

RESEARCHES REGARDING THE GROWTH OF *HYPOPTHALMICHTHYS MOLITRIX* AND *CTENOPHARYNGODON IDELLA* JUVENILES IN AN INTENSIVE SYSTEM

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*The intensive net cage system is based on the superior capitalization of the accumulation lakes or other different basins through the use of different types and dimensions, stationary or floating net cages, depending on categories like age, species and destination. This study is about the use of net cage intensive system type in the growth of juveniles *Ctenopharyngodon idella* and *Hypophthalmichthys molitrix* species. From the experimental point of view, the objectives were represented by the construction of a net cage mini-system and the surveillance of the biological material inside this system. The experiment was unfolded on the length of 38 days at the Mărtinești Fish Farm from Cluj County. A net cage system designed and conceived by the research collective was populated with 4000 juveniles fish from each species. At the beginning of this experiment the juveniles fish had a medium weight of 2 grams/sample. At the end of this experiment the fish had a medium weight of 9 grams.*

Key words: net cage, intensive system, *Ctenopharyngodon idella*, *Hypophthalmichthys molitrix*.

RESEARCHES REGARDING ICHTHYOFAUNA FROM NADRAG RIVER BASIN

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*On this research is showing the present situation of the fish genostock in the Nadrag River, an important confluent of the Timis river, being part of the Banat hydrographical area. The fish species caught in the investigated area are part of Cyprinidae family. The dominant species is *Barbus meridionalis petenyi*, followed by *Alburnoides bipunctatus*, incorporating the investigated area in the European grayling (*Thymallus thymallus*) or the Mediterranean barbel (*Barbus meridionalis petenyi*) zone of the running waters. At present the *Barbus meridionalis petenyi* population from the area investigated founds itself in a regression, fact that can be connected both with the poaching and with unauthorized hydrotechnic buildings build-up in the last decade.*

Key words: specie, *Barbus meridionalis petenyi*, river ichthyofauna, O₂.

CONTRIBUTIONS TO THE KNOWLEDGEMENT OF THE GROWTH TECHNOLOGY OF *ONCORHYNCHUS MYKISS* SPECIES IN RECIRCULATING AQUACULTURAL SYSTEM

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A Recirculating Aquacultural System (RAS) can be defined as an aquacultural system that incorporates the treatment and reuse of water with less than 10% of the total water volume replaced per day and in which the environmental conditions are being controlled. The concept of RAS is to reuse a volume of water through continuous treatment. The research was made during 13.12.2006-13.04.2007 and it took place in a home made bio-base. The main goal of this project was the construction of a mini recirculating aquacultural system, a functional RAS for rainbow trout and secondary to observe the evolution of rainbow trout in this system.

Key words: recirculating aquacultural system, RAS components, growth technology

BREEDING AND EXPLOITATION OF NATIVE SALMONIDS SPECIES WITH A VIEW TO DIVERSITY THE FISH PRODUCTION AND PRESERVE THE BIODIVERSITY

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*In Romania, the salmon breeding is the second branch of pisciculture as importance, but the obtained production is very small (about 1240 to; ANPA, 2005) and enough limited as bred species (brown trout - *Salmo trutta fario*, brook trout - *Salvelinus fontinalis* and rainbow trout - *Oncorhynchus mykiss*). The brown trout (*Salmo trutta fario* L.) and the huchen (*Hucho hucho* L.) represent two species with big economical, biological and culinary value, and to capitalize and promote the Romanian aquatic and endemic potential we consider timely and necessary that these ones to breed in specialized farms, with a view to diversity the fish production and to preserve the biodiversity. In the project, our consortium proposes projection and building of a pilot station for brown trout (*Salmo trutta fario* L.) and huchen (*Hucho hucho* L.) breeding in space and environment controlled, hall type, with control possibility of medium parameters. By application of modern and performed fish breeding system it can be promoted new methods, techniques and technologies, which have as final aim the obtaining of some diversity fish productions, and evidently superior given to those obtained in present days in trout farms from Romania.*

Key words: brown trout, huchen, native salmonids, biodiversity

RESEARCHES ON SOMATIC MEASUREMENTS TO SPIRLIN (ALBURNOIDES BIPUNCTATUS) FROM NADRAG RIVER BASIN

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With the help of body measurements we can appreciate the general development of fishes, the interdependence between different body regions, the growth rhythm, conformation and data use for relative and absolute values. Analyzing the average of female and male total body length it was noticed that at females the mean body length (9.99 ± 0.2 cm) is higher than in males (9.09 ± 0.23 cm). Mean body weight at females was 9.77 ± 0.71 , and in males was $6.97 \text{ g} \pm 0.49$. Maximum mean height in females was 2.41 ± 0.06 cm and in males was 2.08 ± 0.05 cm. Minimum female body height was 0.82 cm while at males was 0.73 cm.

Key words: Alburnoides bipunctatu , somatic measurement, river.

STUDIES ON SOME MORPHOLOGICAL CHARACTERS IN BIGHEAD CARP FRY

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The present paper investigates some morphological characters (total length, standard bodily length, head length, maxim height and bodily circumference) in representatives of bighead carp (Aristichthys nobilis) occurring in their first growing summer. Biometric analyses were performed on 100 individuals, in the end the morphological characters under investigations being statistically processed.

Explanation of the experimental results evidences low values of the standard error of the mean, which is indicative of a grouping of all external bodily variables under investigation close to the average value.

Key words: morphological characters, biometry, bighead carp

STUDIES ON SOME MORPHOLOGICAL CHARACTERS IN FRY SILVER CARP

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The present paper investigates some morphological characters (total length, standard bodily length, head length, maxim height and bodily circumference) in representatives of silver carp (Hypophthalmichthys molitrix) occurring in their first growing summer. Biometric analyses were performed on 100 individuals, in the end the morphological characters under investigations being statistically processed. Explanation of the experimental results evidences low values of the standard error of the mean, which is indicative of a grouping of all external bodily variables under investigation close to the average value.

Key words: morphological characters, biometry, silver carp

STUDIES REGARDING THE PRESENCE OF THE PATHOGENS BACTERIA INTO A RECIRCULATING SYSTEM OF BELUGA STURGEON INTENSIVE REARING

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Recirculating aquaculture offers good potential for successful fish farming since is often independent of environmental conditions. Maintaining healthy fish in a recirculating system involves establishing adequate dissolved oxygen levels, removal of solid wastes, and sufficient ammonia nitrification to assure optimal rearing conditions. Neglecting these, the fish immune system will depress, the facultative pathogen germs will be able to provoke important disease outbreaks into cultured biomass, as was happened in our recirculating pilot system. In this study are presented the pathological aspects registered to the beluga sturgeon of 1 year, reared into our recirculating pilot system, pathological aspects generated by a haemorrhagic bacterial septicaemia which was manifested in the conditions of low concentrations of DO. The disease was diagnosed to the affected fish through anatomo-pathological and clinical exam, haematological exam and microbiological exam.

Key words: bacterial haemorrhagic septicaemia, *Aeromonas hydrophila*, beluga sturgeon, recirculating system.

PRELIMINARY ASPECTS CONCERNING STRUCTURE PLANKTON AND BENTHIC FAUNA IN THE DAM LAKE HORIA – TULCEA COUNTY

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The present study provides information about the structure and dynamics plankton and of benthic fauna in four stations, established in the symmetry axle of the lake, and numbered from the dam zone through the tail of the lake, where is in progress the first series of experiments concerning the intensive breeding of sturgeons spawn in the floatable fish well, witch belongs to S.C. Kaviar S.R.L. Bucharest. The analyses data have roots from the works that are based on the samples taken in the period of year 2007 in the dam lake Horia, made through the baring of Taita river – Dobrogea.

Key words: plankton, phytoplankton, zooplankton, benthic fauna

THE DYNAMICS OF THE ICHTHYOFAUNA’S ECOLOGICAL GROUPS OF THE DANUBE (IN THE BRAILA ZONE) IN DIFFERENT PERIODS

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From the statistic dates was analyzed the dynamic of the different species of fish and the ecological groups which are taking part, on the Danube, in the Braila zone, realized in different periods.

Key words: the Danube, captures, ichthyofauna, limnique species, rheophile species, semi migratory, catadromous migratory species.

PRELIMINARY STUDY REGARDING THE EFFICIENCY OF DIFFERENT HORMONES ON PIKEPERCH SPERMIATION

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The aim of this study is to test the efficiency of different hormones on pikeperch spermiation and to establish a protocol for obtaining a high quantity of milt. Sixteen clinically healthy adult pikeperch males (3-4 years old) were used in our experiments. They were intraperitoneal injected with one of the following hormones: human chorionic gonadotropine - hCG (Pregnyl), GnRH analog (Receptal) and carp pituitary extract (CPE). These hormones were injected following two experimental protocols. The main differences between these two protocols are the number of stripings after the first injection (1 and 2 for the 1st protocol and the 2nd one, respectively) and the moment of thermal stimulation. The best results in stimulating spermiation were obtained with hCG and CPE. The protocols applicable for milt collecting in pikeperch males must include a thermal stimulation period.

Key words: pikeperch, hormones, spermiation

PATHOGENICITY OF *HENNEGUYA PSOROSPERMICA* (PHYLUM MYXOZOA) ON FRESHWATER SPECIES OF FISH ORIGINATING FROM THE DANUBIAN DELTA

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*The aim of this scientific work consisted in establishing the specific ethiology of gills infection, which has been found on the occasion of regular clinic and anatomo-pathological examinations, in some freshwater species of fish originating from the Danubian Delta area. Following these examinations, there has been pointed out the macroscopical lesions of gills together with the presence and morphology of parasitic cysts. The microscopic examination of the cysts resulted in diagnosing the specific pathological agent, which was the metazoan *Henneguya psorospermica*. These aspects and more are being presented in this paper.*

Key words: pikeperch (*Sander lucioperca*), pike (*Esox lucius*), *Henneguya psorospermica*, pathogenicity on fish

TECHNOLOGICAL ASPECTS REGARDING REARING OF THE *ACIPENSER RUTHENUS* SPECIES, ALBINO VARIETY TO SECOND SUMMER OLD, IN BRATES STURGEONS STATION

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*The *Acipenser ruthenus* (Linnaeus, 1758), albino variety, in the second summer rearing to Brates sturgeons station from Galati was experimented. A number of 513 one year old sterlet were stocked in three Ewos fibreglass tanks, at an individual mean weight of 40 g and total length of 20 cm, in the first day of June 2007. The experiment had extended on 165 days, until half of November. During experimental tries the fishes were monitoring permanently and the essential parameters of technological water (dissolved oxygen, pH and temperature evolution) were checked and recorded. Feeding was achieved with commercial granular food and the conversion coefficient recorded was 1,3. Final body mean weight of sterlet was 130 g/ex. and the average length of 30 cm; the specific growth rate was 0,55g/day., i.e. 90 g/ex, and the survival percent recorded was 89,08 %.*

Key words: *Acipenser ruthenus*, albino sterlet, sturgeons.

INTERRELATED ISSUES OF BIOSECURITY IN ROMANIAN FISH PRODUCTION FACILITIES

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Worldwide, aquaculture is the fastest growing agri-industry. Globally, opportunities exist to introduce or explore alternative species, new strains or highly selected stocks that represent substantial appeal to aquaculture. Movement of these products and organisms presents challenges to resolve potential interactions with the native ecology, the transfer of diseases to either freshwater fish culture or wild stocks and the potential transfer of contaminants or pathogens of concern for human food safety. The actual biosecurity culture at the majority Romanian fish farm facilities is one of indifference, denial and avoidance; a true "it won't happen to me" mentality. The formation and changes of attitudes and behaviors within the environment at a place of business has to be done top-down, from managers to laborers. There are numerous potential sources of entry for an infectious agent into an aquaculture facility. These include additions of new stocks as: embryoned eggs, larvae, fry, juvenile and broodstock. Contaminated water or feed, humans, animals or equipment, and sub clinical (asymptomatic) carriers within the existing stock (production fish or broodstock) might be other sources. General biosecurity measures need to be established for each facility to help support the activities of both disease prevention and disease control. A manual of standard operating procedures should be assembled to provide a set of standard rules for biosecurity measures and disease monitoring. The implementation of a specific biosecurity protocol might change the culture to better suit the aquaculture business and its goals.

Key words: aquaculture, fish farm, freshwater fish, biosecurity, prevention, control.

HEMATOLOGICAL CHANGES IN SOME FARMING CYPRINIDS UNDER THE HIBERNATION CONDITIONS

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*The study presents the hematological results of comparative determinations made before and after winter period (2006-2007 in one summer-old common carp, silver carp and bighead carp (C_{0+}). Our previous researches (Misăilă et al., 2004) show that, hypothermia and high storage density induce in farming fish a winter chronic stress state. So, in the two summer-old common carp, silver carp and bighead carp evidenced a pronouncedly hematological insufficiency, with the diminution of hemoglobin level at the end of winter with 11-26% against those from the winter beginning, as well as diminution of the hematocryte with 18-20% and of the number of erythrocytes with 25-45%. Also, Bejerano (1984) point out the diminution of Hb level from 4.5 to 3.8 g/dl in tilapia after a rapid acclimatization to under-lethal temperatures. The results of these researches made in one summer-old cyprinid fries: common carp (*Cyprinus carpio*), silver carp (*Hypophthalmichthys molitrix*) and bighead carp (*Aristichthys nobilis*), subjected to the wintering density of 15 t/ha and in unusual gentle winters conditions (2006-2007) evidenced a different response, suggesting the absence of conditions of stress installation, through the hematological indices values. In addition, was observed a differentiate response of three species in the experimental mentioned conditions. Thus, in common carp, the average of obtained values in the end of the winter (March) were comparable with the one from November-December, differences registered being situate below 3% in the case of Hb concentration (g/dl), hematocryte (%) and number of erythrocyte (mil./ μ l) and below 5% in the case of MCH and MCHC values. In silver carp, differences are situate below 3% in the Hb case, number of erythrocytes and MCH and of 7-11% in the case of Ht, MCV and MCHC. In bighead carp, the values from the end of the winter are less than prehibernation period ones with 5% to Ht, 16% to MCH and 30% in the case of MCHC, respectively, bigger values than these with 11.5% (Hb), 20% (MCHC) and 37% (number of erythrocytes).*

Key words: social stress, thermal stress, farmed cyprinids

HEMATOLOGICAL RESEARCHES IN SOME FARMING CYPRINIDS IN CONTROL CONDITIONS OF THE PARASITICAL STRESS

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*The present study analyses the hematological responses of some one year-old cultured cyprinids (C_{1+}) - common carp (*Cyprinus carpio*), silver carp (*Hypophthalmichthys molitrix*) and bighead carp (*Aristichthys nobilis*) - grown in polyculture for 220 days, in the conditions of an antiparasitical treatment, applied both as prophylactic one and along to the growth period (Trichlorfon preventive in doses of 0.1 mg/l in two steps and Calcium hypochlorite 2kg/ha two times/week). The usual hematological indices values, determinate in the end of the experiments evidenced the fact that, in two variant taken under study both the levels of Hb, Ht and the number of red blood cells behave the oscillations between normal limits for C_{1+} cyprinids, with notable differences between three species. In common carp, the values of all three indices from the research variant maintained with 11-12% lower than in the control variant, to the antipodes being bighead carp, in which all indices have in variant of research the bigger values with 11-32% than the control. This suggests that in common carp, respiratory functions accommodation is canalized less on quantitative line, rising on Hb quantity and more on qualitative line, the Hb capacity rise to bound the oxygen, and in bighead carp the tendency is reverse. In silver carp, the Hb values and the erythrocytes number are less with 8-23% in variant of research than to the control, while the hematocyte is with 13% elder than to the control variant, in correlation with the MCV values, which are with 43% bigger than to the lot of research.*

Key words: cyprinids, hematological indices, antiparasitical treatments

THE USE OF STRAWS AND HAY FOR ENABLES OF THE SURVIVAL PERCENT AT *CTENOPHARYNGODON IDELLA* ALEVINS

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The use of hay or straws as developing source for plankton ensures a higher survival percentage of the fish of alevins to fry basins than the classic system. Hay or straws are placed in basins in stacks of 15-30 kg and are covered in water in a percentage of 75%. The experiment was carried at the Chiochis acvcultural farm in two basins of 0.25 ha each. The basins were populated with 200,000 and at the end of the experiment the survival percentage in the basin with hay was 36.15% as compared to the 6.7 percentage obtained in the basin without hay. The average weight of the samples in basin 1 was of 3.65 g/sample as compared to 1.8g/sample in the other basin. The objective of the study was to point out that, the use of environmentally friendly methods of growing plankton ensure the larvae a higher survival percentage and better weight gain in their first development stages.

Key words: straw and hay, *Ctenopharyngodon idella*, survival percent

PHENOTYPICAL PERFORMANCES AT 5 *CYPRINUS CARPIO* LINES RESULTING FROM GALITIAN VARIETY GENITORS SELECTED ON DNA FINGERPRINTING AT 45 AND 145 DAYS

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*The paper presents some phenotypical performances of five offsprings families who belong to five lines created in *Cyprinus carpio* population, Galitian variety, at Arinis fishery complex, Maramures county. We observed the total body length (from top of nose to tail's end), the tail base length (from top of nose to tail's base), maximum height, body weight. The data were statistical analyzed using the average and dispersal indices and the differences were tested using Student test. There are significant differences at all the observed traits, between the offsprings obtained from the parental couples matched after DNA fingerprinting using PCR-RAPD technique and migration on polyacrylamide gel. There is also observed a homogeneity between the families offsprings, as well as a variability quite big between the families, which allows a good intra- and interlinear selection, useful for the lines consolidation. The performance values are shown at the ages of 45-47 days and 145-147 days, on 100 offspring per family, randomly captured for the representability of the extraction population.*

Key words: *Cyprinus carpio*, total body length (from top of nose to tail's end), tail base length (from top of nose to tail's base), maximum height, body weight.

PHENOTYPICAL PERFORMANCES AT 5 *CYPRINUS CARPIO* LINES RESULTING FROM LAUSITZ VARIETY GENITORS SELECTED ON DNA FINGERPRINTING AT 45 AND 145 DAYS

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*The paper presents some phenotypical performances of five offsprings families who belong to five lines created in *Cyprinus carpio* population, Lausitz variety, at Arinis fishery complex, Maramures county. We observed the total body length (from top of nose to tail's end), the tail base length (from top of nose to tail's base), maximum height, body weight. The data were statistical analyzed using the average and dispersal indices and the differences were tested using Student test. There are significant differences at all the observed traits, between the offsprings obtained from the parental couples matched after DNA fingerprinting using PCR-RAPD technique and migration on polyacrylamide gel. There is also observed a homogeneity between the families offsprings, as well as a variability quite big between the families, which allows a good intra- and interlinear selection, useful for the lines consolidation. The performance values are shown at the ages of 45-47 days and 145-147 days, on 100 offsprings per family, randomly captured for the representability of the extraction population.*

Key words: *Cyprinus carpio*, total body length (from top of nose to tail's end), tail base length (from top of nose to tail's base), maximum height, body weight.

REARING EFFICIENCY AND NUTRITIONAL QUALITY ASSESSMENT FOR CARP SAPLING (*CYPRINUS CARPIO* LINNE, 1758) FROM RECIRCULATING SYSTEMS

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*Common carp, *Cyprinus carpio* L. of 8 months older, rearing in recirculation system during 107 days period - he has been analysed from the point of view of feeding efficiency and nutritional quality of carp carcass. The stocking of breeding ponds has been made at 12.17 kg/m³ density, the initial average weight of fishes has been 82.2 g/ex., biochemical composition of carp carcass has been following: protein 14.35%, fat 1.10%, ash 1.67% and moisture 82.22%. Weekly, there has been analysed biochemical composition of meat and protein efficiency coefficient (PER), protein using efficiency (PUE), retained protein (RP). The nutritional quality of fish meat and appreciation coefficients of fish rearing they indicate a good capitalization of delivered food.*

Key words: carp (*Cyprinus carpio* Linne, 1758), carcass composition, flesh quality, rearing efficiency, recirculating system

DETERMINATION OF PROTEIN FRACTIONS IN THE BLOOD OF THE HIGH ECONOMIC VALUE FISH FARMED SPECIES IN ROMANIA

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In aquaculture, as in any other sector where work is carried out on live bodies, to get a high production yield depends upon maintenance and monitoring of an unaltered health condition of the biological material. To monitor the health condition of the biological material in a fish farm allows us to establish the preventive measures required to stop the spread of disease and the treatment to be applied in case a mass disease occurs. For this reason to know the value of the total protein and the protein fractions in serum enables us to differentiate the normal physiological condition of the fish material under research, from the eventual pathological modifications having occurred due to the defence reaction of the body. The most part of diseases have but a little influence on the concentration of the total protein in the blood, but some influence on certain protein fractions, and they alter the ratio between albumins and globulins. The level of the total protein in serum is, first of all, a synthetic indicator of the nutritional condition of the body, presenting, at the same time, ample qualitative and quantitative variations depending on species, age, sex, stage of sexual maturity, water temperature and especially in correlation with the health condition of fish. Alterations of the ratio albumins/globulins or of the ratio between different protein fractions have important pathological implications, especially concerning the immunity capacity of fish, a decrease below 0.3 in value of the ratio albumins/globulins in serum being significant for the health condition of fish

Key words: protein fractions, electrophoresis, carp, sturgeons, disease.

RESEARCH ON DETERMINATION OF CIRCULATING IMMUNE COMPLEXES IN THE BLOOD OF THE HIGH ECONOMIC VALUE FISH FARMED SPECIES IN ROMANIA

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The range of paraclinical investigations applied in ichthyopathology aims at assessing those parameters that can define the pathological modifications and the physiological condition of the fish material, as well as the defense reaction of the unhealthy body. Modification in value of these indicators points out some metabolic perturbations in fish body. Fish have an immunitary system whose complexity and efficiency are directly proportional to their evolution level. That is why, in comparison to the superior vertebrates, the immune reactions of fish body to an antigenic attack are lower, the immune response is weaker and slower, and the quantity of antibodies to form is low. Under the influence of a specific antigen, the immunoforating cells synthetize the corresponding antibodies, determining occurrence of a specific antigen-antibody reaction, resulting in occurrence of the Ag-Ac immune complexes having a role in annihilating and destroying the respective antigens. Formation of immune complexes (CI) is a normal physiological process within the humoral immunity of bodies, representing one of the methods to remove from the body the substances identified as non-self.

Key words: Immune complexes (CI), immunity, antigen, antibody.

COMPARATIVE ANALYSES CONCERNING PARASITIC DIVERSITY OF COMMON CARP AND KOI CARP

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*The experiments carried on ponds of CCDP Nucet, researches being axled on comparative and comprehensive analysis of pathologic incidences on common and Japanese carp. This researches present theoretical and empirical convenience, because allow to elaborate of prophylaxis and disease control on. The ichthyo-pathologic exam was carried on for 271 exemplars of common carp, subspecies *Cyprinus carpio carpio* and 31 exemplars of ornamental carp (koi carp). There were identified 30 species of allogenic parasites, 9 species of parasites characteristic for carp as well as some common species of parasites with broad dissemination on cultured fish. All analyzed exemplars of showed parasitic infestation, but with a different extent of extensively and intensively. The most important epidemiologic factors from the analyzed ponds that increase the parasitic invasions were represented by the presence of infested fish, rearing in policulture of species and ages, as well as by the high density, water quality, thermic and flow fluctuations,*

Key words: common carp, koi carp, parasitofauna, ponds.

NUTRIENTS DYNAMIC IN AN AQUAPONIC RECIRCULATING SYSTEM FOR STURGEON AND LETTUCE (*LACTUCA SATIVA*) PRODUCTION

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Aquaponics are modern production systems, which integrate the aquaculture technology with hydroponic systems (vegetable production without soil) with a goal of fructification of residual nutrients resulted from metabolic activity of fish biomass as high quality vegetable biomass sealable as ecological products. In the present study, as a first step in aquaponic recirculating systems evaluation, the authors aim to compare two types of recirculating systems: classical (hereby noted with RAS) and integrated/aquaponic (RAS_A) regarding water quality parameters generally, and TAN (total ammonia nitrogen) production and transformation, particularly.

Key words: recirculating system, aquaponics, sturgeons, water quality.

BRIEF ANALYZE OF THE EUROPEAN COMMISSION 2008 FISHING OPTIMIZATION POSSIBILITIES – LEGISLATION GUIDE

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The European Commission on 28 November 2007 tabled its annual proposal on fishing possibilities and attendant measures for 2008. This proposal takes account of the latest independent scientific advice on the state of fish stocks received in October from the International Council for the Exploration of the Sea (ICES), the Commission’s own Scientific, Technical and Economic Committee on Fisheries (STECF), and input from stakeholders. It also applies the approach already outlined in the Commission’s Policy Statement, which was published in June, and has since been the subject of consultations with stakeholders (IP/07/773). The Commission views fisheries management as a long-term process based on the analysis of long-term trends in the health of fish stocks. As this year’s policy statement made clear, there is still a long way to go if we are to achieve the aims of the Common Fisheries Policy, namely fisheries which are sustainable for the long-term in economic, social and biological terms. The Commission is therefore proposing further cuts in effort and/or Total Allowable Catches (TACs) in a number of fisheries, while generally respecting the rule that inter-annual variations should be limited to 15% increase or decrease, so as to provide a degree of stability for stakeholders. However, in a number of cases, scientists have warned that the situation is sufficiently urgent that even larger cuts in fishing opportunities are required.

Key words: fish, Regulation, health, legislation, safety, measure

RESEARCHES REGARDING THE TECHNOLOGICAL PERFORMANCES OF CARP REARING DURING WINTER PERIOD IN THE CONDITIONS OF A RECIRCULATING AQUACULTURE SYSTEM

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*The techniques of carp culture are highly diversified, ranging from the extensive production in pond or open water with no fertilization or supplemental feeding to highly intensive systems in concrete tanks or cages. Among the different carp species, common carp is the best species reared in intensive monoculture, the others (Chinese and Indian carps) being usually cultivated in polyculture (P. Kestemont, 1995). An experiment was conducted in inside recirculation system conditions to identify the technological performances on carp growth and survival at the Fishing and Aquaculture Department, Galați, during winter period (February, 2007 – March, 2007). The 1-year-old carp (*Cyprinus carpio*) 4792g; 4594 g; 4561 g and 4525 g (total weight) grew to 7384g; 7017g; 6924g and 7125 g in 44 days in aquarium 1, 2, 3 and 4, respectively. In all aquariums, the fish appeared healthy and no mortality was observed. Feed conversion efficiencies (FCE) had similar values among all aquariums, the highest FCE being found in B4 aquarium with 1, 57 value. Water quality parameters were acceptable range for fish culture. Results show that the carp rearing during winter period in the inside recirculation system is a very good economic solution.*

Key words: recirculation system, common carp, rearing, temperature

REFERENCED TECHNOLOGICAL PERFORMANCES FOR STURGEON FINGERLING BREEDING IN INTENSIVE SYSTEM

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*Work objective is to present an oversight regarding the modality to rearing the descendents of anadromous sturgeon species, *Acipenser stellatus*, *Acipenser gueldenstaedti* and *Huso huso*, obtained through artificial reproduction, indicating successively, the production system, its management, alimentation strategy for sturgeon species and technological performances registered by these. Experiments developed during two phases, respectively the post-embryonary one and sapling rearing during of a 168 days period. Registered performances of sturgeon species material were assessed in conformity with specifically biotechnological indicators.*

Key words: sturgeon, aquaculture, intensive breeding

SUSTAINABLE CONSERVATION OF THE AQUATIC BIO-RESOURCES THROUGH USE OF ABSORBENT MINERAL ADDITIVES AS ZEOLYTES TYPE

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Present scientific paper propose to evidence the chemical composition and the effect of the volcanic tuff, for a water quality maintenance at the optimum parameters, for technologies of semi-intensive and super-intensive rearing, and the distribution as ingredients in fodders and its effect in breeding and physiological state for different fish specie with economical value. During the last years, zeolytes represent a material used frequently in environment protection technology, which is based on the capacity of ionic changing and the absorption capacity. By reason of these chemical proprieties the intension is their implementation in Romanian aquaculture regarding technological water with optimum physic-chemical properties for fish species rearing.

Key words: preservation, aquatic bioresources, zeolytes

LDH ACTIVITY IN COPPER INTOXICATION OF CARASSIUS AURATUS GIBELIO GILLS AND INTESTINE

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*The pathological effects of two sublethal concentrations (100 $\mu\text{g/l}$ and 250 $\mu\text{g/l}$) of copper ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) on goldfish *Carassius auratus gibelio* were studied for 7,14 and 21 days. The specific activity of LDH in gills and intestine, two target organs that uptake the metal from the water were assayed. In gills at 100 $\mu\text{g Cu}^{2+}/\text{l}$ the specific activity of LDH was gradually decreasing, while in the intestine, after 7 days of exposure, the enzymatic activity was distinct significantly increased. LDH activity demonstrated a hypoxic condition and a stimulation of glycolysis. In the both organs ,the 250 $\mu\text{g Cu}^{2+}/\text{l}$ concentration generated a decrease of LDH specific activity after 7 days followed by an increase of this after 14 and 21 days of exposure. Histologically, the modifications are, generally, directly correlated with the toxicant dose and exposure time.*

Key words: gold fish, copper toxicity, LDH, histopathology

ECOLOGICAL CONTROL EQUIPMENT AND TECHNOLOGY OF UNDERWATER VEGETATION DEVELOPMENT

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*The excess of aquatic submerge vegetation development carries to the reduction of the real rearing area for the piscicultural material from the production farms and allow nestling of the ichthyophages bird species that decrease the fish production. Aquatic submerge vegetation stumble the utilization of aquatic zones for recreation and also wright function of basins utilized for the electric energy production, of micro electricity works through obstruction of the dams grid. The control of the aquatic submerge vegetation development, for *Myriophyllum verticillatum*, *Ceratophyllum submersum*, *Urticularia vulgaris*, *Potamogeton natans*, *Nimphoides peltata* species it is accomplish through the removing of some parts of these, preferably with all the stump system. Usually, these its accomplish with the floating equipments fit up with the thermic engines and the propulsion and governating elements who have harm over the fish and some others aquatic organisms through the noise, the displacing a large quality of water caused of propulsion systems and through the noxes elimination (flue, carburant trails, etc.). These technologies reside from the evacuation of the aquatic submerge vegetation and the stump systems of these with the help of an adjustable rake, hang up from the coast by a rope, wrapped to a drummer, who is trained by a motto-propeller group with a small installed power.*

Key words: aquatic submerge vegetation, aquaculture, aquatic ecology

EUSTRONGYLIDOSIS' OCCURENCE IN FRESHWATER FISH FROM THE DANUBIAN DELTA AREA

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*The groups of nemathodes who infect fish has been studyied since it has been noticed that these parasites infect a large variety of organisms, being widespread all over the world, in both freshwater and marine species. The aim of this study was to investigate the infections with *Eustrongylides* sp. in perch, pike, pikeperch, sheat fish, and sun perch, fished into the natural Romanian's lakes, around the Danubian Delta. Our study started on October 2005 and ended on March 2008. The fish have been clinically, pathologically and parasitologically examined. Following these exams, we have identified the *Eustrongylides* sp. larvae in muscles, cavity of body and gut in perch, sheat fish and pike; in liver, mesentery and body cavity in pikeperch; into the cavity of body in sun perch. We have also noticed unspecific lesions in these structures, pointing out the presence of circulatory disturbances (congestion and hemorrhage). In perch we have observed the multiparasiting phenomenon, in which *Eustrongylides* sp. has been found associated with *Myxobolus* sp., *Triaenophorus* sp. and *Piscicola* sp. into the same host.*

Key words: *Eustrongylides* sp., pike (*Esox lucius*), pikeperch (*Sander lucioperca*), sheat fish (*Silurus glanis*), sun perch (*Lepomis eupomotis gibbosus*), perch (*Perca fluviatilis*), multiparasitism

SOME COMPARATIVE BIOMETRIC ASPECTS IN *ARISTICHTHYS NOBILIS* AND *HYPOPHTHALMICHTHYS MOLITRIX*

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*The paper performs a comparative analysis of some biometric (total length, standard length, head length and caudal footstalks length) in two cultured cyprinids species grown in a controlled system, namely: *Aristichthys nobilis* (bighead carp) and *Hypophthalmichthys molitrix* (silver carp), of various ages (starting with the first up to the fourth growth summer).*

*The results obtained evidenced that, along the four growing stages, the representatives of *Hypophthalmichthys molitrix* show slightly higher values than those of *Aristichthys* genus for the total and standard bodily length, while for the head length the situation is reversed.*

Key words: biometry, age, *Aristichthys nobilis*, *Hypophthalmichthys molitrix*

THE COMPARATIVE STUDY OF SOME BODILY VARIABLES IN *ARISTICHTHYS NOBILIS* AND *HYPOPHTHALMICHTHYS MOLITRIX*

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*The paper performs a comparative analysis of some bodily variables (maximum bodily height, circumference and bodily weight) in two cultured cyprinids species grown in a controlled system, namely: *Aristichthys nobilis* (bighead carp) and *Hypophthalmichthys molitrix* (silver carp), of various ages (starting with the first up to the fourth growth summer). The results obtained evidenced that, in the four-summer old the representatives of *Aristichthys nobilis* show slightly higher values than those of *Hypophthalmichthys* genus, for the all bodily variables taken into study.*

Key words: bodily variables, bighead carp, silver carp

STUDY CONCERNING CHEMICAL COMPOSITION OF FISH MEAT DEPENDING ON THE CONSIDERED FISH SPECIES

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In this paper the authors approach a very actual thematic concerning the fish meat quality, depending on different species with different alimentary behavior and life style. For this goal, it was made chemical analysis of 10 species of fresh water and marine fish, starting with the establishment of the different body components percentage related at the total body weight and continuing with the determination of the chemical composition of the analyzed species. Also, we approach aspects related to the qualitative differences of fish meat, depending on the species, and we compared these result with the meat obtained from domesticated animals. The obtained results showed that the fish meat is clearly superior, from qualitative point of view, comparative to the domesticated animal's meat.

Key words: quality, fish meat, biological value, domesticated animals.

IMPLEMENTING THE HACCP SYSTEM IN STRUCTURELESS MEAT PRODUCTS

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This paperwork presents a HACCP system implementation in a structureless meat products manufacturing factory study. The steps that were followed in order to provide the consumer with safe preparations are emphasized, from the hazard analysis to establishing Critical Control Points (CCP) and critical limits to be monitored, until the corrective action and verification procedures establishment. Finally, the documentation concerning all procedures and records appropriate to these principles and their application was established.

Key words: HACCP system, structureless meat product, CCP, hazard, monitoring, corrective actions

VARIATION IN MEAT COMPOSITION VISCOSITY DURING THE MIXING PROCESS

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Animal raw material processing is directly influenced by the physical and chemical characteristics of the materials which also influence their water holding capacity. The various combinations and status of the raw materials used in the food industry determine specific behaviours that may influence the processing equipment performance and construction. The study on meat composition viscosity depending upon the added components, temperature and mixing time length, has shown that viscosity is increasing with lower added water percentage, lower mixing temperature and higher mixing time length.

Key words: meat composition, viscosity, pork haunch, mixing,

STUDY ON THE FACTORS INFLUENCING HYDRATION AND WATER RETENTION CAPACITY OF MEAT

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Top-quality food produce and high profitability in processing requires high quality in raw materials. Therefore, to achieve these objectives, it is imperative to know the properties of the war materials, and the factors that influence these properties. The properties of the meat directly involved in increasing economic efficiency and final produce quality are the so-called technological properties: hydration capacity and water retention capacity of meat. These properties are determined by some factors belonging to the intrinsic quality of meat, animal slaughter methods, technological operations applied to the meat, and the auxiliary materials used.

Key words: meat, hidratação capacity, water holding capacity

THE INFLUENCE OF MILK COOLER HCA PERFORMANCES ON THE TOTAL NUMBER OF EMBRYOS (NTG) FOUND IN MILK

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The purpose of the present researches, established in conditions of great productivity, is to create influence of the cooling devices over the microbiological quality of milk submitted to the cooling quantified through NTG. The results obtained point out the aspect that the technique-functional performances and the hygiene state belonging to the studied cooling devices (of the same type) influence the microbiological quality of milk, the sense and the size of the influence is very different according to the cooling used practically.

Key words: cooling real rate, milk cooling method, total number of aerobic mesophilic embryos

THE INFLUENCE OF HCA MILK COOLERS PERFORMANCES OVER THE TITRATABLE ACIDITY OF MILK

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The influence of cooling over the titratable acidity - ΔA_r materializes itself in all cases in a growth of medium values of the parameters, of values of this growth are different: only 0,8 °T at the HCA 8000 cooler, 1,09 °T at the HCA 5000 cooler and even 1,21 °T at HCA 6000 cooler. The differences are due to the difference in the cooling method used, but also due to the performances regarding the real rates of cooling accomplished in cooling the milk with HCA coolers.

Key words: milk cooling method, titratable acidity, technological quality

STUDY ON THE SEPARATION THROUGH THIN LAYER CHROMATOGRAPHY OF THE CHOLESTEROL IN THE BUFFALO MILK ORIGINATING IN THE MESENDORF FARM

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Within the present study, we conducted a thin layer chromatographic separation of neutral fats in buffalo milk, following sodium metoxide saponification and the exposition to $\lambda=366$ nm. The extraction of free and esterized milk cholesterol was conducted according to the Folch et al. (1957) method. The free and esterized cholesterol, as well as triglycerides appear as brown spots (iodine complexes with the double connections between the compounds under analysis). Qualitative identification was conducted through the comparison of R_fs for free and esterized cholesterol, in the samples analyzed with existing standards. The semi-quantitative analysis was conducted through a visual comparison of the intensity encountered in free cholesterol spots within samples under analysis and the standard of different concentrations applied on the same board. Buffalo milk samples originated in the Mesendorf Farm, considered and certified as an ecologic farm.

Key words: cholesterol, milk, buffalo

DETERMINATION OF PROTEINS FROM BUFFALO MILK USING HIGH PERFORMANCE LIQUID CROMATOGRAPHY RP-HPLC

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In the hereby paper, we have undertaken a study on buffalo milk proteins, employing high performance liquid chromatography (HPLC). This RP-HPLC technique is commonly employed in the separation and assessment of caseins K, and, in the fresh, as well as processed milk. These methods are also successfully applied in the authenticity and origin assessment of certain cheese products and the qualitative analysis of milk in bubalines, ovines, caprines and bovines (Ferreira și Cacote, 2003; Veloso și colab., 2002). In order to identify the main protein types, we found support in literature data (Miranda și colab., 2004), and thus achieved the chromatographic separation on whole milk, lactoserum and casein samples.

Key words: buffalo, proteins, HPLC

ON THE QUALITY OF CARCASS AND PORK IN SWINE EXPLOITED ON FAMILY FARMS

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Maximum values of dry matter and fat (% of the carcass weight) is achieved in swine exploited on small private family farms at 137 kg of dry matter and 115 kg of protein. Slaughtering swine at higher weight results in an increase of the dry matter and of the caloric value because of the increase of the amount of fat in the muscular fibber; thus, pork is of low quality because of the massive accumulation fat substance and the economic efficiency of producing pork is improper, with supplementary expenses on feed. Fattening swine on small family exploitations up to over 11 kg results in changes of the meat / fat ratio, detrimental to pork meat because of both thickening of lard on the animals' back and of fat depositions in the muscular fibber; though this improves pork quality, it is done with high expenses of energy, resulting in inefficient exploitation on private family farms that in most cases only supply for their families and rarely sell extra production.

Key words: family exploitation, swine, quality, carcass, pork

A STUDY OF CONSUMERS' PROTECTION IN THE ARAD COUNTY

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The National Authority for Consumers' Protection is concerned to survey the market of agro-alimentary produce; as a result of the punctual programme, it develops control activities in order to check quality / conformity of foodstuff supplied for sale. Meat preparations are the most demanded and preferred; this is why they have paid particular attention to quality, labelling, marketing, and storage. Of the total 87 complaints concerning lack of compliance with the standards of such items as fruits, milk, meat, vegetables, bread and bakery, alcoholic and non-alcoholic beverages, coffee, chocolate, and fish preparations, only 31 proved justified. We can see that of the total complaints only 35.63% are justified and that they concern such produce as biscuits, fresh and refrigerated fish, vegetable and fruit juices, pet foods, spirits, beer, and non-alcoholic beverages.

Key words: consumers' protection, foodstuff

RESEARCHES REGARDING THE MICROBIOLOGIC PARAMETERS VALUE FROM RAW MILK USED IN TELEMEA CHEESE TECHNOLOGICAL PROCESS

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An important faze for food quality control is verification of microbiological parameters of food products. In this way is assuring the prevention of alimentation toxicological infections to consumer, avoiding the technological and economical losses as well as increasing the products conservation period. In this paper are presents the microbiological exam results from raw milk used in Telemea cheese technological process, for 5 stations studied. The determinations were made on 2 series with 57 samples each of them, prelevated in reception fase, in summer and winter season.

Key words: microbiological parameters, quality, food toxicological infection, technological loss, conservation

RESEARCHES REGARDING THE SOMATIC CELLS NUMBER FROM RAW MILK USED IN TELEMEA CHEESE TECHNOLOGICAL PROCESS

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It is known that by milk production hygiene must be assure: milk microbiological security, increase the sensorial and nutritive properties, increase term of availability and consumption. The milk hygienic national strategies involved: raw material risk contamination avoiding and reducing as can is possible and the microorganisms destroying or stopping development of those. In this paper it is presented the results of somatic cells number determination by raw milk used in Telemea cheese technological processes within 5 research stations. Determinations were effectuated on 2 series with 57 samples each of them, prelevated in reception phase in summer and winter seasons.

Key words: somatic cells, quality, contamination, raw milk, hygienic value.

SIGNIFICANCE OF FUNCTIONAL FOODS OF ANIMAL ORIGIN IN HUMAN HEALTH

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There are physiologically active components in foods from both plants and animals, that potentially could reduce the risk of chronic diseases. These are functional foods. The most importants of these active components- discussed in the present paper- are omega-3 fatty acids, conjugated linoleic acid, and probiotics with many health promoting effect.

Key words: functional foods, omega-3 fatty acids, conjugated linoleic acid, probiotics

HONEYDEW HONEY: CORRELATIONS BETWEEN CHEMICAL COMPOSITION, ANTIOXIDANT CAPACITY AND ANTIBACTERIAL EFFECT

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Selected physico-chemical parameters, total polyphenols, flavonoids, antioxidant and antibacterial activity of honeydew honey samples from Romanian were determined. Regarding the chemical composition, analysed honey samples framed in this type of honey, phenolic content, determined as gallic acid equivalents, presented a mean value of 116.45mg GAE/100 g honey. Total flavonoid content expressed as quercetin equivalents, was 1.53 mg in honeydew honey. Antioxidant activity expressed as % inhibition of a solution of DPPH, ranged between 47.84 and 62.99%. The concentration of honey that inhibit with 50% the DPPH solution was established to be 16.16%. 10 strains of Staphylococcus aureus presented different inhibition percentages when were treated with a solution of honey. In conclusion, Honeydew honey could be recommended to complement other polyphenol source in human diet and also used in medical treatment

Key words: honeydew honey, radical scavenging activity, DPPH, antioxidant power, FRAP, antibacterian effect, Staphylococcus aureus

PRELIMINARY RESEARCHES REGARDING THE GENETIC AND MORPHOMETRIC CHARACTERIZATION OF HONEYBEES (*A. MELLIFERA L.*) FROM ROMANIA

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*The international investigations regarding the honeybees' diversity carried out until now have revealed a certain degree of genetic pollution in different countries from Europe, because of the import of more productive honeybees' races or of some interracial honeybees' hybrids. This fact might have a negative impact on the success adaptability of honeybees at the ecosystem. Although, the Romanian honeybees (*Apis mellifera carpathica*) are well adapted to the local conditions and express a good resistance to diseases, the introgression (genetic pollution) of different honeybees' races could be an imminent event. So that, starting from 2007, by a cooperation between the Institute for Beekeeping Research and Development from Bucharest and the Institute of Genetics of the University of Bucharest, we have initiated different investigations in order to obtain a more accurate state of the Romanian honeybees' diversity. We have performed specific molecular analyses, using mtDNA (the COI-COII test) extracted from 32 different honeybees samples collected from several regions from Romania. For a better and detailed characterization of the collected honeybee's samples we have also carried out some morphometric measurements of their wings. Our data have shown that the Romanian population of honeybees is almost homogenous from the genetic and the morphometric points of views. These types of investigations represent a premiere for Romania.*

Key words: honeybee, *Apis mellifera carpathica*, mtDNA, morphometry, population characterization, ecotype.

THE TECHNOLOGY OF WORMCULTURE – THE IMPORTANT FACTOR IN DEVELOPMENT OF ECOLOGICAL AGRICULTURE

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The investigation performed below has the goal of showing how the ecological situation can be improved through worm-culture, meaning the bioconversion of organic offal. This can be achieved by obtaining valuable organic fertilizers and ecological agricultural production by wormculture.

THE STUDY OF THE AMINOACIDS IN PROPOLIS COMPOSITION

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The propolis presents a complex product, but its quality and biologic value depends on the chemical composition and looking at the ecological situation the study of the composition and the amino-acids dynamic in its composition have theoretic and practice importance. The aim of the experiments was the study of the composition and the amino-acids dynamic in the collected propolis in different areas from Republic of Moldova during the active season. There was established the amino-acids composition and their quantity in propolis at the special analysis at Centre of Metrology and Automation of Scientific Researches at the Academy of Science of Moldova. There was established a large amount of amino-acids (6,868 mg/g) in collected propolis from south area of Republic of Moldova. From all determined amino-acids the largest quantity it is the monoaminomonocarboxylic group (alanine, valine, glycine, leucine, isoleucine, serine, treonine) – 41.45%. The monoaminodicarboxylic group of amino-acids (asparagic acid and glutamic acid), consists – 25.53% from the total, heterocyclic (histidine, proline) – 11.39%, diaminomono-carboxylic (arginine, lysine) – 7.47%, cycle-aromatic (phenylalanine, tyrosine) – 5.92%, cystine – 6.90%, methionine – 1.19%. In autumn season (August - September), the average of the amino-acids quantity consists 3,426mg/g. The amino-acids quantity in autumn period has decreased to the spring period by 1.74 times. The highest amount had glutamic acid – 16.34% and asparagic acid 11,58% from the whole amount, the lowest quantity had methionine – 0,64% and triptophan – 0.67%. There was determined that the amino-acids quantity in propolis depends on the geographic area as well on the plants species from which it was collected. There happen quantitative changes during the active season in the amino-acids composition of the propolis.

Key words: bees families, propolis, amino-acids

PRELIMINARY DATA ON THE MELIFEROUS CAPACITY OF SOME FOREIGN SUNFLOWER HYBRIDS

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The soil and climate conditions in Romania are favorable for the sunflower crops. The sunflower is one of the main large culture crops in Romania and the most important oilseed plant, being on the third place as cultivated area, after corn and wheat. This makes the sunflower the most important melliferous crop plant, ensuring the last great production harvest before winter. This importance results both from the period and the duration of flowering, and from the large number of flowers per unit of area and the great nectar secretion. Yet, the melliferous capacity in sunflower is affected by the climate conditions [3], fact ascertained by beekeepers over great variations in time and space of honey productions. Likewise, the melliferous capacity in sunflower differs from one hybrid to another [1][2], the beekeepers being interested in the melliferous capacities specific to various sunflower hybrids cultivated in our country. The current work depicts the results of researches on the melliferous capacity on a variety of 4 sunflower hybrids cultivated over 5 periods, under the conditions of the southern part of Romania, (15 km North-East from Bucharest) and under the climate conditions of 2007. The studied sunflower hybrids were: Fleoret OR, Melodi, Sunko and Arena. By the cultivation over different periods it was intended that the flowering period to overlap periods with different climate conditions, so to determine the melliferous potential in the hybrids studied in different climate conditions and to note the way in which they vary according to the climate conditions.

Key words: Sunflower hybrids; Melliferous characteristics.

RESEARCHES CONCERNING THE HEAVY METAL CONTENT OF THE RAPE HONEY ORIGINATING FROM THE BANAT AREA IN THE YEARS 2006-2007

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The purpose of the researches was the observation of the heavy metal quantity existing in four rape honey samples, originating from Bulgarus and Grabat localities from 2006-2007 production.. In 2006 besides the other elements observed in 2007, has been noticed the nickel that varied between 0.02 mg/kg in Bulgarus and 0.002 mg/kg in Grabat. From the data, it is observed that in the 2007 collected honey, besides the existing metals from 2006 has been identified the zinc that in Grabat has had a very high concentration of 0.07 mg/kg and in Bulgarus its concentration was 0.03 mg/kg and the ferrum with the following values : 0.03 mg/kg in Bulgarus and 0.005 mg/kg in Grabat. In all four collected samples the chromium has had the same concentration of 0.001 mg/kg in both years of experiments. The paper is original through the research and honey samples' collection manner, the location and the years of research and also due to the fact that the researches were developed in two neighboring localities that during the year don't get the same precipitation quantities according to the climatic data existing in the town hall registers.

Key words: heavy metal, bee, honey, determination, substance

MORPHOMETRIC DIFFERENCES BETWEEN HONEY BEES (*Apis mellifera carpatica*) POPULATIONS FROM TRANSYLVANIAN AREA

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*The result of the long evolutionary process formed, by natural selection, variable races and ecotypes which are biological and ecological differentiated. The Romanian, *Apis mellifera carpatica* is the most adapted and the most efficient species at the local conditions. Morphometric measurements were the major criteria for classification described by Ruttner (1988) and are the basis of our study. In this way 8 morphometric characters of honeybees from Transylvanian region were measured. The data obtained show that the honeybees' ecotype genes are mixed due to the migratory beekeeping.*

Keywords: *Apis mellifera carpatica*, morphometric measurements, geographical analysis, Transylvania area

FOURIER TRANSFORMED INFRA RED SPECTROSCOPY IN BEEPRODUCTS ANALYSIS

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FTIR spectroscopy is a very recent technique mainly used so far for classification of honeys of different geographical and botanical origin, on identification of honey and other food products adulteration. Some of the advantages of FTIR methodology are described in this article.

Keywords: FTIR spectroscopy, Beeproducts, qualitative analysis, authenticity

STUDY OF PHENOTYPIC CHARACTERS VARIABILITY OF THE SILKMOTH COCOON FROM THE NATIVE GENETIC STOCK OF BOMBYX MORI L. SP.

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Commercial Society Sericarom-Research department, Bucuresti, Romania

*This study had aims the analysis of phenotypic characters variability of silkmoth cocoon within the native genetic stock of *Bombyx mori* L. sp. The biological material was represented by 72 races consisting of the gene stock of *Bombyx mori* sp., grouped by their origin. The main phenotypical and quantitative parameters of the races that represent the gene stock of *Bombyx mori* sp., present the following values: raw cocoon weight (1.445-2.361 g), cocoon shell weight (0.240-0.520 g), fiber length (746-1356 m), metric number of fiber (2917-3764 m/g). Depending on the quantitative parameters value, the silkworm races are being used differently, entire genetic stock being destined for various technological levels, as follows: 4 active races (parents of hybrids), 4 candidate races for parents of hybrids, 64 races in preservation.*

Key words: *Bombyx mori* L., cocoon shell, silk cocoon, silk fiber

RESEARCHES CONCERNING OF THE MINERAL CONTENT OF ACACIA HONEY DERIVED ON DIFFERENTS COUNTRY

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The paper presents the results of the research concerning chemical composition of acacia honey from the different region. Analysis concerning the mineral content were made in 14-19 march 2008 in the molecular and atomical spectroscopy laboratory of the Faculty of Agro-Food Tehnology and Processing from USABMV Timisoara, through spectroscopy with atomic absorbability in flame with the spectrometer. Contr AA 300 with continous surce. There were analztzed 3 honey samples made in 2007 from Domasnea and Farliug (Caras-Severin) and Bala (Mehedinti). The ash contain in Na, K, Ca, Mg, Cu, Zn, Mn, Fe, Pb, Co, Cr was determined.

Key words: acacia honey, mineral composition

A STUDY ABOUT PHYSICOCHEMICAL COMPOSITION OF FRESH AND LYOPHILIZED ROYAL JELLY

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*This paper contents a summery about physicochemical composition of frash and lyophilized royal jelly. Royal jelly (RJ) is a yellowish and creamy secretion from hypo pharyngeal and mandibular glands of young worker bees (*Apis mellifera* L.) to feed all larvae for the first three days of their life and the queen bee for both her larval life and adulthood.. Royal jelly is a honey bee secretion that is used in the nutrition of the larvae. Queen bees are made, not born, and their feeding with royal jelly is the key to that process. The geographical authenticity of royal jelly can be determined also by pollen analysis (Ricciardelli d'Albore et al., 1978; Ricciardelli d'Albore, 1986). The physicochemical composition of pure royal jelly are analyzed by determining moisture, ash, lipids, proteins, carbohydrates, 10-HDA; and for lyophilized royal jelly are analyzed by determining ash, lipids, protein, carbohydrates, 10-HDA, sugars. 10-HDA content is the criteria of royal jelly quality analysis and it is a freshness parameter(Antinelli J.F., Sarah Zeggane, Renee Davico, Catherine Rognone, Jean Paul Faucon, Louisette Lizzani)*

Key words: royal jelly, composition, quality parameters

THE EVOLUTION OF SOME BIOCHEMICAL PARAMETERS IN THE HONEYBEES' HAEMOLYMPH (*A. M. CARPATHICA*) COLLECTED IN THE INACTIVE SEASON

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*The biochemical analyses of the blood are largely used for the routine diagnosis and especially for the metabolic survey in farm animals. These facts conduct us to the idea that similar analyses, applied on honeybee hemolymph, could be used IN monitoring the healthy state of honeybee colonies. The present studies represent preliminary researches, which aimed to investigate the variability of the main biochemical parameters in the hemolymph of the healthy honeybees (*Apis mellifera*) in inactive season. The researches were carried out on honeybee samples collected from 5 honeybee colonies belonging to a breeding apiary of the Institute for Beekeeping Research and Development from Bucharest. In order to perform the biochemical analyses, the honeybees samples, consisting in 50 individuals on sample (10 individuals/colony) were randomly collected and their haemolymph collected, at different time intervals, in inactive season (fall-winter). Totally, there were collected 250 haemolymph samples in a 2 years interval and the following 21 biochemical parameters were analysed: GLU, HDL-c, ALP, T-cho, Tprot, Alb., BUN, LDH, CPK., Mg, IP), GGT, GOT, GPT, Ca, Cre., Amy, T-BIL, TG, UA.. The test was carried out after the collection and processing of the samples using the SPOTCHEM EZ_{SP4430}, equipment with dry kits, the slides technique, respectively .During the 2nd part of the inactive season, the values of most biochemical parameters increase in different proportions, their levels being maintained also in the first part of the active seasons (April, May, June).The values obtained for the main studied biochemical parameters in the haemolymph of the healthy honeybees collected from honeybee colonies kept in natural conditions show a highly variable evolution in the two consecutive years of experiments during the inactive season.*

Key words: *Apis mellifera carpathica* honeybees, haemolymph, biochemical parameters

THE APIPHYTOTHERAPY WITH PROACTIVATOR IN THE VETERINARY DERMATOLOGY AND SURGERY

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The main objective of this clinical study consisted in evaluation of the therapeutic effects of the propolis extract used in different disorders at company animals, thus being improved the palette of the apitherapeutical products used in veterinary purposes. The experiments were carried out on company animals (two experimental groups) during the 2007-2008 period, in the frame of the Veterinary Medicine Faculty – Bucharest and the University - Spiru Haret, at the veterinary departments: Parasitology, Dermatology and Surgery. The raw propolis was collected from the bee colonies belonging to the Institute of the Beekeeping Research & Development–Bucharest and the apiphytotherapeutical product based on propolis was obtained in the Apitherapy sector of the same Institute. In a first stage were obtained the anti-parasite, dermatological and surgical veterinary product PROACTIVATOR based on propolis alcoholic extract and Aloe vera gel. The experiments consisted in administration of the obtained preparation in different disorders on the experimental groups as: dermatological (plagues, chemical and physical burns), parasitological (extern parasites: scabies supra infected or not) and in veterinary surgery (as a protective layer applied on the sutured plague). In dermatologic disorders the effects of the PROACTIVATOR product were established by way of clinical periodical examinations until the total recover were done. In external parasites and connected disorders it was established the repellent or killing effect of the preparation on the infestation with parasites and the degree of control in the correlated infections. In skin tissue surgery it was established the cicatrising effect in sutured plagues and the anaesthetic local effect. The established of the studied preparation efficiency was similar as those used in classical treatments with synthesis products. The advantage of the utilization of PROACTIVATOR eliminates the toxic and cumulative effects of the chemical substances as it is well known.

Key word: propolis, company animals, surgery, dermatology

STUDY REGARDING THE CORELATION BETWEEN TOTAL GERMS COUNT AND CHEMICAL COMPOSITION IN RAW MILK

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The aim of this study was to quantify the correlations between total germs count (TGC), the major chemical compounds in raw milk (fat, proteins and lactose) and milk acidity. Studies were carried out on Romanian Black and White cows, from March 2005 until March 2006 at the Didactical farm from the Banat University of Agricultural Sciences Timișoara. TGC was higher during the warm season (March 2005 – September 2005) 721400 – 841750 cfu/ml milk compared with cold season (October 2005 – March 2006) when values ranged between 635250 and 873000 cfu/ml milk. There weren't any significant differences between seasons for this trait. Obtained results showed that among TGC, major chemical compounds (fat, proteins and lactose) and milk acidity there weren't any statistically proven correlations.

Key words: milk, TGC, chemical composition, correlations

STUDY REGARDING THE CORELATION BETWEEN SOMATIC CELLS COUNT AND MAJOR CHEMICAL COMPOUNDS IN RAW MILK

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This study approaches the dynamic of somatic cells number and chemical composition of milk during 13 months of control. The study also investigates the correlations between the number of somatic cells and some chemical parameters in milk. Studies were carried out on Romanian Black and White cows between March 2005 and March 2006 at the Didactical farm of the Banat University of Agricultural Sciences Timișoara. As quality indicator, the number of somatic cells has different values among the controls. Average values for the 13 months of control, with the exception of three controls, were below maximum limit admitted from 1th of January 2007 (600000 SCC/ml milk). There weren't any significant differences for SCC between the two seasons. Chemical parameters in milk varied in close limits and the differences were not significant, with one exception for fat percent. Fat percent is higher ($p < 0.05$) in the cold season 3.87% compared with 3.55% during the warm season. Somatic cells number is weak correlated with lactose and strong correlated with proteins.

Key words: milk, TGC, chemical composition, correlations

STUDY REGARDING THE INFLUENCE OF PARITY ON MILK PRODUCTION TRAITS IN ROMANIAN BLACK AND WHITE COWS

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The aim of this paper was to establish the way parity had an influence on the milk production and lactation length in Romanian Black and White cows from the Didactical Farm Timișoara. The influence of the parity on the milk production and lactation length was studied on 125 lactations (37 first lactations, 23 second lactations, 29 third lactations, 14 fourth lactations, and 22 fifth and over lactations). The longest lactation was found in the second parity (397.9 days) and the shortest in the 5+ parity (353.3 days). The maximum milk yield per total lactation was attained in the third lactation (5705.4 kg) and the minimum milk yield in the first lactation (4652.6 kg). Variability for this trait was higher in second lactation (20.74%). The lowest variability coefficient was found in the third lactation ($v\% = 15.36\%$)

Key words: parity, lactation length, Romanian Black and White

RESEARCHES REGARDING THE CALVING SEASON INFLUENCE ON QUANTITATIVE AND QUALITATIVE MILK PRODUCTION IN ROMANIAN BLACK AND WHITE COWS

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The aim of the paper was to study the influence of the calving season on the milk, butterfat and protein yield per normal lactation. Researches were carried out on 125 lactations from Romanian Black and White cows from the Didactical Farm Timișoara. Lactation were divided into the four seasons as follows: summer with 34 lactations, winter with 19 lactations, spring with 35 lactations, and autumn with 37 lactations. Results showed that winter calving cows produced the highest milk, butterfat and protein yields per normal lactation (4932.2 kg, 189.63 kg, and 153.79 kg, respectively).

Key words: calving

MILK PRODUCTIONS AT SERVAL FARM IN MUREȘ DISTRICT, OBTAINED WITHIN THE EXISTING CONSTRUCTIVE SOLUTIONS

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The paper present the research results performed at a farm of the Mureș district, between 2005 and 2008, concerning the milk productions, obtained in the existing constructive solutions. The essential changes produced in the last decades, concerning the dairy cattle raising and exploitation technologies, food, reproduction and amelioration, at one time with the technique development witch allow the mechanization of some production processes, imposes, also, our intervention in the constructive variants of accommodation through the actual shelter modernization, existing in this farm.

Key words: dairy cows, farm, shelter, milk production

STUDY ON DAYS OPEN IN A ROMANIAN BLACK AND WHITE COW POPULATION FROM HE WESTERN ROMANIA

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The aim of the paper was to study the length of days open in Romanian Black and White cows according to county and parity. Researches were carried out on 3167 lactations obtained from 1200 cows reared in Timiș and Caraș-Severin counties. Average days open was 163.5 days (5 months and 11 days) for cows in Timiș County and 122.7 days (4 months and one day) for cows in Caraș-Severin County. The difference of 40.8 days in the favor of cows from Timiș County was significant ($p < 0.001$). The longest period of days open was obtained in primiparous cows both in Timiș and Caraș-Severin, being 174.6 days (5 months and 22 days) and 139.0 (4 months and 17 days), respectively. The shortest length of days open was obtained for both counties in the third parity, being 150.8 days (5 months and 4 days) and 112.9 (3 months and 21 days), respectively. In Timiș County, primiparous cows had a significantly longer days open ($p < 0.05$) compared to cows in second, third, fourth and seventh and over parities. There were no significant differences ($p > 0.05$) for days open between parities for cows in Caraș-Severin County.

Key words: days open, cows, Romanian Black and White

THE EFFECT OF SOME FACTORS ON THE MILK MAIN COMPONENTS

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The paper emphasizes the results of the research performed on 317 Romanian Spotted cows from six private exploitations located in the central part of the country. The main qualitative and quantitative traits of the milk production, season and familial structures (half sisters by father) effect were recorded in dynamics by four lactations on the above mentioned population. The research concerning the evolution of some traits of the quantitative and qualitative milk production in dynamics by lactation reveals many aspects, which in all cases equally reflects both the genetic potential of the biological material that can be expressed and putting into practice of the rearing and exploitation technologies. Concerning the quantitative milk production, by normal and total lactation an almost plane curve is described (Table 1, Figure 1). This aspect was also reported for the collecting areas and farms (Tables 2 and 3). Concerning the season effect, it is observed function of the adopted technology of exploitation, that for effectives is significantly observed only in summer (Table 4). In last part of the paper, the main traits of the milk production in 16 familial structures of primiparous half sisters by father, classified function of the quantity of fat and protein yield by normal lactation are emphasized (Table 5). The obtained results are concluding.

Key words: milk, lactation, Romanian Spotted, genetic potential

STUDY ON CHEMICAL AND BIOLOGICAL PARAMETERS OF COLOSTRUM IN ROMANIAN BLACK AND WHITE COWS

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The aim of the paper was to evaluate the colostrum quality and changes in composition during the first seven days postpartum. Researches were carried out on five Romanian Black and White multiparous cows. Samples of colostrum and transition milk were collected at calving and at 6-hour interval for seven days. Samples were analyzed for chemical composition using an infrared spectrometer (fat, protein, lactose and solids non-fat), for somatic cell count using a viscosimeter, for density using a desimeter, for total bacteria count using the classic incubation on Petri dish, and for immunoglobulin concentration using a colostrometer. For study the evolution of the colostrum composition Wood incomplete gamma function was employed ($y=ab^xe^{-cx}$). Results showed a dramatic change in colostrum yield and composition from the first milking right after calving until the next milking occurred at 6-hour interval. Yield was very low in the first milking (0.9 kg) and increased rapidly with each milking, reaching 11.2 kg in the seventh day postpartum. In the first colostrum the concentrations of milk fat, protein and total solids were high (11.56%, 17.73% and 32.08%, respectively) and were almost half in the second milking, after 6 hours. Lactose concentration was low at the beginning (1.89%) and increased slowly until the seventh day postpartum to 4.39%. Density was as high as 1.74 kg/liter in the first colostrum and decreased rapidly at 1.49 kg/liter. In the seventh day the density was 1.029 kg/liter. Immunoglobulin content had an atypical evolution. It was low in the first colostrum (34.48 mg/ml) and the highest in the second milking (43.66 mg/ml). After that it was decreasing until the end of experiment. Somatic cell count and total bacteria count were high in the first milking (1,575,488 cells/ml and 46,834 cfu/ml, respectively) and decreased after that.

Key words: colostrum, transition milk, chemical composition, somatic cell count, total bacteria count, immunoglobulin, Romanian Black and White, cow

CHEMICAL COMPOSITION AND SOMATIC CELL EVOLUTION DURING LACTATION IN ROMANIAN BLACK AND WHITE COWS

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The aim of the paper was to study the evolution of the chemical composition and somatic cell count during lactation in Romanian Black and White cows and effect of calving season on the shape of the lactation curve. Lactations from 125 multiparous cows were studied. Milk yield and sampling were carried out using the official performance control method A4. Milk was analyzed for composition in infrared spectrometry and for SCC using a viscosimeter. Results were modeled using Wood's incomplete gamma function $y=ab^xe^{(-cx)}$, and season effect was assessed using ANOVA/MANOVA. A discussion was carried out regarding the shape of the lactation curves for milk yield, each milk component and SCC. The calving season had a significant effect ($p<0.005$) on the shape of the lactation curve for milk yield, milk chemical composition and milk somatic cell count. Summer calving cows had flatter lactation curves for milk yield and composition compared to winter calving cows. For somatic cell count spring calving cows had the flattest lactation curve while autumn calving cows has the steepest lactation curve.

Key words: lactation curve, milk yield, chemical composition, somatic cell count, calving season, cows, Romanian Black and White

STUDY ON THE RESTING BEHAVIOR IN ROMANIAN BLACK AND WHITE PRIMIPAROUS COWS

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The study was carried out on 3 Romanian Black and White cows in their first one hundred days of lactation. The aim of this study was to measure the main aspects that characterized the resting behavior of the cows in 24 hours that were divided into 3 day periods: 07:00-14:00, 14:00-21:00, 21:00-07:00. During the experiments, the following resting behavior aspects were determined: number of periods standing, number of periods lying, the length of the periods. Data was computed by ANOVA/MANOVA. Results showed that the cows spent on average 81.83 minutes standing and 25.33 minutes lying in 07:00-14:00 day period, 80.66 minutes standing and 66.33 minutes lying in 14:00-21:00 day period and 47.83 minutes standing and 137.66 minutes lying in 21:00-07:00 interval. The cows spent on average 75.77% standing and 24.23% lying from a first interval length, 55.49% standing and 44.51% lying from a 14:00-21:00 day period and 26.16% standing and 73.84% lying from a 21:00-07:00 interval.

Key words: resting behavior, cows, Romanian Black and White Cows

THE MICROPHILOGENY OF THE RACES INVOLVED IN THE FORMING OF MOLDAVIAN TYPE OF BLACK AND WHITE CATTLE

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It was studied and compared the antigens' frequency of blood groups in the reproductive horned Black and White cattle (n=542) and other five types of horned cattle: Steppe Red (n=54), Red Estonian (n=330), Simmental (n=34), Jersey (n=56), Ukrainian Grey (n=97), who were (directly or indirectly) involved in creation of horned Moldavian Black and White cattle. In tests 48-62 serums from 9-12 loci of sanguinary groups were used. It was calculated the genetic distance between the races and made up a dendrogram. The smallest genetic distance (0.1513) was obtained between the races Steppe Red and Red Estonian. The genetic distances between the improved race Black and White and races Steppe Red and Simmental was 0.1559 – 0.1708.

Key words: race, cattle, antigen, genetic distance, frequency, genetic resemblance, phylo-genetic analysis

RESEARCHES REGARDING CONSUMPTION SPEED OF FORAGES IN MULTIPAROUS ROMANIAN BLACK AND WHITE COWS DURING COLD SEASON.

1. ADMINISTRATION OF RATION IN TWO PORTIONS

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The aim of this research was to describe some aspects regarding the intake behavior, during cold-season in Romanian Black and White cows. Researches were carried out on 10 multiparous cows (in their first 100 days of lactation), housed in a tied stanchion barn 24 hours per day. During current study the consumption speed for varied forages type, specific during cold season (corn silage, pasture hay, concentrates and brewer's yeast) was pursued. Forages were offered in two equal portions each day. Portions were provided to cows in different orders, corn silage – pasture hay (variant A) or pasture hay – corn silage (variant B). Intake rate (consumption speed) was calculated in minutes per kilograms of raw feed. Average consumption speed values were calculated as follows: concentrates 3.32 min/kg, pasture hay 22.27 min/kg, corn silage 4.41 min/kg and brewer's yeast an average of 2.10 min/kg.

Key words: consumption speed, multiparous cows, Romanian Black and White

RESEARCHES REGARDING CONSUMPTION SPEED OF FORAGES IN MULTIPAROUS ROMANIAN BLACK AND WHITE COWS DURING COLD SEASON.

2. ADMINISTRATION OF RATION IN THREE PORTIONS

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Two experiments were conducted to examine the effect that the order of administering forages into the portion has on the consumption speed of the forages. Experiments A (order corn silage-pasture hay) and B (order pasture hay-corn silage) involved 10 multiparous Romanian Black and White cows. Cows were in their first 100 days of lactation and were housed in a tied stanchion barn 24 hours per day. Ration offered comprised corn silage (20 kg), pasture hay (8 kg), concentrates (3 kg) and brewer's yeast (2 kg). Cows were fed three times per day, at 7:00, 13:00 and 19:00. Consumption speed was calculated in minutes per kilograms of raw feed. Average consumption speed values were calculated as follows: concentrates 3.04 min/kg, pasture hay 25.45 min/kg, corn silage 4.96 min/kg and brewer's yeast 2.34 min/kg.

Key words: intake rate, forages, portion, Romanian Black and White, cows

EXTREME METEOROLOGICAL CONDITIONS AND METABOLIC PROFILE IN HIGH YIELDING HOLSTEIN-FRIESIAN DAIRY COWS

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The impact of two years (2002 and 2003) with different summer temperature extremes on variation in metabolic profile was analyzed in blood and urine samples taken from healthy, primiparous (n = 371) and multiparous (n = 795) high yielding Holstein-Friesian dairy cows. In this study main focus was lead on three most critical physiological phases, thus cows were assigned into three groups as follows: (1) dry cows for 10 days prior to calving; (2) cows 1-30 days after delivery, and (3) cows with more than 31 days post partum. Findings reveal clear response of the cows to heat in selected blood (hemoglobin, plasma acetoacetic-acid, FFA, AST, glucose, urea) and urine (pH, NABE and urea) parameters. In the majority of cows, glucose and hemoglobin level, one of the most significant blood parameters, indicated symptoms of insufficient energy supply. Further metabolic indicators differed more or less from reference values depending on actual condition. Due to heat load dry matter intake has been decreased even by 10-15 per cent in primiparous cows. They were expected to increase body weight and size and simultaneously produce attain at large milk yields. In doing so that cows would have require large amount of nutrients. Out of parameters such as hemoglobin, glucose, FFA, AST and blood-urea differed from the reference values in most cases; however, this phenomenon seemed to be present in almost every case for hemoglobin and glucose. The lack of energy caused by heat stress can be contributed to the decrease of dry matter intake which has been indicated by the urea levels and pH both in blood and urine prevailing unfavorable and insufficient feeding practice. The results reconfirm the need to reconsider both the actual feeding practice (e.g. to increase of nutrient content in rations, reduce the intake of soluble proteins in rumen, pay attention of crude fiber in Total Mixed Rations (TMR), NDF and ADF, avoid overfeeding of inorganic buffers, to control moisture content in TMR, increase of Na and K intake), and construction of cowsheds with ample airspace, good ventilation and cooling system by remodeling of existing dairy operations.

Key words: dairy cows, heat stress, energy balance, corrective actions in feeding practice and remodeling

THE PROJECTION OF A FARM SPECIALIZED IN FATTENING YOUNG ROMANIAN SPOTTED CATTLE WITH AN ANNUAL DELIVERY OF 310 TONS OF MEAT

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The aim of this project is to expose the fattening technology in continuous growing system of young cattle from Romanian Spotted breed, having as purpose the obtainment of average weight young cattle. The quantity of meat that has to be delivered annually is 310 tons at an average weight of delivery in live of 510 kg/head with the fattening period of 460 days which means we will annually deliver 608 heads of young cattle without losing anyone in the four phases of fattening. For this purpose the capacity of fattening must be 815 heads with an index of annual occupation of 95% and of 75% on the total period of fattening. The surface necessary for the fodder production is 250 ha.

Key words: fattening, young cattle, meat

NON-INVASIVE METHOD TO ESTIMATE THE SLAUGHTER VALUE OF CATTLE

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The aim of this series of experiments was to examine the opportunity of application of X-ray Computer Tomography (CT) in cattle production. Altogether 191 animals of different breeds and genders were used in the study. In Experiment 1, the tissue composition of cuts between 11-13th ribs (n=136), was determined by CT and correlated with tissue composition of intact half carcasses prior to dissection and tissue separation. Results indicate that tissue composition of rib samples determined by CT closely correlates with tissue composition results by dissection of whole carcasses. In Experiment 2, tissue composition of rib samples by CT (n=40) were compared to the results of EUROP carcass classification. CT analysis has higher predictive value in estimation of actual tissue composition of cattle carcasses than EUROP carcass classification. The results of Experiment 3 showed that calves with higher muscle tissue area at the age of 7 days determined by CT will also have more meat in carcass. On the other hand, the cross sectional area of longissimus muscle can be used as a useful reference scan for the evaluation of meat of carcass.

Key words: cattle, slaughter value, X-ray Computer Tomography

OPPORTUNITIES TO PRODUCE HEALTHIER BEEF

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In this study the opportunities for enhancing the beneficial fatty acid in beef was examined. The effect of diet (extensive vs. intensive diet, forage to concentrate ratio, feeding concentrates rich in n-3 fatty acids) and the breed (old: Hungarian Grey, dual purpose: Hungarian Simmental, dairy: Hungarian Holstein-Friesian) was investigated on the fatty acid composition of beef. Findings reveal that the extensive diet with linseed supplemented concentrate influenced the n-6/n-3 ratio and the CLA content of longissimus muscle more advantageous concerning human nutrition. The meat from Hungarian Grey (HG) contained more CLA and less n-6 fatty acids than that of Holstein-Friesian bulls. The different forage to concentrate ratio with/without linseed supplementation did not significantly affect the performance and slaughter traits in Hungarian Simmental (HS) young bulls. The wider forage to linseed concentrate ratio caused slightly higher dressing percentage, meat and fat proportion and lower bone in carcass. The effect of muscle type on chemical composition of muscles is more significant than that of the diet. SFA and MUFA were affected by muscle type, n-3 fatty acids and n-6/n-3 fatty acid ratio of the diet. The level of cis-9 trans-11 CLA (mg/100 g) was influenced by muscle type, but not by diet.

Key words: beef, fatty acids, linseed

RESEARCHES REGARDING COW-MILK'S QUALITY OBTAINED IN THREE FARMS FORM ALBA COUNTY

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In the selection process, along with the milk quantity obtained from an animal, an important part is the milk quality, which has a big influence in the recalculated milk quantity and also in its nutritive, energetic and biological value which the milk contains both as food and as feed. Hygienic milk must fulfill two quality indicators: total bacterial count (TBC) and somatic cell count (SCC) both referring to 1 ml of milk, extracted from the farmer's milk tank. To fulfill the sanitary and veterinary inspection and to be considered a high-quality merchandise TBC must be situated at the maximum limit of 100,000/ml and SCC must not rise above 400,000/ml. By evaluating the milk quality on the basis of determining total bacterial count and somatic cell count, there were obtained very good values of these two indicators. The total bacterial count (TBC) obtained in the 33 examined samples had values between 10x1000 cfu/ml and 930x1000 cfu/ml, and the somatic cell count has been situated between the values of 13000 cells/ml and 2184000 cells/ml.

Key words: milk, TBC, SCC

EFFECT OF HOLSTEIN-FRIESIAN HEIFERS' GROWTH AND DEVELOPMENT ON MILK PRODUCTION IN THE FIRST LACTATION

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The aim of this study was to evaluate growth and development of heifers from birth to 24 months of age and the effects on milk yield in first lactation. Body weight and height at withers of female calves (N=4167) were taken at monthly intervals. At 3 months of age the average height at withers of calves, live weight and wither index was 80.9 kg, 86.1 cm and 1.0, respectively. Figures taken at 6 months of age the height at withers, live weight and wither index increased by 17.6 cm, 92.3 kg and 1.7. Respective mean values at 9, 16 and 24 months of age were 250.0, 413.9 and 603.7 kg; 116.0, 128.5 and 139.7 cm; and 2.2, 3.2 and 4.3. The heifers with the ideal or lower ones at 3, 9 and 16 month of age produced higher milk yields in the first lactation milk yield by 200-500 kg as compared with the highest index category. Higher index values at 6 months of age resulted in increase of milk yields in the first the lactation. At 24 months of age first lactation milk yields were similar in all index-categories (8647.2, 8703.5 and 8717.5 kg, respectively). No variations neither in butterfat (3.6%) nor milk protein (3.1%) content were present within the index categories at any ages. In conclusion, findings reveal that the withers height index seems to be an appropriate tool in monitoring of growth and development of replacement heifers for taking corrective actions in feeding and breeding practice.

Key words: Holstein-Friesian, heifer, growth, milk yield, height at withers, body weight, withers height index

ADAPTABILITY, PERFORMANCE AND PRODUCTIVE LONGEVITY TO THE ELITE NUCLEUS OF BROWN BREED FROM RESEARCH AND DEVELOPMENT STATION FOR BOVINE RAISING ARAD

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Adaptability of Brown breed on the plain area it is possible in conditions that provide housing and nutrition technologies concordant with morpho-physiological necessity. Advance of productive level, over 7000 kg per lactation, in accomplish condition of six lactations average per productive period, is one definitive element regarding adaptation capacity. Accomplishment of some morphological and productive parameters in economic conditions comparable with Frisian breed is still one element authentic zoo-approbatory. The aim of this study was to evaluate the efficiency of adaptability and productive longevity of one nucleus of Brown breed from the Research and Development Station for Bovine Raising – Arad along of ten years on the plain area.

Key words: adaptability, longevity, Brown breed

PHENOTYPIC PARAMETERS OF MILK PRODUCTION IN DAIRY ROMANIAN BLACK SPOTTED BREED FROM PETREȘTI –ALBA FARM

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The aim of this study was to investigate the phenotypic parameters in 101 dairy cows belonging to Romanian Black Spotted breed, from Petrești-Alba farm. For milk, fat and protein yield, cows were milked twice a day for a complete lactation of at least 305 days, from 2005 to 2007. Dairy cattle are the main milk supplier, the world production being over 650,000,000 MT/year. This production provides 35% of the total animal protein for the human consumption. Milk composition is of extreme importance to the consumer from a nutritional point of view. In the herd of dairy Romanian Black Spotted breed, from Petrești-Alba, the average milk yield was 4600.32 ± 97.52 kg. The milk fat yield obtained per cow was 180.87 ± 3.81 kg, while protein yield was 155.61 ± 3.16 kg.

Key words: dairy cattle, milk, fat, protein, yield

PHENOTYPIC CORRELATIONS OF MILK PRODUCTION IN PRIMIPAROUS DAIRY ROMANIAN BLACK SPOTTED BREED FROM PESTREȘTI-ALBA FARM

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The aim of the study was to investigate the phenotypic correlations and the regression curve among the main phenotypic parameters of milk yield in a herd of 63 primiparous Romanian Black Spotted breed dairy cows from SC Dorin&Sanda SRL, Petrești-Alba farm. The phenotypic correlations for milk, fat and protein yields were estimated. A positive and very high correlation of +0.99 was registered between milk and fat yields. Between milk and protein yields the correlation was also high and positive, +0.99, with a very close value of the correlation between fat and protein yields, +0.98. Results obtained show that among the main parameters of milk yield there are very strong phenotypic correlations.

Key words: milk, milk fat, milk protein, yields, correlation

PHENOTYPIC CORRELATIONS AMONG COUPLE OF CHARACTERS IN DAIRY ROMANIAN BLACK SPOTTED BREED FROM PESTREȘTI-ALBA FARM

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Phenotypic correlations among milk yield, fat yield and protein yield were estimated using an animal model and records of 101 cows enrolled in the SC Dorin&Sanda SRL farm, Petrești-Alba. Among the productive traits investigated, the highest correlation was observed between the milk and fat yields 0.98. Between milk yield and protein yield coefficient correlation was 0.97, and also 0.97 between fat yield and protein yield. It was concluded that these phenotypic parameters could be used for the genetic evaluation of dairy cattle in Romania. Regression coefficients among the three couple of traits indicate the same high and positive values. The yield traits (kg) are all positively related.

Key words: milk, fat, protein, yield, correlations

ESTIMATION OF GENETIC ADDITIVE VARIANCE OF MILK PRODUCTION IN DAIRY ROMANIAN BLACK SPOTTED BREED FROM PESTREȘTI-ALBA FARM

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The objective of this study was to estimate the heritability of milk, milk fat and milk protein productions in Romanian Black Spotted breed cattle from SC Dorin&Sanda SRL private farm, Petrești-Alba. A total of 101 lactations cows were used to estimate heritability variabilites among milk yield (kilograms), fat and protein content. The data were collected over a period of two years (2006-2007). Heritabilities were 0.31, 0.68 and 0.73 for milk yield, fat content and protein content, respectively. Heritabilities were among the limits found in the literature. Data can be use as a guide for selection to improve milk yield while maintaining fat and protein contents.

Key words: heritability, dairy cow, milk, fat, protein

DYNAMIC OF SEXUAL HORMONS IN COWS, ANTE AND POST PARTUM

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The purpose of this paper was to study the hormones, estrogens (estradiol - E) and progesterone (P) levels modification during gestation and puerperal period, in Romanian Black and White dairy cows, with normal gestations and parturitions and to determine the postpartum start of cyclic ovarian activity and heat manifestation. The hormonal profile, dosing the estrogens and progesterone from sanguine serum was determined using the Estrogen and Progesterone Test Kit. The analyses were done weekly, in the last 2 month of gestation and 1 month after parturition.

Key words: cows, estrogens, progesterone, gestation, puerperal period

MANAGEMENT INFLUENCE ON MASTITIS IN DAIRY COWS

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An analyze of the teats of cows from four farms with milking parlor was carried out to see the environment impact on mastitis The major causes of the mastitis were the low preoccupation for the maintenance of the normal function of the milking machine, the lack to keep the waiting time in a standing position, after the milking, the lack of instruction of the milking personnel.

Key words: mastitis, management, dairy cows

RESEARCHES ON GROOMING BEHAVIOR OF THE DAM-CALF COUPLE DURING THE FIRST WEEK AFTER CALVING

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This paper is dealing with the maternal behavior during the first week after calving. Researches were carried out during the winter season on Romanian Black and White breed dam-calf couples. The behavior of calves and their mothers was nonstop video recorded during the first, second and seventh day after calving. For a better interpretation the recorded material was divided in three periods for every 24 hours of surveillance: 07:00 to 15:00, 15:00 to 23:00, and 23:00 to 07:00. Calves received attention from their mothers in 18 to 33 grooming periods during the first day after calving. The number of grooming periods decreased to 6 – 15 periods per day in the seventh day after calving. The total length of grooming periods also decreased from the first day to the seventh day after calving from 26.5 minutes to 7.4 minutes on each 8-hour time frame. There were also contacts between mother cows and their calves that were not followed by grooming (sniffing). The number of contacts without grooming was higher during the first two days after calving and decreased on the seventh day after calving. During the first week of life calves received, 55.6 minutes per day of care from their mothers, and there were, on average, 8.1 contacts without grooming between mothers and calves.

Key words: mother cows, newly born calves, grooming behavior, Romanian Black and White

STUDY ON FEEDING AND RUMINATION BEHAVIOR IN THREE MONTHS OF AGE ROMANIAN BLACK AND WHITE CALVES

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The aim of this paper was to measure the main aspects that characterize the feeding and rumination behavior of three months old calves. During the experiments, the following feeding and rumination behavior aspects were determined: number of feeding periods, the length of feeding periods, number of ruminating periods, and the length of rumination periods. Data was computed using ANOVA/MANOVA. Results showed that calves spent feeding, on average, 182 minutes in the morning, representing 38% of that time period, 118 minutes in the afternoon, respectively 25% of the 8-hour time frame and only 69 minutes during the night (14%). Calves ruminate, on average, more during the night (138 minutes) compared with morning and afternoon (104 and 107 minutes, respectively). The length of a rumination period was between 24 minutes in the morning and 30 minutes during the night. Calves ruminated, on average, 331 minutes in the first day of the experiment, respectively 23% of the day length and 367 minutes in the second day (25.5% of the day time).

Key words: calves, feeding behavior, rumination behavior, Romanian Black and White

GENETIC PARAMETERS OF MILKING TRAITS AND SCC IN MILK

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The aim of work was to determine genetic parameters for number of somatic cells (SCC) in the cow milk. Research took place on the sample of 247 cows of three different breeds. Genetic parameters were estimated by linear mixed model. It is found that heritability for SCC is 0.014 and genetic correlations with milking traits are small negative to small positive. Results show that decrease of SCC can be accomplished, by optimization of environmental factors, and selection for this characteristic must be done by sophisticated mathematic-statistical methods.

Key words: genetic parameters, milk, cows, somatic cells

THE EVOLUTION OF THE MAIN TRAITS OF THE MILK PRODUCTION BY CONTROLS AND DYNAMICS BY LACTATION

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The research was performed during 2002-2007, on 317 Romanian Spotted cows, from five private farms and one on ASAS ownership, located in two rearing areas from the central part of our country. By total effective, areas and farms, the dairy production from the control day was emphasized, by milking period and total, its content in fat, protein and lactose, respectively, by dynamics during four lactations, mentioning that the interesting indices were also detailed by four levels of the dairy production in first control. The results led to the first conclusion, according to such studies must be performed in any rearing farm or exploitation. Their evolution, in dynamics by controls, emphasized the efficiency of the adopted technology of exploitation and nominating of the chains that must be improved. According to the processing of the results, the indices that contribute to the simplifying of the diversified control of the dairy production were nominated, with the aim of pre-selection of the cows for C.O.P. network or the production level of those that are not included in above mentioned network, but can be used for the specific rearing aims and more suitable mating.

Key words: milk, technology, Romanian Spotted, dynamics

INDICI AI PRODUCTIEI CANTITATIVE SI CALITATIVE DE LAPTE IN FAZA MAXIMA A CURBEI DE LACTATIE

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The research was performed during 2002-2007, on 86 Romanian Spotted primiparous cows, structured function of the dairy production level and number of milking. The time interval when their maximum lactation was noticed, in three consecutive days, was considered for recording the main qualitative and quantitative traits. On 19 of those primiparous cows, structured by two production levels and milking intervals, the main morpho-functional traits of the udder and its suitability for the mechanic milking were studied. On five primiparous, during the same lactation interval, the same quantitative traits were studied in dynamics by 5 samples each, during two milking time interval, on 22 samples in morning milking, respectively. The results were calculated and statistically interpreted, and they are synthetically presented in 5 tables and 3 graphics. The main aspects resulted from our research emphasized some qualitative and quantitative traits, their evolution and effect of the production level and number of milking. We also emphasized the main milk components in evolution by milking and possibility of fractionate valuating of the trade milk by valuation destinations.

Key words: indices, quantitative and qualitative traits, Romanian Spotted, valuation

MEAT PERFORMANCE OF THE CZECH SPOTTED CATTLE BULLS BRED IN MOUNTAIN REGION

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Chosen indicators of meat performance of 98 bulls of Czech Spotted cattle bred in elevation above 720 m above sea-level in the mountain region of Šumava are presented in the article. The fattening was realized in a barn with a deep litter. The feed ration consisted of haylage throughout the year. The bulls were divided into three groups according to their genotype - C100, C75-85R (CxR) and C75-85A (CxA). The highest live weight at slaughter was achieved in the group C100 with 650 kg with the average age of 726 days and the weight of the carcasses of 363.8 kg. On the other hand, the worst results were achieved in the group CxA. For comparison a group of 14 bulls of the Holstein breed was created (H100), which was fattened in the same conditions. The bulls achieved their highest live weight before slaughter (664.6 kg), but at the highest age (743 days). Statistically significant differences were proven in the meat performance after individual fathers – the best results were documented with the offspring of the bull BO-837. After the separation of the set of bulls according to live weight at the end of fattening, the highest results were achieved by the group above 700 kg. The best class using the SEUROP method was achieved by the group with slaughtering live weight between 650 kg and 700 kg.

Key words: meat performance, SEUROP, LFA, Czech Spotted cattle

COMPARATIVE STUDIES REGARDING FORAGE INTAKE AT CHINCHILLA FUNCTION OF APPLIED BREEDING SYSTEM AND IT'S TECHNOLOGICAL INVOLVES

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The aim of this paper it is to help quantifying the forage consumption in Chinchilla farms function of breeding system. The two breeding systems adopted worldwide by the breeding farms, are on wire netting floor and bedded cages. All data's we found in literature about forage standards for this species, it's too old, (1981, 1982, 1986), and the new data's quoting the oldies, without making a laboriously experiment subject. In this order we consider oportune to bringing up them to date. In this way, at the wire netting floor system we pursue the roughage (grass-clover hay) and the complete mixed pelleted forage consumption, collecting the rests bellow the cages, separated them in parts, and calculate the difference. At the bedded system we weight the rests every day, ad the difference were considered the consumption. After drawing and processing data's we obtained a bigger pellet consumption at the adult animals kept on wire net floor with 48.66% comparing to the bedded cages system. In a case of youths the situation is exactly inverse, the weaned animals kept in bedded cages had bigger pellet consumption with 28.93% compared to the wire net floor system.

Key words: Chinchilla, comparative forage intake, breeding system, technology.

KINDLING EVOLUTION AT *CHINCHILLA* DURING A YEAR IN A MIDDLE SIZE BREEDING FARM

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The aim of this paper is to analyze the reproductive performances (fecundity, kindling) of the chinchilla's female. This time our research are focused to follow and interpreting the chinchillas kindling evolution during a year in a middle size farm, and to see the natural grouping of giving birth versus other data's from the literature. After processing the recorded data's we obtained a grouping kindling in March-May 57 cases representing 38% from total parturitions/year and in July-September with 46 births representing 31,08 % from the total parturition /year. Some same results had obtained LANSZKI (1999).

Key words: *Chinchilla*, kindling evolution, *Chinchilla* breeding.

THE COMPARATIVE STUDY OF REPRODUCTION PARAMETERS FOR *CHINCHILLA LANIGER*

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The study was made in 2007 on 500 females of Chinchilla, kept in individual cages, with a passage for the male. The next parameters were established based on reproduction results: prolificity index (PI), sex ratio, offspring survival index (OSI), female usage index (FUI). Based on these parameters, the fertility index has been calculated, during two births. For the first birth, the fertility index was 4.22 offsprings/female, for the second birth, it was 3.65 offsprings/female.

Key words: *chinchilla*, reproduction parameters, fertility index

COMPARATIVE RESEARCHES REGARDING THE BODY WEIGHT IN DIFERENT AGES OF NEW ZEALAND WHITE, GRAND *CHINCHILLA* RABBIT BREEDS, AND THE F1 HIBRIDS OBTAINED AFTER THEIR CROSS-BREEDING

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In rabbits breeding, the amelioration processes have a high importance because they are aimed to continuously increase the productions concomitantly with the decrease of specific consumption and unit costs. Cross-breeding of two genetically distinguished breeds can produce the heterozis effect, meaning an increase of the possibility that allow a higher productivity. 53 young rabbits were used as biological material, 3 interlinear simple female hybrids of New Zealand White (NZ) being the maternal line and 3 interlinear simple male hybrids of Grand Chinchilla (CH) form the paternal line. The 53 young rabbits were raised in identical environmental conditions so that their genetic potential to determinate the phenotypical expression. The rabbits weighing was done daily, at the same time, in equal foraging and drinking conditions. The rabbits were weaned at 30 days old, and until 80 days old were raised for meat. The two breeds used in the cross-breeding chart, respectively New Zealand White as maternal line and Grand Chinchilla as paternal line, have a good combinative characteristic, and on their hybrids is manifested the heterozis effect. In all the experimental, the hybrids from NZ x CH cross-breeding registered a corporal dynamic higher then the parental breeds.

Key word: New Zealand White, Grand Chinchilla, rabbits hybrids, body weight, hybridation

COMPARATIVE RESEARCH REGARDING METABOLIC PROFILE OF THE CALIFORNIAN, NEW ZEALAND WHITE, GRAND CHINCHILLA MEAT RABBIT BREEDS AND THE F1 NZCH HYBRIDS

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Precious biological characteristics of rabbits make their breeding a very profitable occupation. The rabbit meat, organoleptically same to the white meat, is rich in proteins, but low in fats. Biological researched done in direction to elucidate the biochemical systems that are the basis for organism physiological processes, have revealed that the level in which this process are develop directly influence the rabbits productivity capacity. 60 rabbit's heads was used as biological material, distributed in: 15 Californian, 15 New Zealand White, 15 Grand Chinchilla and 15 F1NZCH hybrids obtained from cross-breeding the New Zealand White as maternal form and Grand Chinchilla as paternal form. Blood was sampled from the rabbit and was biochemical analyzed. The studied indices were: total protein, albumin, urea, uric acid, creatinine, total bilirubine, cholesterol, triglyceride and glucose. The experimental lot formed from F1 NZCH hybrids registered a concentration of 2.1 mg/dl uric acid, and in the other three lots the concentration was under 2 mg/dl. In all four lots, uric acid value was in normal limits. The determined creatinine registered very low values, under 1 mg/dl, at the low limit of reference values. At hybrids from New Zealand White as maternal form and Grand Chinchilla as paternal form, in equal environmental conditions, the serum biochemical analysis haven't registered significant differences compared to pure breeds individuals.

Key words: Californian, New Zealand White, Grand Chinchilla, hybrids, blood chemistry, serum

AMPLITUDE, TRAJECTORY AND AFFERENT PARAMETERS ANALYSIS OF THE JUMP OVER A VERTICAL FENCE IN SPORT HORSES

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There are a lot of obstacles type used in jumping competitions. Normally, for every kind of fence, there is a different type of approaching and cross over. The most used obstacles are the vertical fence and the oxer fence. For crossing over the vertical, which is a high fence, the horse must jump only in report to the height of the bar. In the oxer case, which is a large obstacle, the horse must jump related to the height and the largeness of it indeed. In the present study we obtained for the vertical fence, situated at five different levels. The purpose was to measure four parameters for every jump: the taking-off distance, the landing distance, and the distance between bar and legs for the front limbs and for the hind limbs. Based on these, were calculated in report to the type of the show arena the amplitude of the jumps, was assign the trajectory curve and placed the balance point.

Key words: sport horse, jumping parameters, vertical fence.

SOME BIOCHEMICAL BLOOD CONSTANTS EVOLUTION IN REPORT TO THE TRAINING SCHEDULE STAGE IN SPORT HORSES

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To determine whether a clinical examination was adequate to assess the fitness of horses in a fence course riding, and to characterize the relationship between a clinical assessment of the horse's fitness, training schedule stage and its blood biochemistry, 22 horses were monitored before (S_1), during training, immediately after warming-up (S_2) and after an E level fence obstacle course ride (S_3). The blood samples were taken from the jugular vein in the above three mentioned phases, for the determination of total protein (g/dl), nitrogen (mg/dl), glucose (mg/dl), lactic acid (nmol/l), calcium (mg/dl), cholesterol (mg/dl) and phosphorus (mg/dl). The intend of the paper is to present the obtained results as a reference study for the appropriate use by clinicians, sport horses owners and trainers in view to have a solid base in evaluation, for the adequate protection of health and welfare of the jumper horses competitors.

Key words: training schedule, jumping, blood biochemistry.

NEWER ASPECTS IN THE AGE-DEPENDING ALTERATION OF HORSE TEETHING

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The authors give a short orientation about the age related parameters of incisors based on the literature. They tell about their own investigation of two conventional (cup depth and its yearly abrasion) and of two first applied (relative abrasion and area of dental table) parameters. The previous literature evaluated the parameters in question in two different ways: time period or frequency analysis. The authors introduced a new method: the linearly-corrected row data which is processed by analysis of variance. Their elaboration reaches altogether 107 individuals, three horse types (English Thoroughbred, English Half-breed and pony), and two genders (mare, stallion + gelding).

The cup depth at the levelling is the shallowest in the ponies (2 mm), while it is deeper in the Half-breeds (5 mm) and in the Thoroughbreds (4.4 mm). This deviation can be explained by body size differences between breeds. The degree of the absolute and the relative abrasion of the cup can be associated with the early utilisation (racing) and with the intensive feeding (concentrate). The area of the dental table is the largest in the pony, and the smallest in the Thoroughbred. The reason for the slowest abrasion observed in the ponies can be explained not only by the more traditional feeding but also by the bigger occlusive surface. The authors assume that the selection for the early utilisation of the English Thoroughbred resulted in an automatic change of the well inherited chronology of dentition; more early matured animals producing, in relation to the chronology of dentition.

In this breed the general refinement of the whole organism, but especially of the bone system manifests in the narrowing of the teeth also.

Keywords: cup depth, dental table, English Thoroughbred, Pony breeds, early maturity

STUDY OF WITHERS HEIGHT AVERAGE PERFORMANCES IN HUCUL HORSE BREED –GORAL BLOODLINE

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Study of average performances in a population have a huge importance because, regarding a population, the average of phenotypic value is equal with average of genotypic value. So, the studies of the average value of characters offer us an idea about the population genetic level. The biological material is represented by 87 hucul horse from Goral bloodline divided in 5 stallion families (tab. 1) analyzed at 18, 30 and 42 months old, owned by Lucina hucul stood farm. The average performances for withers height are presented in tab. 2. We can observe here that the average performances of the character are between characteristic limits of the breed. Both sexes have a small grade of variability with a decreasing tendency in the same time with ageing. We can observe a normal evolution in time for growth process with significant differences only at age of 42 months. We can say in this condition that the average performances for withers height have different values, influenced by the age, with a decreasing tendency.

Key words: hucul, Goral, bloodline, height

STUDY OF WITHERS HEIGHT AVERAGE PERFORMANCES IN HUCUL HORSE BREED – HROBY BLOODLINE

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Study of average performances in a population have a huge importance because, regarding a population, the average of phenotypic value is equal with average of genotypic value. So, the studies of the average value of characters offer us an idea about the population genetic level. The biological material is represented by 177 hucul horse from Hroby bloodline divided in 6 stallion families (tab. 1) analyzed at 18, 30 and 42 months old, owned by Lucina hucul stood farm. The average performances for withers height are presented in tab. 2. We can observe here that the average performances of the character are between characteristic limits of the breed. Both sexes have a small grade of variability with a decreasing tendency in the same time with ageing. We can observe a normal evolution in time for growth process with significant differences only at age of 42 months. We can say in this condition that the average performances for withers height have different values, influenced by the age, with a decreasing tendency.

Key words: hucul, Hroby, bloodline, height

THE REFORMING EFFECT ON ARDENNES TYPE HEAVY STEEDS, ON LOCAL HORSES POPULATION FROM TIMISOARA AREA

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The study “the reforming effect of the Ardennes type heavy steeds, on local horse population from Timisoara area”, presents importance from two points of view: is a precise radiography on the number of horses raised in Timisoara area, and in the second place, this study, shows the requests and the option of the animal breeders from the respective area both the reforming level of this ones. The research made in this study shows horse breeders from Timisoara area what they have to do in the future from the horse reforming point of view.

Key words: ardennes steeds, horses population

MORPHOLOGICAL FEATURES IN NATIVE SUINAE BRED IN POPULATION FARMSTEDS, ON CLUJ COUNTY INCIDENCE

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This work paper tries to offer some present data bound with the morphological status of Bazna breed suina female biological material bred and maintained in the population farmsteads on Cluj County incidence as concerns some aspects of body sizes, before promoting for reproduction. Therefore, using the techniques of a votive biometric examination, we analyzed a number of 54 young sows. The obtained results were statistically processed, and the formulated conclusions can be succinct recommendations for suina breeders, in general also for those ones that bred the Bazna breed, especially in purpose to promote the interest for native suina genofond preservation, in pure breed.

Key words: Bazna breed, biometric examination, reproduction, population farmsteads

BioR PREPARATION EFFECTS ON PRODUCTIVE INDEXES OF SUINA YOUTH

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*The problem of using biologically active substances in domestic animal feeding is one of the main problems of the world researches. Our investigations studied the influence of BioR preparation on suina youth performances. BioR preparation is a biologically active one obtained using original technologies of oriented synthesis, successive extraction, division and purification of bioactive principles from cyanophit alga biomass *Spirulina platensis*. This preparation contains biologically active substances as amino acids and oligopeptides, intermediary products of the glucide and lipid metabolisms, macro and microelements. The results of the investigations proved that the administration of BioR preparation had a positive influence on productive indices of suina namely: the body weight increased by 0.5-10.4%, daily body weight increased by 2.8-16.0%, but the specific consumption decreased by 18.3-23.0%.*

Key words: BioR preparation, biologically active substance, suina youth, nutrition recipes.

THE INFLUENCE OF SEXUAL USE OF THE PIGS MALES ON THEIR SPERMOPRODUCTIONS

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The pigs rearing depends of the level of hold selection work and of the reproduction as wile it depends of the artificial insemination. The efficiency of artificial insemination depends of the reproductions' quality. The large number of the boars which have to be used in the reproduction process do not correspond to the enquirements because their low sperm quality. One of the most important cause of the boars is their wrong rearing, their late testing. The aim of the experiments was to elaborate the optimal methods of growing using, and effective methods of boars testing grown for the reproduction of the Moldovenesc meat type breed. The held experiments allow to develop the growing technology and boars using in industrial farm what include: the young boars males selection at the age of 3 month, the free feeding, their maintenance, in the groups by 4 – 6 piglets until six month age, and beginning with five month age the young boars males are trained for the sperm collecting.

Key words: boar, sow, breed, semen material, mobility, concentration, volume.

THE ESTABLISHMENT OF THE SELECTION OBJECTIVE IN A PIG POPULATION

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The goal of this paper is to optimization the selection objective in a paternal pig line. Therefore, we simulated six types of indexes, which differ among them on the number of traits. There were analysed the following traits: (1) body weight at 182 month age (BW), (2) meat percent in empty body (MPB); (3) average daily gain between 0-182 month age and (ADG); (4) average daily gain on empty body (ADGB). MPB trait was included in each objective (index). The six indexes were: (1) MPB+BW; (2) MPB+ADG; (3) MPB+ADGB; (4) MPB+BW+ADG; (5) MPB+BW+ASDGB, and (6) MPB+BW+ADG+ADGB. The genetic parameters were computed using REML method. The biologic importance of the traits were estimated on linear multiple regression. For establishing of the best combination of the traits witch maximize the expected genetic progress, some parameters were used, that is: the accuracy of selection, overall genetic progress (ΔH) and the genetic progress for each trait (ΔG_i). The best index was the last, which included all traits. Its parameters were: 1,087 (r_{HI}); 2,144 (ΔH) and 3,35% (ΔG for MPB).

RESEARCHES REGARDING PIGLET THERMOREGULATION

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The aim of the research was to record body thermoregulation in piglet function of glycaemia, quantified by body weight at weaning. In order to a quick body thermoregulation of piglets after parturition Mistral and Mistral + Dexamethasone products were used. After their use a quicker dry is recorded in piglets (1 – 2 minutes), a slighter decrease in the body temperature, a smaller energy consumption, needed in thermoregulation, correlated to a higher glycaemia and stronger outlets, capable of colostrum consumption, and as a result, higher body mass at weaning.

Key words: glycaemia, metabolic, parturition, thermoregulation

THE EFFECT OF THE ZEOLITES USED IN FEEDING OF WEANED PIGS ON THE MAIN BIOPRODUCTIV INDICATORS

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The experiment was carried out over a group of 34 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, 6.3%, greater feed intake, 0.7%, and a smaller feed conversion rate of 6.2% versus group (C).

Key words: weaned piglets, zeolites, microelements

ESTABLISH THE GENETIC STRUCTURE IN A SWINE PATTERN LINE FOR OBJECTIVE SELECTION OPTIMIZATION

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The first phase in objective selection optimization is established of population genetic structure. The genetic parameters is very important in animal breeding because, according to those values, is establish the breeding system, selection objective and selection method.

Key words: swine, selection, pattern line, genetic parameters

SELECTION OBJECTIV OPTIMIZATION IN A SWINE PATTERN LINE

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The selection objective is to obtain maximum of genetic gain, with minimum effort, spend and time. So, the selection objective must be optimized by establish a more possible objectives which can start a competition. It will be maintain this who maximize the annual genetic gain per spend and time units.

Key words: swine, selection, pattern line

SOWS FERTILITY AFTER TRANSCERVICAL INTRAUTERINE INSEMINATION (THE SUMARIZE OF OURS RESULTS)

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We have investigated the potential advantages of transcervical artificial insemination into the caudal portion of the uterus (corpus uteri), compared with conventional sperm-dose deposition into the posterior region of the cervix. Three experiments was carried out to investigate: (1) the influence of insemination-dose volume, (2) sperm number per dose and (3) type of insemination catheter on sows fertility (farrowing rate and litter size). Classic intracervical insemination was performed in the total of 50 sows (25 inseminated with 100ml doses and 25 with 50ml doses). Intrauterine insemination was performed in the total of 50 sows (25 inseminated with 100ml doses and 25 with 50ml doses). Significant greater farrowing rate (88%) and live born piglet per litter (10,77 or 11,86) was found after intrauterine insemination, then after intracervical insemination (76 or 72% farrowing rate, and 10,42 or 9,89 live born piglets per litter). Classic intracervical insemination was performed in the total of 90 sows, with different catheter type. Intrauterine insemination was performed in the total of 90 sows, with 5×10^9 , $3,7 \times 10^9$ or $2,5 \times 10^9$ spermatozoa per dose. No significant differences in farrowing rate was found between intracervical and intrauterine insemination (83,3 to 86,7%). Significant greater live born piglet per litter was found after intrauterine insemination with $2,5 \times 10^9$ spermatozoa per dose. Obtained results suggest that intrauterine insemination can be performed by significant reduction of insemination dose volume and sperm number in dose, without decreasing sows fertility. It can result in significant increasing of boar reproductive efficiency.

Key words: intrauterine insemination, ferility, sow.

EFFECT OF PERIHARVEST HANDLING ON WELFARE STATUS OF SLAUGHTER PIGS AND INTRINSIC PORK QUALITY. REVIEW OF RECENT FINDINGS

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There is a growing concern of consumers that the meat producing animals are bred, reared, handled and slaughtered in ways that are sympathetic to their welfare status. Good animal welfare is generally considered as a primary requirement and EU and national legislation is in force throughout the total production chain and everyday practice is above the minimum threshold level required. The relative importance of stress during animal production and in the immediate pre-slaughter period as a major determinant of ultimate meat quality has long been recognized. Good welfare may result in better product quality is a powerful additional commercial incentive to improve the way we rear, handle and slaughter animals. In the ante mortem period, good welfare usually results from careful handling of animals that reduces stress and trauma. In contrast, poor ante mortem handling leads to stress and results in poorer meat quality. Critical points within the pre-slaughter period are (a) loading, (b) transport, (c) lairage, (d) stunning

Key words: fattening pigs, periharvest handling, loading, transport, lairage, stunning, meat quality.

FARROWING SYNCHRONIZATION AND INDUCTION OF THE GILTS WITH PROSTAGLANDINES

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The researches were made to induce and synchronize the farrowing during the working schedule. In the trial we have been testing two hormonal products Estrumate and Prosolvin to two groups of gilts, in the 113th day of gestation. After the administration of the prostaglandin synthetic analogs we follow up the time when the gilts were farrowing, the prolificacy and the parturition loss. The percent of gilts that were farrowing during the working schedule was 48.84 at the group with Estrumate and 50.00 at the group with Prosolvin (difference non significant, χ^2 test, $p>0.05$). The percent of gilts that were farrowing after the working schedule 32.56 at the group with Estrumate and 16.67 at the group with Prosolvin (difference non significant, χ^2 test, $p>0.05$). The prolificacy was bigger for the group that were farrowing during the working schedule (10.57 ± 0.60 pigs/gilt for the group with Estrumate and 11.43 ± 0.12 pigs/gilt for the group with Prosolvin) comparing with the gilts that were not farrowing during the working schedule (10.21 ± 0.79 for the group with Estrumate and 10.75 ± 0.24 pigs/gilt for the group with Prosolvin) and significant (t test $p<0.05$). The parturition loss was smaller at the gilts that were farrowing during working schedule (0.67 pigs/gilt for the group with Estrumate and 0.58 pigs/gilt for the group with Prosolvin) comparing to those that were farrowing after the working schedule (1.43 pigs/gilt for the group with Estrumate and 1.20 pigs/gilt for the group with Prosolvin), but not significant statistically (t test $p>0.05$)

Key words: gilt, farrowing induction, synchronization, Estrumate, Prosolvin.

EFFECT OF HOUSING SYSTEM, AGE AND HYBRID TYPE ON THE WELFARE OF LAYING HENS

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Housing system has a significant effect on the welfare of laying hens, and one of the factors for estimating the welfare is the condition of feathers. The aim of this work was to evaluate this parameter in different housing systems and between two strains (white and brown layers) at the beginning and ending of the production cycle. Feathers were evaluated by scoring system. Obtained results showed that type of the cage as well as the type of hybrid, have significant influence on feather.

Key words: laying hens, cages, hybrid, welfare

PROPOSALS FOR OPTIMISATION THE GENETIC IMPROVEMENT ACTIVITIES IN THE PHASIANUS COLCHICUS COLCHICUS POPULATION FROM PIȘCHIA PHEASANT PRESERVE, FORESTRY DISTRICT TIMIȘOARA

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Romania adhesion and integration into the European Union offers opportunities for production and export of a significant number of pheasants for game. Pheasant meat is very tender and succulent with a pleasant flavor. The aim the paper was to try to make efficient the genetic improvement actions of the Phasianus Colchicus Colchicus stock from the Pișchia pheasant preserve, Timiș County. The study was carried out on a total of 11550 common game pheasants belonging to the Forestry District Timișoara. Based on analysis carried out, this paper is finalizing with a number of conclusions and recommendations.

Key words: genetic improvement, pheasant preserve, Phasianus Colchicus Colchicus

MONITORING OF NATIONAL GEESSE BREEDS POPULATION ON SLOVAKIA

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The aim of this study was to characterise the population size, the properties of endangered national breeds of geese on area of Slovakia and preconditions of these breeds for their future sustainable development in Slovak Republic. The Slovak White Geese was breeding from original regional geese from South-Western Slovakia area with used by heavy and medially heavy German and Hungarian breeds of geese. A breeding basis of the Suchovska geese was comprised of brownish-yellow geese from Suchá nad Parnou that was progressively crossbreed with German (Pomorany, Steinbach) and French origin geese breeds (Toulouse, Landes). Obtained results were used to estimate a genetic diversity and define a genetic distance between Slovak White Geese and Suchovska Geese. We can conclude that value of genetic distance between Slovak White Geese and Suchovska Geese is 0.01834, genetic diversity is very small and we can expect communal origin of these geese breeds. The risk factor of national geese breeds is a low number of Slovak White Geese and Suchovska Geese controlled flocks and this created more pressure on the breeders and poultry judges at the exhibitions and the recognition of controlled flocks.

Key words: Slovak White Geese, Suchovska Geese, controlled flock, breeding, Slovakia

EFFECTS OF PHOTOSTIMULATION ON SEMEN PRODUCTION IN RHODE ISLAND ROOSTERS

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In mammals the length of daylight has an oscillatory influence on semen production. It is known that in mammalian males highest semen output occurs mainly in spring and fall. It is possible that there is the same pattern in rooster semen production despite the anatomic differences regarding the testis location and, obviously local temperature. Considering these facts the present trial was set up in order to reveal effects of prolonged daylight – photo stimulation – on semen production in young roosters. All young roosters in the trial were divided in 3 groups, according to the age when photo stimulating schedule started. Photo stimulation was performed by moving young roosters from an 8h/day light to 14h / day light. Attempts of collecting semen up to the age of 20 weeks have failed showing relationship between body general development and semen output. Under prolonged light semen parameters as volume, motility and concentration changed from one week to the other. However, light is not the single factor inducing sexual maturity of the genital tract, but it could be used in young roosters in order to stimulate feed intake and thus overall body growth and development.

Key words: roosters, photo stimulation, reproduction, precocity

GENETIC PARAMETERS STUDIED IN LEGHORN LINE 004C

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The purpose of the study was to determine the genetic parameters because they vary from one line to another and from one generation to the next, to enable us observe the genetic basis of selection in the surveyed line. The following genetic parameters were studied: heritability (0.0147 for the age at the first egg), egg production ($h^2 = 0.067$); egg weight at 26 de weeks ($h^2 = 0.17$ and at 34 weeks ($h^2 = 0.137$). The estimated value for the body weigh heritability was 0.302; the production index had a heritability of 0.128. The genetic correlations of the surveyed traits ranged between -0.5116 for the trait pair egg production and body weight at 34 weeks; 0.8992 for the trait pair egg weight at 26 weeks and at 34 weeks. The phenotypic correlations ranged between -0.3451 and 0.7272 for the trait pairs: body weight and production indicator; egg production and production indicator. The environmental correlations had a minimum value of -0.3121 for the trait pair body weight and production indicator; the maximal value was observed for the trait pair egg production and production indicator. The knowledge of the phenotypic, genetic and environmental correlations of the economically-important traits was required by the establishment of a correct selection basis for the simultaneous improvement for two or more traits. The surveyed parameters outline quantitatively and qualitatively the improvement of line 004C used for the production of Albo SL 2000 hybrid.

Key words: genetic parameters, heritability, genetic correlations, age at first egg, egg production, egg weight, body weight

BLOOD METABOLIC COMPONENTS AT TWO EGGS HYBRID HENS

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Starting with the hypothesis that there can't be obtained superior quantitative and qualitative productions from hens with an improper health condition, we present in this paper the biological material health condition, observing the physiological status after the analyses of some blood components. The analyzed biological material was represented by two eggs hybrid hens: Roso SL inland hybrid and Shaver 579 imported hybrid. There were organized two experimental lots, including 100 heads for each hybrid and we collected samples for laboratory analyses from a number of 34 individuals, randomly chosen. We made analyses for: blood glucose (mg/dl), Total lipids (mg/dl), Total proteins (g/dl), Erythrocytic volume (VEM), Erythrocytic haemoglobin (HEM), Haemoglobin concentration (CHEM). The obtained data after the laboratory analyses were statistical interpreted, with the establishment of medium values and dispersal indices for the analyzed parameters. The blood glucose values of 223.60 ± 7.07 mg/dl at Roso SL hybrid and of $244.00 \pm 1,88$ mg/dl at Shaver 579 hybrid, the values of total lipids, of 516.30 ± 18.67 mg/dl for Roso SL hybrid and 578.70 ± 21.13 mg/dl for Shaver 579 hybrid, the values of total proteins of 3.70 ± 0.17 g/dl at Roso SL hybrid and 3.42 ± 0.07 g/dl at Shaver 579 hybrid are situated in the normal limits. The medium values and dispersal indices for the studied traits are situated on the middle speciality literature values and indicate a good hen's health condition. The data obtained after the analyses are showing the fact that the two hybrids (Roso SL and Shaver 579) are appropriate for a good eggs production and for the maintaining of the egg period plateau for a long period of time.

Key words: blood metabolic components, hen hybrids.

EXTERIOR PHENOTYPICAL PERFORMANCE PARAMETERS AT ROSO SL EGGS HYBRID AT 45 WEEKS OF AGE

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The biological material which was studied has been represented by 34 ROSO SL hybrid that lay eggs, of 45 weeks of age. We have analyzed the 45 weeks age as a middle age for the intensity of egg laying on the level of over 80%. Measurements have been made for the following conformation traits: body weight, body length, former depth, former width, pelvis width, length of the breast-bone careen, thoracic perimeter, shin perimeter and length. The measurements have been made according to the methodology and the known speciality instruments. The observation data have been overworked, this way we have established the average values and the variability parameters for the traits we followed, which fit the values presented in the specialty literature and are even over these for the age group chosen for studies. The body weight of 2058.82 ± 38.49 g, superior to the one mentioned in the technological guide, confirms a proper unrolling of the body weight deposits and shows that the Roso SL hybrid will properly support both the body growth in weight and also egg production in parallel, respectively this double effort, fact that gives the hybrid a higher quality. Other registered values are of 18.06 ± 0.15 for the body length, of 10.85 ± 0.11 cm for the length of the breastbone careen, together with the sizes which maintain a proper egg production, such as the width of the pelvis of 9.75 ± 0.14 , the former width of 6.78 ± 0.10 cm and, why not, even the former depth of 10.72 ± 0.12 . We would also notice an appreciable uniformity of these values, the limits of the variation factor being between 4.66 (length of the shin) and 8.36 (former width). The values that the biological material represent for the characters we studied, convince us about the hybrid's availability for being exploited in the egg production.

Key words: eggs hybrids, phenotypical traits

GENETIC DETERMINISM OF THE REPRODUCTION TRAITS IN A PLYMOUTH ROCK LINE

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The heritability of the studied traits was below 0.2 in four traits (age at first egg, body weight, eggs produced during the control period, laying percentage during the control period); only egg weight having a higher heritability, 0.698. There are tight positive phenotypic, genotypic and environmental correlations between the egg number and the laying percentage and tight negative correlations between the age at first egg and the egg number and between the age at first egg and the laying percentage.

Keywords: genetic determinism, reproduction traits, layers

QUANTITATIVE AND QUALITATIVE FEATURES OF MEAT PRODUCTION IN COBB-500 CHICKEN HYBRID

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The paper reveals some partial results issued from a wide range of assessments regarding poultry meat production. Thus, certain data referring to the muscle mass yield and to muscular tissue quality at “Cobb-500” hybrids are presented within. Quantitative side of meat production was analyzed through several parameters (live and carcass weight, slaughtering efficiency and trenched parts participation in whole carcass formation) while the qualitative properties were linked to muscular fiber’s thickness and to their cross surface area. Broilers of 42 days old, belonging to both genders, have been studied, the values being revealed for males and females and meanly calculated for all flock. Thus, average value of fresh carcass weight reached 1761.79 ± 29.02 g at both genders, leading to a slaughter efficiency value of 78.94%. Breast fillet participation in whole carcass reached 22.32%, value situated closer to that specified by the hybrid producer (22.63%). It has been also noticed that rear limbs parts (thighs and shanks) participation in whole carcass was higher in females than in males. Five representative pairs of skeletal muscles have been sampled: Pectoralis profundis et superficialis, Biceps brachii, Semimembranosus et Gastrocnemius medialis and served as biological material to be analyzed using photonic microscopy. White muscles (pectorals) were found to have the highest values for the myocytes’ thickness (41.11μ), while the contractile cells of the red muscles were thinner (the thinnest within the brachial biceps – 27.9μ).

Key words: meat, broiler, slaughtering efficiency, breast fillet, texture

THE EFFECT OF ELECTROMAGNETIC FIELD USED IN THE GOSLINGS GROWING TECHNOLOGY

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There were held a lot of different studies with different tips of irradiation till now. For having positive results it is necessary to continue the studies with most important tips of irradiation. It was demonstrated the tendency of increasing the productive indices after using the electromagnetic field in goslings growing technology. The results showed that regime 4 with the activation 45' and regime 10 with the activation during 10' had a positive influence on the goslings maintenance, fixing the increasing of these index by 1.4 % and 3.2 %. The activation leads to the improvement of productive indices during all growing experimental period. The positive effect of activation by electromagnetic field on the maintenance level of goslings was received in exp. I group, where the percentage was 94.4 %, in the ex. II group these index was 93.1 %, comparing the results with the control group it is marked a difference corresponding with 4.5 % and 3.2 %. After the goslings slaughtering was established that the quality of muscle mass in experimental groups was higher than in control group, and this index in exp. I group achieved the average 3066.7 g but in control group it was 2766.7 or by 9.8 % lower. The received results have theoretical and practical importance for increasing maintenance, growing intensity of goslings and do not have negative influence on meat chemical composition.

Key words: goslings, growing technology, electromagnetic field, maintenance

THE INFLUENCE OF THE TECHNOLOGICAL COMFORT ON THE PRODUCTIVE AND REPRODUCTIVE INDICES OF THE QUAILS

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The experiments were held at the quail's farm „Annotation invest - agro” r. Hâncești. As a studied material there was used the Japanese breed of quails, kept in six leveled cages, each cage is divided horizontal in half, in that way that in each part there are 35 quails. For the aim achieving there were formed four groups: the first is the control group, and the other three are experimental groups. There was fixed one psychrometer for each group to determine the temperature and the humidity level. There was established the eggs production every day from each group separately. The eggs weight has been determined once in a month, using the electric scales. The egg's index and the egg's shell thickness have been determined by the sliding. The held experiments showed the real influence of the technological factors of the temperature and the humidity of the air on the productive and reproductive indices of the quails grown in conditions of Republic of Moldova.

Key words: quails, technological comfort, productive and reproductive indices.

ASPECTS REGARDING SOME MORPHOLOGICAL VALUES OF THE DOMESTIC QUAIL EGGS (COTURNIX COTURNIX JAPONICA)

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The domestic quail (Coturnix coturnix japonica) is the smallest bird subspecies that is breed in farms, for its meat and eggs production. Quail eggs are precious aliments and also have important drug value. It is a natural source of vitamins and mineral substances. However, in the speciality literature there is little information regarding the quality indexes (morphological, physical and chemical) of quail eggs. After measuring the egg shape index, the eggs volume, the specific egg weight and after also analysing the longitudinal and transversal diameter ratio we reached a series of conclusion: the average weight was of 10.44 ± 0.13 grams, the eggs volume was of $9.675 - 10.472 \text{ cm}^3$ and a specific weight of $0.996 \pm 0.01 \text{ g/cm}^3$. Likewise the dimensions of these eggs were: 32.34 mm – longitudinal diameter and 24.92 – 24.97 mm for transversal diameter; the egg shape index had a value of 1.30/1, respective of 77.04 %. The quail eggs have albumen (egg white) that represents 58.37 % from the egg total weight, a yolk that represents 33.37 % and a mineral shell that represents 8.28 %

Key words: morphological data, eggs, domestic quail, quail breeding

EFFECT OF PROBIOTIC PREPARATES WITH DIFFERENT STRAIN ON MEAT PRODUCTION OF BROILER DUCKS

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This study was conducted to investigate the effect of supplementation of the probiotic preparates with different probiotic strain on the meat production of broiler duck females. The experiment realised in half-operation conditions experimental base of Department of Poultry Science and Small Animal Husbandry of Slovak University of Agriculture in Nitra in three-floor cage technology. Totally 45 one day broiler duck females hybrid PKR divided into three groups: control group - without addition of probiotic prepareate, experimental group 1 - addition of probiotic prepareate Propoul with strain Lactobacillus fermentum in powder form at drinking water in dose 0.40 g daily during all experiment, experimental group 2 - addition of probiotic prepareate Protexin Concentrate with strain Enterococcus faecium in powder form at drinking water in dose 0.24 g daily during all experiment. The results from this study showed that supplementation of probiotic preparates Propoul and Protexin Concentrate in drinking water caused improvement of meat production of broiler ducks. Probiotic prepareate Propoul manifested as a prepareate with higher effect on meat production in comparison with probiotic Protexin Concentrate.

Key words: broiler duck, probiotic, *Lactobacillus fermentum*, *Enterococcus faecium*, meat production

ANTIPARASITICAL PROTECTION IN SHEEP FARMS

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*Through our researches were carried out at ICDCOC- Palas, Constantza, we proposed ourselves to establish the poly-parasitism structure on sheep, as well as elaborating efficient methods for anti-parasitical prophylaxis and fighting in sheep populations and pasture surfaces, in order to ensuring anti-parasitical protection in sheep exploitations. The copro-parasitological examinations was carried ovoscopically (flotation - by Willis and Mc. Master methods; sediment – by polyvalent method) and larvoscopically – by Baermann method). The parasitological examination of coprological smears which were harvested on sheep showed the presence of polyparasitism phenomenon with protozoans (coccidia: *Eimeria* spp.) and helminths (cestoda: *Moniesia expansa*; gastro-intestinal nematodes: *Trichostrongylus* spp., *Nematodirus* spp., *Strongyloides papillosus* and pulmonary nematodes: *Müellerius capillaris*, *Protostrongylus rufescens*, *Dictyocaulus filaria*). Also, we proposed ourselves to study the parasites and their intermediary stages on pastures which were exploited with sheep, comparatively with mowed pastures. In the ansamble of research activities a special place is occupied by testing different methods, in order to prevention and fighting of parasitical infestations on sheep and pasture in sheep farms.*

Key words: sheep, poly-parasitism, anti-parasitical protection, infesting strongyloide larvae

THE ANALYSIS OF CORRELATIONS BETWEEN THE MAIN TRAITS OF WOOL PRODUCTION ON PALAS SHEEP LINE FOR MEAT, MILK AND HIGH PROLIFICACY

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The aim of this paper was to analyze the coefficient of phenotypic correlation and regression between main wool production traits for the sheep belonging to the Palas line specialized for meat, milk and with high prolificacy. The study was performed on a 10 years interval, the phenotypic correlation and the regression being determined for age groups and body weight classes for the following traits: raw wool production, the staple length, wool diameter and body weight at shearing. The obtained results are showing that for the specialized sheep lines the efficiency of wool production is also higher for the sheep with moderate body weights but for these sheep lines the selection for body weight will be done based on the morpho-productive parameters specific to the purpose of exploitation (milk production, meat production or high prolificacy).

Keywords : wool production, wool diameter ,staple length, body weight at shearing, phenotypic correlation, regression

THE ASSESMENT OF MAIN CHARACTERISTICS AND PROCESSING AVAILABILITY OF WOOL OBTAINED FROM SHEEP BELONGING TO THE PALAS HIGH PROLIFICACY LINE

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The purpose of these researches was to analyze the quantitative and qualitative parameters of wool obtained from the Palas sheep population with high prolificacy and to assess the processing availabilities of these fibres type. Average values recorded for the main wool traits ranged between the following limits: wool production 2.86 ÷ 4.72 kilos; fibres fineness 27.28 ÷ 29.32 microns; variability of fineness (CV) 26.88 ÷ 29.94 %; staple length 9.77 ÷ 14.23 cm, variability of length (CV) 18.01 ÷ 22.06 % ; scouring yield 54.05 ÷ 61.44 % and the variability of yield 8.35 ÷ 14.78 % . This wool has a technological value similar to that obtained from the sheep breed with medium fineness wool (Tigaie, Spanca).

Key words: sheep with high prolificacy; wool production; wool fineness; staple length; yield

INFLUENCE OF THE PREGNANCY AT EARLY AGE ON THE REPRODUCTION AND PRODUCTION LIFE IN EWES OF THE BOTOSANI KARAKUL BREED

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The paper presents experimental results concerning the age importance of the first freshening of the ewes belonging to the Botosani Karakul breed. Some females were mated at an early age (8-9 months old) and others at the normal physiological age (16-18 months old). The influence of early pregnancy and of the one in due time on the production parameters (body weight, body growth and milk production and their evolution, bodily dimensions, lamb pelt features) and reproduction indicators (heat apparition rhythm, their manifestation rate, freshening number in order to the pregnancy be installed, fecundity, prolificacy) was yearly pursued next to 3.5-4 years old. The experimental results point out that the age of the first freshening in the Botosani Karakul sheep (early mating or mating at normal physiological age) does not influence or insignificantly influences the morpho-production parameters and reproduction indices of the adult animal. But, forwarding the reproduction activity of ewes with an year, a gain of lamb number and of milk production is obtained on the whole productive period of ewes, thus contributing to streamlining the economic situation of sheep farms specialized for the lamb pelt production.

Key words: reproduction, precocity, production, sheep

SIMPLIFIED ESTIMATION FORMULA OF THE MILK PRODUCTION IN SHEEP

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The paper proposes a simplified formula to estimate the milk production in sheep. The formula is based on using the polynomial of Hermite interpolation of 0 degree. The result constitutes a control value for the milk production parameter. This value is well correlated with the correctly calculated value by a polynomial interpolation of superior degree.

Key words: milk, milking curve, sheep.

ASSOCIATION OF SOME BIOCHEMICAL-GENETIC MARKERS WITH THE REPRODUCTION PARAMETERS OF THE BOTOSANI KARAKUL EWES

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The paper describes some associative aspects of various biochemical-genetic markers with the reproduction activity in ewes of the Botosani Karakul breed. The two most important reproduction parameters (fecundity and prolificacy) were analyzed according to the genotypes or phenotypes of polymorph systems (haemoglobin, transferrin, albumin and blood potassium) of females. The relationship between reproduction data and genetic markers in ewes was quantified both for each genotype (phenotype) and for each mating couple type made up depending on the genotype (phenotype) of the couple partners (homozygous x homozygous, homozygous x heterozygous or heterozygous x heterozygous). All these associative aspects and their results are discussed for each polymorph genetic system. The ewes which are heterozygous at different genetic marker loci are more fertile and more prolific than the ewes which are homozygous at the levels of these loci. The highest conception and lambing rates resulted from the mating couples in which both partners were heterozygous and the least lambs were obtained from the mating couples in which both partners were homozygous; the fertility and prolificacy had intermediate values in heterogeneous mating couples (heterozygotes x homozygotes) but they were nearer to the case in which both mating couple partners were heterozygous. The sheep breeding field can benefit by the contribution of biochemical-genetic markers to optimize the selection criteria with a view to increasing the reproduction capacity of this species.

Key words: genetic markers, reproduction, sheep

SEASONAL VARIATION OF TURCAN A SHEEP MILK CHEMICAL COMPOSITION

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Experiments were undertaken to evaluate the effect on milk chemical composition of feeding to Turcana sheep fresh forages, both in spring, summer and early autumn (April to September). Milk fat, protein and dry matter was affected by the season, the higher content was observed in August and September. The measured values in the this period was: 7,08±0,08% and 7,39±0,09%, protein 5,42±0,19% and 5,61±0,016%, dry matter: 19,39±0,17% and 20,73±0,92%. Evaluating these results we conclude that is possible to utilize late summer sheep milk to maximize the content of beneficial chemical compounds of dairy products.

Key words: sheep milk, fat, protein, dry matter, lactose.

THE PREVALENCE OF WORMY SINUSITIS IN GOATS FROM THE WEST SIDE OF OUR COUNTRY

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On the February-October period of year 2007 were been examined 84 sheep heads and 51 goats heads, from mixed flocks of private breeders from Timiș and Caraș-Severin districts. Sheep were from Țurcana breed, goats from White of Banat breed and both categories of animals were 2-7 years aged. The necropsy of heads aimed the Oestrus ovis larvae discovery, from all three stages of development, in nasal ways and sinuses. The obtained results confirmed another time that the Oestrus ovis prevalence is higher in sheep (67.8%) in comparison with goats (43.1%), but this parasitic disease is important form both species and annually recorded economic damages for their breeders.

Key words: prevalence, necropsy, Oestrus ovis larvae

THE COMPARATIVE EFFECT OF TWO ANTIPARASITIC DRUGS IN SHEEP

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This study was performed in two consecutive years, 2006 and 2007, on 30 Țurcana breed, 2-5 years aged sheep from Timiș and Caraș-Severin districts, with clinical signs of ovine oestrosis. The animals received two antiparasitic drugs, Ivomec and Rafoxanid and after 12 days after treatment they were slaughtered and their heads were been examined in the way of Oestrus ovis larvae discovering. The effect of treatment with Ivomec was superior to those of Rafoxanid, demonstrated by number of larvae found in nasal ways and sinuses. It was also observed the higher incidence of ovine oestrosis in 2006 in comparison with 2007, attributed to meteorological conditions.

Key words: ovine oestrosis, Oestrus ovis, larvae, antiparasitic drugs.

RESEARCH REGARDING THE GROWING SPEED OF CROSSBREED SUCKLING LAMBS CHAROLAIS X MERINOS DE TRANSILVANIA, IN BANAT AREA

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In the last ten years the milk lambs were very demanded on the west European market, especially at the beginning of December and early spring. In this researches was followed the growing speed evolution on crossbreed Charollais x Merinos de Transilvania lambs, from lambing to weaning (70 days). Mother sheep were well prepared before get trough a normal nutrition, depending on the phase of gestation and adequate sheltering conditions. At lambing, sheep had a very good condition and a normal milk production. Crossbreed lambs had maternal milk on ad libitum and from the age of 10 days got in separated enclosures, quality after-grass and granulated combined feeder with 14% PDI in the first 30 days and 12% between 30-70 days. After the evaluation of the growing speed it was determined that lambs from single lambing, both sexes (F-female, M-male), realize a growing speed, between lambing to weaning (70 days) superior (370g/day), the ones from twin lambing (F-F couple 286g/day, F-M couple 299g/day, M-M couple 302g/zi). The growing speed is significantly higher ($p < 0.01$) in 30-70 days period, compared with 10-30 days period, both in lambs from single and twin lambing. On the base of this study, we suggest that for obtaining milk lambs with a higher body weight and quality meat, realization of crossbreed lambs between breeds Charollais and Merinos de Transilvania, is opportune. This should be raised with maternal milk and strong feeder, at least until the age of 70 days.

Key Words: sheep, meat crossbreeds, average daily gain.

USING OF MOLECULAR GENETIC MARKERS TO IMPROVE THE TELEORMAN BLACK HEAD TSIGAI SHEEP BREED

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The investigation involved 66 Teleorman Black Head Tsigai sheep. The animals were monitored throughout their twelve controls determining the total amount of milk. The genetic markers considered by the investigation were the haemoglobin and transferrin. They were identified two genotypes (Hb^A/Hb^B and Hb^B/Hb^B) at the haemoglobin locus and eight genotypes at the transferrin locus. The simultaneous analysis of the two studied markers reveals the superiority of the heterozygous sheep $Hb^A Hb^B/Tf^M Tf^E$, which displayed the highest productive performance for the study character.

Key words: genetic marker, sheep, haemoglobin, transferrin

EARLY USAGE OF SHEEP AND GOAT YOUTH FOR THE REPRODUCTION

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Female lambs and kids at the age of 9-10 months were used for early reproduction and it was noticed that the medium values of the weight of the lambs calved by female sheep and the kids calved by female kids are close to the medium values of the weight of the lambs and kids calved by adult sheep and goats. The main index of reproduction accomplished by the youth female situated at the level of the values characteristic to the sheep and goats breeds or populations belonging to Carpatina breed, registering lower values. By the early usage of sheep and goats male youth the following were noticed: Palas Merino male lambs, capable for reproduction 80%; the male lambs from Palas prolific population, capable for reproduction 88,8; out of the he-goats lots of Carpatina breed, at the age of 7-10 months, 83.33% the males manifested a normal sexual behaviour; the males which did not have sexual reflexes at the age of 7-10 months and at the age of 19-22 months they were not capable for reproduction, and the ones that had the seminal material of low quality continued to be so.

Key words: sheep, goats, early usage for reproduction

USE OF VEGETAL LECITHIN IN THE RATIOS OF MILKING SHEEP AND GOATS

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With the purpose of increasing the milk production at milking sheep and goats they were given a supplement of vegetal lecithin, residue (mucilage) from manufacturing the soy and sunflower, which was administrated in the morning, in the drinking water (100/200 ml mucilage), after a previous dilution with warm water in a proportion of 1/1. At all experimental lots of sheep and goats the total milk production of milk increased with 5-12%, even if sometimes the production of merchandise milk had close values between the experimental and witness lots, in a few cases even, this being due to the lactation period, which was also variable. It was determined the chemical composition of the sheep and goat milk and it was noticed that at the experimental lots, which received a plus of vegetal lecithin in the fodder ratios there were determined higher values at the dry substance, fat and protein, however the changes were not constant during determination and sometimes the values were equal with those from the witness lot or even inferior to these. It was determined the structure of the fat of milk and it was noticed an increase of the content of non-saturated fat acids in the case of the experimental samples which came from the animals that received vegetal lecithin in their ratios comparatively with the content determined at the milk of animals from the witness lot.

Key words: vegetal lecithin, milk production, sheep, goats

LAPTELE DE CAPRA: O PROVOCARE PENTRU SECTORUL DE CERCETARE - DEZVOLTARE DIN ROMANIA

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In the past 20 years the study of goat caseins genetic polymorphisms received a considerable research interest. In particular the researches were focused on CSN1S1 locus which is the most polymorphic, 17 alleles being known so far. These alleles are associated with four different levels of protein synthesis, affecting significantly goat milk quality and its technological properties. In this context the present review is describing recent literature data at international and national level, which allow the understanding of goat milk quality variation in relation with its physical-chemical characteristics, milk protein genetic polymorphisms and physiological factors. We also describe the current stage of researches concerning the use of milk protein polymorphisms in identifying possible adulterations from dairy industry and also studies on milk allergenic potency.

Key words: milk, goat caseins, polymorphisms, cheese, authenticity, allergies

RESULTS CONCERNING THE GROWING DYNAMICS IN YOUNG SHEEP HYBRID SUFFOLK x TSIGAI AND TSIGAI, FROM LAMBING TO WEANING

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The comparative results of the growing dynamics of the Suffolk x rusty Tsigai hybrids, and rusty Tsigai pure breed young sheep from lambing to weaning are comparatively presented in this paper. The average values, variability estimates and differences between the average values of both breed structures and those performed by the offspring of three Suffolk rams used in reproduction are apart presented by male and female young sheep. The following traits were recorded: the body weight (at lambing, 60 days of life, and weaning), total gain and average daily gain from lambing to weaning. The average weaning age was between 84 and 89 days, function of sex. Positive differences, statistically assured were recorded in Suffolk x Tsigai hybrids of both sexes ($p < 0.01$ and $p < 0.001$) compared to rusty Tsigai young sheep in all analyzed traits, except lambing weight. Statistically not significant differences were recorded in all analyzed traits between the hybrid offspring of the three Suffolk rams used for reproduction, and also between male and female offspring within both breed structures.

Key words: young sheep, body weight, Suffolk x Tsigai hybrids, Tsigai

NEW STRATEGIES OF ORGANIZING THE TECHNOLOGIC FLOW WITHIN THE SHEEP AND GOATS' FARMS

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With the purpose of increasing the total milk production and milked production, the superposition of sheep and goats' milking over the servicing period and over the first two months of gestation. This fact influenced the milk sheep population – Palas an increase of the total average of milk with 14.58%, confronted by the sheep weaned before the servicing and by a milked production greater with 4.61%. The total average of milk production of sheep belonging to Palas Merino breed was 18.8% greater to the sheep within the gestation period and which were milked than the production of the sheep which were weaned before the servicing period, the average production of milked milk being 48.53%. The total average of milk production of the goats belonging to Carpatina breed was 30.4% and 24.0 % greater to the goats within the gestation period and which were milked confronted by the production of the weaned goats before the servicing period and the average production of milked milk was 58.7% and 51.6% greater. In order to increase the milk production as merchandise the modification of suckling lambs and kids growing technology took place and also the early weaning of lambs and kids. The lambs belonging to Palas Merino breed were weaned at the average age of 44 days and having the weight of 14.78 ± 0.25 kg males and 14.34 ± 0.27 kg females; the lambs belonging to milk production Palas population were weaned at the average age of 38 days and having the weight of 12.05 ± 0.22 kg males and 11.16 ± 0.51 kg females ;the lambs belonging to Palas population were weaned at the average age of 42 days; the kids belonging to Carpatina breed were weaned at the age of 48 days .

Key words: sheep, milked production, goats

TECHNOLOGIES RELATED TO THE SHEEP AND GOAT MILK WITHIN ECOLOGIC CONDITIONS

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The introduction of HACCP system within sheep exploitations represents a unitary control manner, scientifically proved, which enforces the discipline and correctness, allows an objective evaluation of sheep and goat meat and milk quality. When determining the main components of sheep and goat milk from the animals that grazed on the pasture fertilized with stable manure, within ecologic conditions, the following results were obtained: at sheep there was a fat percent of 6.22% and 6.11%, protein 5.32% and 5.52%, and dry substance 14.25% and 14.21%, normal values for sheep milk; at goats the fat percent was that of 6.22% and 6.11%, protein 5.32% and 5.52%, and dry substance 14.25% and 14.21%, normal values for goat milk. The milk samples taken from the sheep belonging to Palas Merino breed and from Carpatina breed were also analysed with regard to the toxic residues and it has been stated that the values obtained fit within the normal norms admitted by the food domain' standards, being in compliance with the safety and protection of the consumers. The elimination of chemical fertilizers, pesticides and herbicides has led to the non-noticing of their presence within the sheep and goat products. By the regulation of ecologic products' quality, in relation with the consumers' and environment's protection, a balance was created between the producers' interests and obligations, those of the merchants and also those of the consumers. On the basis of results obtained through the microbiological examination of milk and meat samples taken from the sheep it has been stated that the microbial flora identified is formed by representatives of Staphylococcus–72.72% Streptococcus β hemolytic – 9.09% and Fungi filamentous – 18.18%. The microbial flora is non pathogen for man

Key words: sheep, goats, ecologic, toxic residues.

GENETIC POLYMORPHISM OF SOME PROTEINS IN THE MILK OF CARPATHIAN GOAT

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The paper presents some aspects of the polymorphism of some Carpathian goat milk proteins. The Carpathian breed is the main breed of goats reared in Romania. The optimal working conditions were determined for the identification of the casein phenotypes. The technique of the polyacrylamide gel electrophoresis was used. The milk samples were processed to remove the fat and whey and the migration was done in the presence of a standard sample, which contained proteins with different molecular weights. The interpretation of the electrophoresis migrations revealed the presence of two genotypes, the homozygous genotype β -Cn BB and the heterozygous β -Cn AB. The homozygous genotype β -Cn AA was not identified in any individual. The heterozygous genotype β -Cn AB displayed a high frequency (59%) and it was observed in 10 individuals. The homozygous genotype β -Cn BB was observed in 7 individuals and it had a frequency of 41%. The homozygous genotype β -Cn AA has not been identified in the studied population. The distribution of these genotypes showed that allele β -CnB was predominant (70%) over allele β -can (30%).

Keywords: goats, milk polymorphism, casein