composite materials in comparison with the traditional materials.

Key words*: stratified composite materials, mouldboard.*

GENE THERAPY

VINTILĂ I.*, VINTILĂ Roxana Daniela**

** Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania*

*** University of Medicine and Pharmacy Timişoara, Romania*

Until now, genetic diseases were seen as a fatal thing, and humans didn't have any weapons to fight against it. The development of recombined DNA and transgenesis technology, leads the penetration of biotechnology in modern medicine.Therapy of mutant gene is now possible. It consists in introducing of a normal gene into the genome of an ill patient, in order to block, to correct or to replace a nonfunctional mutant gene.

Gene therapy can be realized in two ways:

a) Introducing the special interest gene in the genome of embryos, in the first hours after fecundation. The method is not yet morally accepted because, in this particular case, the cells of the germinal lines are affected.

b) Realizing transgenesis only in somatic cells belonging to the tissue, in which the interested gene

is manifested.

INFLUENCE OF EMBRYO FREEZING METHODS AND CRYOPROTECTANTS ON GESTATION RATES AT COW

PĂCALĂ N., CORIN N., BENCSIK I., DRONCA D., STĂNCULEŢ Jana, CARABĂ V., TELEA Ada
Faculty of Animal Science and Biotechnologies, Timişoara

The aim of our study was to investigate the way in which freezing methods and cryoprotectants are influencing gestation rates after the transfer of frozen embryos. Morulas and blastocysts were frozen using two methods: controlled freezing method with 1.4M glycerol and "one step" method with 1.4 M ethylene glycol. The gestation rate of 52.6% was obtained after the transfer of frozen embryos in glycerol, and the gestation rate of 38,1% after the transfer of frozen embryos in ethylene glycol. Embryos in developmental stage 5 (early blastocyst) have survived better to the freezing method then the morulas and blastocysts. Majority of gestations were obtained from early blastocysts.

Key words: embryo cryopreservation, glycerol, ethylene glycol, gestation rate

OBTAINING POSSIBILITIES OF A HIGH PERCENTAGE OF MALES BY LEADING THE "INTERSEX" INDIVIDUALS IN GUPPY FISHES

MAG-MUREŞAN I.V., BUD I.

Faculty of Animal Husbandry and Biotechnologies, Cluj-Napoca, România

Since we do not want to breed to much guppy females, we have made experiments so as to know if we could modify the sex ratio in spite of their chromosomal sex determination. We hypothesized that an increase of one sex percentage would cause an increase of the other sex percentage in the progeny. As well, we thought that raising offspring among females would increase its male percentage. Our results proved that there are some mechanisms for sex ratio regulating and they could be used, beside other methods, in order to obtain a higher percentage of guppy males in aquaculture. The explanation for sex ratio modification is that some guppies have a genetic basis to develop either into males or females from the beginning.
Key words: guppy, intersex individuals.

CELLULAR COMPONENTS OF THE COW MILK

CADAR Mirela Emilia
Faculty of Animal Husbandry and Biotechnology, Cluj-Napoca, Romania

In this study we want to put into evidence the knowledge importance of the cellular components from the colostral and normal milk, the proportions and the existent correlations among them and the milk yield, mammary gland healthy state, lactation period etc.

Key words: somatic cells, cow milk

INTERACTION BETWEEN ARTIFICIAL SURFACES AND THE EXTRACELLULAR MATRIX

CADAR Mirela Emilia
Faculty of Animal Husbandry and Biotechnology, Cluj-Napoca, Romania

Summary. *The living organ tissue cells are surrounded by extracellular matrix, which provides support and attachment points, modulates the signal transduction, influences the ions' and nutrient permeability and actively is in contact with the intracellular components through the integrin network, so it can be continuously remodeled by cells in response to external factors. The growth and differentiation of the animal cells in culture are influenced by many factors as temperature, type of culture medium, presence of mitogen substances, the degree of cell-to-cell interaction and the surface type on which the cells are grown. In vitro, the tissue cultures are grown in plastic flasks, plates or roller bottles. The most used plastic is the polystyrene that must be treated to render it hydrophilic, or has some coating substances as serum, laminin, gelatin fibronectin or poly-L-lysine. Some cells require more specialized surface treatments to determine their differentiation, including the synthesis of some proteins, which will provide the attachment points, will perform functions associated with the signal transduction, permeability and communication in the living tissues. The proteins can be available as solutions of solubilised basal lamina both in standard format and with reduced amount of growth factors. In this way, the cells can be grown as a gelled support layer [3], embedded as 3-dimensional matrix [5] or embedded as a surrogate tissue ready to be injected [1]. The solutions contain laminin, collagen IV, heparin sulphate proteoglycans and entactin [3], tissue plasminogen activator [5], growing factors (TGF-β, EGF, IGF-1, bFGF and PDGF [2,4]. Some cultured cells require the support of living cells named feeder cells.*

Key words: extracellular matrix, growth surface

THE MODEL SYSTEM FOR TRANSGENIC RESEARCH IN FISH

COŞIER Viorica, VLAIC. A.
University of Agricultural Sciences and Veterinary Medicine, Faculty of Animal Husbandry and Biotechnology, Cluj - Napoca, Romania

In 1994 Devlin R.H. et al. reported the obtaining of the first Pacific Coho salmons (Onchorynchus kisutch) containing a transgene of the growth hormone (GH). The obtaining of an model system in a fish was then tried. It has to correspond to transgenic research or making transgenic fish in other fish species.Even from 1980 zebrafish (Danio rerio), intensively used in laboratory studies (toxicological and developmental), offered the biological material necessary for research on gene expression and embryological development. Several methods of foreingn DNA introducing were tested, but stable lines of transgenic zebrafish, in which foreign DNA is transmitted to subsequent generations were obtained only after experimental research developed in time. These methods aimed the optim genic construct: promoter, and reporter genes fusioned to the regulatory region of different genes from zebrafish embryo.

Key words: zebrafish, transgenic fish, promotor, reporter gene, genic construct

EMBRYOS TRANSFER IN BOTOSANI KARKUL SHEEP

FECIORU Elena, BOSANCIUC S., BRADATAN Gh., CHIORESCU I.
Sheep Resarch and Development Station Popauti- Botosani, Romania

The embryo transfer from grey and pink karakul embryo donor females to receiver black Karakul female was carried out to clarify what produces the incidence of the lethal factor in grey and pink karakul lambs. The specific hormonal treatments applied to donor females in 2 association variants- progestogene - seric and coronic gonadopropine and the transfer of morphologically normal embryos to receiver females, with synchronized oestrus with that of the donors, led to 60.0% lambing rate and 45.4% embryonal survival..According to the phenotypical aspects of the grey and pink lambs at lambing, it can't be

concluded that the internal medium has an important role in preventing the lethality phenomenon because one of the grey lambs had the characteristics specific to albino lambs: light grey colour, the lack of pigmentation at the auricular concha level and of the palate the light grey colour of the iris, and white eyelashes. In conclusion, the internal medium of the black Karakul receiver sheep where the lambs developed since the zygotic phase until lambing, was not a solution in solving the lethality phenomenon so, the genetic factor is responsible for this anomaly, confirming thus the data in specialty literature.
Key words: Karakul, biotechnology, lethality, genetics

PCR ANALYSIS FOR LEUKOCYTE ADHESION DEFICIENCY (BLAD) IN HOLSTEIN CATTLE

ILIE Daniela*, GÓCZA Elen**, BODO Sz.**, KOBOLAK Julianna**, LAZAR Maria*, GHIŞE Gh.*, NICHITA Mihaela*, VINTILĂ I.*

**Faculty of Animal Science and Biotechnology, Timişoara, România*
***Agricultural Biotechnology Center, Gödöllő, Hungary*

Identification at DNA level of some genetic disease, with a grate economic importance in dairy industry, will enable complete eradication of some bovine genetic disease within a few years. Bovine leukocyte adhesion deficiency (BLAD) is a genetic disease, which affect the hematopoetic system by greatly reduced expression of the heterodimeric β_2 integrin, resulting many defects in leukocyte function. It is known that BLAD deficiency is an autosomal recessive defect, caused by a point mutation in the gene encoding subunit CD18 for β_2 integrin adhesion molecule, which is lethal in the homozygous form. The aim of our work was to optimize, in our laboratory conditions, the PCR - RFLP analysis as a diagnostic test to identified BLAD carrier cattle. We used a simple DNA extraction method from fresh blood and gene amplification by PCR (Polymerase Chain Reaction). BLAD genotyping were done using RFLP (Restriction Fragment Length Polymorphism) with TaqI enzyme.

Key words: BALD carrier, PCR, RFLP, genotype detection

RESEARCH REGARDING THEOOCYTES VIABILITY ÎN THE MATURATION PROCESS

IPATE Iudith*, BODO Sz.**, GOCZA Elen**

**Research and Development Institute for Cattle Production, Baloteşti, Romania*
***Agricultural Biotechnology Center Godollo, Hungary*

Maturation of oocytes for "in vitro" fertilization is a complex phenomenon which provide two aspects: nuclear maturation which indicated oocytes passing from profaza I in metafaza II; cytoplasmatic maturation which indicated that ooocytes are good for "in vitro" fertilization and embryo development. Our research have been studied the influence of culture with cumullus oophorus in IVM and oocytes viability from development in IVF. The best results regarding the oocytes viability obtained in the maturation process in TCM 199+FCS10%+(COCs) was (76.2%). In the general conditions, the oocyte quality (viability) is appreciated of their morphological aspect and their capacity of development "in vitro". We usend a simple colouring substances as a method to have oocytes choosing that are going to be introduced in a maturation, fertilization and culture medium. We have been realized an ovocytes clasification and have been demonstrated the presence of bovine follicular fluid reduced the number of granulosa cells needed to maintain meiotic inhibition.

Key words: oocyte, in vitro maturation, cumulus-Oocytes complexes (COCs)

GENETIC EXAMINATION OF SUSCEPTIBILITY TO CAE IN THE

HUNGARIAN GOAT HERD

Kusza SZ.*, Bősze ZS.**, Kukovics S. ***, Jávor A.*

** University of Debrecen, Centre of Agricultural Sciences, Dep. of Animal Breeding and Nutrition, Hungary*

*** Agricultural Biotechnology Center, Department for Animal Biolog, Gödöllő, Hungary*

**** Research Institute for Animal Breeding and Nutrition, Herceghalom, Hungary*

Caprine arthritis encephalitis (CAE) is a retroviral infection of goats. CAEV is closely related to the virus which causes Maedi- Visna in sheep and AIDS in human. Body excretions, which contain white blood cells are potential sources of the virus to other goats in the herd. The best protection against disease is the prevention. Infection can be detected from blood using serological tests (ELISA, AGID) or PCR method. Goats imported from other European countries (France, Switzerland, Netherland) have a high prevelance of the disease and they might have introduced the disease into the Hungarian goat population. Presence of the virus is not detectable in goat kids less than six months of age. Therefore linkage studies were initiated in Switzerland, Spain and France to reveal the background of the disease. Our experiments, which were launched in 2003 aimed to investigate the seroprevalence of CAEV in Hungarian goats and to examine whether there is any association between either in the susceptibility of CAE or the appearance of clinical symptoms in infected individuals and MHC II DRBP1 microsatellite polymorphism. We also aimed to encourage control measures before the infection can spead rapidly. Up to date altogether the genotype of 130 animals were determined altogether out of the 2000 goats which are planned to be examined until June 2004. Hungarian Milking Goats (White, Brown, Multicolour) and Saanen were selected for this initial study. Blood samples were taken for DNA extraction. According to the serological results 30 % of the Hungarian goats are infected with Caprine Arthritis Encephalitis Virus (CAEV). Microsatellite analysis located within the DRBP1 MHC class II candidate gene were tested in order to detect possible association with CAE susceptibility. According to our results microsatellite could be a powerful tool to differentiate between goat breeds in regard to disease sensibility. Significant association between serological results and DRBP1 genotypes were not detected using Chi-square test (at level 5%).

Key words: genetic examination, caprine arthritis encephalitis (CAE), goats

POLYMORPHISM OF THE CAPRINE αS1-CASEIN, Κ-CASEIN AND ß-LACTOGLOBULIN GENE

KUSZA Sz.*, VERESS Gy.**, BŐSZE Zs., KUKOVICS S.*******

** University of Debrecen, Centre of Agricultural Sciences, Dep. of Animal Breeding and Nutrition, Hungary*

*** Szent Istvan University, Hungary*

**** Agricultural Biotechnology Center, Department for Animal Biology, Hungary*

***** Research Institute for Animal Breeding and Nutrition, Hungary*

The polymorphism of milk proteins has been investigated for more than 40 years and a great number of genetic variants have been identified (Angiolillo et al., 2002). One of the main dairy products is cheese in Europe. This is the best way to preserve perishable milk. Milk composition and cheese production is significantly determined by αs1-casein, a milk protein, which is also in charge of forming micelles. The amount of this milk protein depends on the allele variations of the αs1 casein gene. From this follows that αs1-casein allele frequencies have already been examined in several goat breeds in several countries around the world (Ramunno et al., 1991; Jordana et al., 1991, 1994, 1996; Grosclaude et al., 1987, 1994;). The type and frequency goat milk protein alleles has not been studied in Hungary yet. Here we report the initial, basic survey of allelic polymorphisms of αs1-casein, κ-casein and β-lactoglobulin genes in a herd of a Hungarian Milking Goat.

Key words: polymorphism, αS1-casein, Κ-casein, ß-lactoglobulin, goats

ADDITIVE GENETIC VARIANCE ESTIMATION FOR LITTER SIZE IN A POPULATION OF LARGE CHINCHILLA RABBIT BREED

Dronca D., BURA M., PĂCALĂ N., BENCSIK I., VINTILĂ I.
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

The paper presents the estimation method of the additive genetic variance for prolificacy using the intra-class correlation applied in a population of Large Chinchilla rabbits with two genetic groups, each of 10 paternal half-sisters. Results demonstrate that a proportion of 0.18 or 18% of the phenotypic variance for the litter size in the analysed population is due to the genetic additive variance.

Key words: variance, heritability, half-sisters

INFLUENCE OF THE HETEROZYGOSIS DEGREE ON WEIGHT GAIN CAPACITY OF THE RABBIT HYBRIDS DURING THE SUCKLING PERIOD

DRONCA D., PĂCALĂ N., BENCSIK I., PĂTRUICĂ Silvia, PEŢ I.
Faculty of Animal Sciences and Biotechnologies, Timişoara, Romania

Based on 117 rabbit hybrids, divided in two groups (A and B) having different heterozygous degree, our study intends to determinate in which extent the different genetic structure, namely the heterosis effect, influences the weight gain capacity of the rabbits during the suckling period. Results demonstrate the superiority of the interracial double hybrids. There is a good specific combinative capacity between Large Chinchilla and White New Zealand breeds; therefore we recommend these hybrids for semi intensive (extensive) rearing.
Key words: heterozygosis, hybrid vigour, genetic structure

THE EFFECT OF FRAGILE SITES ON CATTLE CHROMOSOMES

NICOLAE Ioana

Research & Development Institute for Bovine, Baloteşti, Romania

Human and animal chromosome fragile sites has been associated to a large variety of anomalies. This means that the stability of chromosome structure could have a close relationship with fragile sites. Usually, their presence on chromosomes are accompanied by the chromosome breaks and when a certain amount of such breaks appear the chromosome instability arises together with its phenotipical alterations. In this connection, the following report presents the results of the karyotype analyses carried out on 10 Romanian Black Spotted cows and 30 Romanian Spotted bulls. The cytogenetic observations carried out on metaphase chromosome preparations obtained by peripheral blood lymphocyte cultures revealed that 3 cows and 4 bulls presented a wide variety of autosomal and heterosomal breakages. According to these results, it was investigated the possibility that specific chromosomal breaks are preferentially involved in the chromosomal instability which are related with reproductive disorders.

Key Words: fragile sites, cattle, chromosomes

THE UMORAL IMMUNE RESPONSE IN POULTRY, SUCCESIVE TO PROBIOTIC ADMINISTRATION

TÎRZIU E.*, PASCALE Florentina**, CUMPĂNĂŞOIU C., IANOŞEV D.****
**Faculty of Veterinary Medicine, Timişoara, Romania*
*** Pasteur Institute, Bucureşti, Romania*
****D.S.V., Timiş, Romania*

The researches served as purpose for the establishment of the immuostimulator effect of probiotics in poultry vaccinated against the New Castle disease and against aviary infectious bursitis. Our experiment was performed on 40 broilers Ross hybrids, grouped in four experimental batches that have had the benefit of the same conditions of alimentation and maintenance. Immunomodulating effect of the probiotic has been appreciated on the basis of the modification of antibodies titre. Obtained results have shown intensification in the synthesis of immune specific effectors, in all batches to which the immunomodulating substances were given.
Key words: probiotic, poultry, antibody

MOET AND NATIONAL PROGNOSIS OF AI

PARASCHIVESCU M.Th., PARASCHIVESCU M., TOBĂ G.F.
Research and Development Institute for Cattle Production Baloteşti, Romania

The proposed subject discusses managerial, biotechnical, biotechnological, juridical and commercial aspects of applying MOET in areas covered by artificial insemination. From managerial point of view AI will continue to lead the grading improvement of livestock and the use of crossbreeding programs in commercial herds. The "do it your-self" insemination will be more and more used in the farms. MOET will act in bull dams selection, but progeny testing of bulls will go on. From biotechnical point of view semen production is rather perfect. However there are some hopes concerning spermatozoa sexing. MOET will improve its successful ratio and will promote the direct transfer (DT). There are great hopes concerning embryo sexing and production of identical twins. Perhaps AI centers will join the breeding societies to help selection for longevity in dairy breeds by freezing semen and embryos. The cooperative status of AI centers will stay, as a guaranty for reproduction service sustainability.

Keys words: cattle, IA, ET

EVALUATION OF HYGIENIC QUALITIES OF FRESH MILK PRODUCED IN SOME DAIRY FARMS IN WESTERN PART OF ROMANIA

VINTILĂ T., VINTILĂ Cornelia, CZISZTER L.T.

Faculty of Animal Sciences and Biotechnology, Timişoara, România

This work presents the results obtained after the examination of the main hygienic indicators in fresh milk produced in fourteen dairy farms from Timis and Arad counties in the western part of Romania. In order to detect subclinical mastitis in the fourteen herds, the somatic cells count was determined. The microbial content in fresh milk was determined using the CFU count in nutrient agar plates. Cows with severe mastitis that couldn't be treated using the usual commercial antimastitis products were found. In this particular case, the sensitivity at several antibiotics of the mastitis causing germs was determined. The obtained results reveals the hygienic conditions of the fresh milk in the western part of Romania as compared to European standards, in the expectation of joining Romania in the European Union.

Key words: fresh milk hygiene, somatic cells count, antibiotic test

MOLECULAR MARKERS FOR RANDOM POLYMORPHIC DNA ANALYSIS IN TEN GENOTYPES OF ANGELICA ARCHANGELICA L.

POP M.R.*, SAND Camelia*, BOBIŢ Dana**, BARBU C.H.**

**"Lucian Blaga" University of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, Sibiu Romania*
***Research Station for Medicinal Plants, Braşov, Romania*

The genus Angelica comprises several dozen species, with hundreds of varieties. These plants are commercially important, being used for a multitude of purposes, all around the world. For example, in Europe, Angelica archangelica L. is used as medicinal plant, as well as spice and for cake decorations (Callery 1997). In Eastern Asia, most of the Angelica plants used as natural medicines and in Japan, Angelica keiskai Koidz, called ashitaba, is cultivated for food additives (Watanabe et al., 1998). Since so many species and varieties exist, development of molecular markers would be important for quality assessment in the medicinal industry. Recently, restriction fragment length polymorphism (RFLP) and random amplified polymorphic DNA (RAPD) analyses have been carried out on Angelica acutiloba (Watanabe et al., 1998). This paper presents our results in the investigation of the genetic variability at the DNA level for ten genotypes of the Angelica archangelica from a local population in Romania. Random amplified polymorphic DNA (RAPD) analysis is an excellent tool and the method can be applied for clarifying the molecular genetic differentiation.

Key words: RAPD, genetic polymorphism, *Angelica archangelica L.*

POSSIBILITIES OF INCREASING THE „IN VITRO" MULTIPLICATION YIELD AT ANGELICA ARCHANGELICA *L.*

SAND Camelia*, POP M. R., BOBI Dana**, BARBU C.H.*

**"Lucian Blaga" University of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, Sibiu Romania*
***Research Station for Medicinal Plant, Braşov, Romania*

Species from genus Angelica are cultivated in countries such as Finland, Hungary, France, the Netherlands, Romania, Belgium, China, Korea, etc., as medicinal plants. Angelica archangelica L. (angelica) is a perennial herb, widely represented in the Romanian flora and frequently used in phytotherapy for the treatment of anorexia, dyspepsia, meteorisms and enteritis, the extract also having antibiotic action. One local population, DE CRISTIAN, is currently grown in Romania, but the active concentration of ingredients within this population shows significant variability. This papar represent the start research for find a modality to multiply the genotypes how have the highest concentration in active principle. Our preocupied is to discover the quickest ways of multiplication, in order to allow us the introduction into culture of the most valuable exemplars, these making the starting point for the creation of new cultivars of this plant.

Key words: Angelica archangelica L., tissue culture, apical and axillary meristems, productivity and viability

Na PYROPHOSPHATE INFLUENCE UPON CELLULAR DIFFERENTIATION OF BIRD'S FOOT TRFOIL *(LOTUS CORNICULATUS)*

SELEGEAN M.*, DRAGOMIR N.**, DRAGOMIR Carmen **
**University of the West, Timişoara, Romania*
*** Faculty of Animal Science, Timişoara, Romania*

Abstract: *Na pyrophosphate has proved to be extremely important in developing metabolic processes essential to plants. It has an important role in assuring cellular differentiation at our model (Lotus corniculatus L.), it stimulates the cellular specialization by forming a great number of meristemoids, respectively plantlets, an aspect which results from the correlation coefficient r =0.993.*
Key words: development, cell differentiation, *Lotus corniculatus* NaPPi

PARTICULARITIES OF THE SYNERGISM AND THE ANTAGONISM BETWEEN SOME OF METALLIC MICROELEMENTS

PUP Mihaela, AHMADI-VINCU Mirela, GARBAN Z., MARTAU A.B.
University of Agricultural Sciences and Veterinary Medicine, Faculty of Technology of Food Products, Timisoara, Romania

One of the most important problems of the biochemistry and mineral nutrition is represented by the evaluation of bioelements absorption and the physiological role of these. Currently there is an ongoing process between the total intake in bioelements and maintaining them within limits meant to ensure the health. Between micro minerals existing in relative high amounts in the organism (10^2-10^3 mg) we are presenting zinc, iron, copper and manganese with their synergists and antagonists. Their importance is given by the classification of these metals as essential for the human body.
Key words: synergism, antagonism, metallic microelements