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1. - GREEN LEMON ESSENTIALOIL ANTIMICROBIAL ACTIVITY AGAINST *LISTERIA MONOCYTOGENES* INOCULATED IN CHICKEN MEAT

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Abstract:
The provision of safe and healthy food is one of the industry's most significant obstacles. As a result, this cannot be accomplished without a variety of processes and chemicals. The food industry uses a variety of synthetic preservatives to delay spoilage, and the development of pathogenic microorganisms in order to increase the safety and shelf life of products. Contrarily, the preference of consumers to consume food products with natural additives encouraged the food industry to produce preservatives with a natural basis. On the growth of *Listeria monocytogenes* CCM 4699 on chicken breast meat, the impacts of vacuum packaging, storage temperature, and green lemon essential oil (GLEO) were investigated. Slices of raw breast chicken were vacuum-packed with green lemon essential oil, and then inoculated with a strain of *Listeria monocytogenes* CCM 4699. Following treatment, the slices were stored for 5 days while *L. monocytogenes* growth and microbial shelf life were monitored. Enterobacteriaceae family, total viable counts (TVC), and microbial populations of inoculated *Listeria monocytogenes* in poultry meat were also observed during storage's first 0 days, 1 day, 3 days, and 5 days. Green oil or no green oil vacuum packaging greatly reduced microbial populations. The combination of vacuum-packaging and green oil was also found to be highly successful in preventing the growth of Enterobacteriaceae in ground chicken breast meat. With green lemon essential oil added to chicken breast meat, vacuum packaging's antimicrobial effects can be strengthened against some food pathogens.

Keywords: green lemon essential oil, *Listeria monocytogenes*, antimicrobial activity, chicken meat

2. *CORYMBIA CITRIODORA* ESSENTIAL OIL ANTIMICROBIAL ACTIVITY *IN VITRO*

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Abstract:
Medium to large evergreen *Corymbia citriodora* (*Eucalyptus citriodora*) trees have smooth, powdery bark that is light grey, cream, or pink in color. It is frequently grown as an ornamental tree and is widely cultivated in Australia for its timber and essential oil. Herbal remedies are made from its foliage. It produces an essential oil that can be used to treat a variety of ailments, including clogged nasal passageways, cuts wounds, sore throats, and skin infections. The aim of the study was to determine the

antimicrobial activity of *Corymbia citriodora* essential oil (CCEO) against ten microorganisms *Candida albicans* CCM 8186, *C. glabrata* CCM 8270, *C. krusei* CCM 8271, *C. tropicalis* CCM 8223, *Staphylococcus aureus* subsp. *aureus* CCM 4223, *Micrococcus luteus* CCM 732, *Listeria monocytogenes* CCM 4699, *Escherichia coli* CCM 3954, *Pseudomonas putida* CCM 1977, and *Enterobacter aerogenes* CCM 2531. The antimicrobial activity of CCEOs was evaluated using the disc diffusion method. The best antibacterial activity of CCEO against yeasts was found against *C. tropicalis* (17.33±0.58 mm). CCEO was most effective against Gram-positive bacteria *M. luteus* (9.33±0.58 mm) and Gram-negative bacteria *E. coli* (12.67±0.58 mm). In conclusion, *Candida* species were most sensitive against *Corymbia citriodora* essential oil.

Keywords: *Corymbia citidora* essential oil, antimicrobial activity, Gram-positive bacteria, Gram-negative bacteria, yeasts

3. *ILLICIUM VERUM* ESSENTIAL OIL ANTIMICROBIAL ACTIVITY *IN VITRO AND IN SITU*

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Abstract
Star anise, or *Illicium verum*, is a widely used term. Star anise, a culinary flavor that is primarily used in Asian nations, is derived from the evergreen Chinese plant *Illicium verum*. In addition to being flavorful, it has significant medicinal value. *Illicium verum* has strong antimicrobial properties, and was once used to treat a variety of illnesses with microbial origins. In our study the antimicrobial activity of *Illicum verum* essential oil (IVEO) against ten microorganisms *Candida albicans* CCM 8186, *C. glabrata* CCM 8270, *C. krusei* CCM 8271, *C. tropicalis* CCM 8223, *Staphylococcus aureus* subsp. *aureus* CCM 4223, *Micrococcus luteus* CCM 732, *Listeria monocytogenes* CCM 4699, *Escherichia coli* CCM 3954, *Pseudomonas putida* CCM 1977, and *Enterobacter aerogenes* CCM 2531 were tested *in vitro* and *in situ*. The antimicrobial activity of CCEO was evaluated using the disc diffusion method *in vitro* and in vapor phase on carrot *in situ*. The Chinese star anise essential oil showed the best antibacterial and antifungal activity against *Listeria monocytogenes* and *Candida glabrata in vitro*. The best results of antimicrobial activity in vapor phase on carrot were found against *Micrococcus luteus* and *Candida tropicalis in situ*. The results of this study suggest that IVEO is more active against Gram-positive bacteria and star anise essential oil could be used as a natural antimicrobial agent.

Key words: *Illicium verum* essential oil, antimicrobial activity, *in vitro*, *in situ*, bacteria, candida

4 ANTI-SALMONELLA POTENTIAL OF *SALVIA SCLAREA* ESSENTIAL OIL IN CHICKEN MEAT

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Abstract
The group of pathogens that most commonly cause food poisoning includes pathogens of the genus *Salmonella*. The growth of *Salmonella enterica* subs. *enterica* Enteritidis CCM 3807 in chicken meat was examined, as well as the *Salvia sclarea* essential oil alone and in combination, as well as their ability to prevent spoilage at two storage temperatures. In food model studies, the impact of accompanying microbiota on fresh meat was examined, and the anti-salmonella activity of artificially inoculated raw meat was assessed. The experiments were conducted in two storage environments: +4 °C (the temperature at which meat is typically stored) and +18 °C (room temperature, which favors the spoilage of investigated meat samples and development of food pathogens). The microbiological quality of the chicken meat samples was assessed, including the total bacteria count, coliform bacteria, and *Salmonella* with the classical microbiological method. A significant effect of essential oil against microbial meat spoilage was indicated by changes in the normal microbiota, where various groups were impacted by various treatments. Additionally, compared to the control samples, the treatment with *S. sclarea* essential oil decreased the quantity of salmonella cells.

Keywords: chicken meat, *Salvia sclarea*, anti-salmonella effect, essential oil, total count of bacteria, coliform bacteria

5. INSECTICIDAL ACTIVITY OF *LAVANDULA ANGUSTIFOLIA*

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Abstract
Oilseeds, pulses, and cereals that are kept are seriously harmed by insects. These pests are found all over the globe and result in significant financial losses. Common Palaearctic heteropteran *Pyrrhocoris apterus* produces the macropterous and brachypterous wing morphs, two different wing types. In all of its geographic range, the cereal leaf beetle, *Oulema melanopus* (L.) (Coleoptera: Chrysomelidae), is a well-known and significant pest of cereals. The volatile chemical mixtures that make up essential oils (EOs) of plants are frequently used as bioactive agents. Effective antifeedants, pesticides, oviposition inhibitors, ovicides, and repellents include EOs. The present work aimed to determine the insecticidal effects of the essential oil (EO) of *Lavandula angustifolia* (LA) against *Pyrrhocoris apterus* and *Oulema melanopus* in different concentration. The best insecticidal activity of LAEO against *P. apterus* was found in 12.5 %

concentration. The greatest insecticidal activity was gained against *O. melanopus* when LAEO concentration was 50 %. An all-natural alternative to synthetic pesticides, LAEO demonstrated insecticidal properties.

Keywords: *Lavandula angustifolia* essential oil, insecticidal activity, *Pyrrhocoris apterus*, *Oulema melanopus*

6. NATURAL CHICKEN MEAT ANTIOXIDANTS STIMULATION BY DIETARY SELENIUM AND METHIONINE

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Abstract
Antioxidants are low molecular weight chemicals naturally present in food, including fresh meat, at relatively low concentration, comparing to easily oxidized molecules. These small particles are able to lower the dynamic of lipids, proteins and DNA oxidation processes. The presence of active antioxidants determines both the quality and durability of food. Carnosine related substances, taurine and glutathione are important substances naturally present in meat expressing strong antioxidative properties via free radicals scavenging resulting in animal tissues protection against oxidation. The aim of the study was to enhance the content of selected antioxidants in meat by the addition of methionine and selenium to broiler chicken diet. Ninety one-day old Flex and F15 with dwarf gene (Hubbard) chicks were allocated to four experimental groups: control, and fed diets enriched with 11.2 g/kg methionine, as well as 0.50 mg/kg organic (Se-yeast *Yarrowia lipolytica*) and inorganic selenium (sodium selenite). After 35 days of feeding breast and leg muscles were excited and subjected to histidine dipeptides analysis (HPLC). The results of the study revealed that chicken diet supplemented with selenium, despite the form, can increase significantly the concentration of both histidine dipeptides in chicken breast. Methionine rich diet was effective in increasing carnosine and anserine content only in breast of Flex chickens. Leg meat from F15 chickens with dwarf gene was not affected by applied diet modifications when analysed carnosine content, whilst anserine concentration was increased by the chicken supplementation with selenium. Dietary organic selenium increased both histidine dipeptides content in Flex chicken legs, whereas inorganic selenium was not effective in carnosine and anserine enhancement. Methionine addition to the diet of Flex chicken resulted in higher carnosine concentration, without apparent effects on anserine content in leg meat. It can be concluded that carnosine, anserine and taurine concentration in chicken meat, especially breast, can be enhanced by feeding diet enriched with selenium. High level of methionine in diet can increase histidine dipeptides content only in Flex broiler chickens.
Keywords: histidine dipeptides, taurine, antioxidants, poultry, Se, methionine

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7. ASSOCIATION OF *DGAT1* WITH MILK PRODUCTION TRAITS IN ROMANIAN SPOTTED CATTLE

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Abstract
The objective of this study was to investigate two adjacent single nucleotide polymorphisms (rs109234250 and rs109326954) in Diacylglycerol O-acyltransferase 1 (*DGAT1*) gene located at chromosome positions 14:1802265 and 14:1802266 (UMD3.1 reference genome). The two SNPs result in a change *GC→AA* in exon 8 of *DGAT1,* are in linkage disequilibrium and encode the *DGAT1* A232K (p.Ala232Lys) substitution. A total of 475 Romanian Spotted cattle were included in the study. Genotyping was performed using the Axiom Bovine v3 SNP-chip. Phenotypic data consisted of 27,634 records for the first three lactations (L1-L3) and included: milk yield (MY), fat and protein percent (FP, PP) and fat and protein yield (FY, PY). The effect of SNP genotypes on milk production traits was assessed using ANOVA. Tukey pairwise comparisons were also performed on genotype effects. The frequencies of the *AA/AA, GC/AA*, and *GC/GC* genotypes were 0.033, 0.280, and 0.687, respectively, and the minor allele frequency (*AA* variant) was 0.173. The *DGAT1* A232K variant was significantly associated ($p < 0.05$) to MY in lactation L3, and with FP and PP in all three lactations. This study confirms that the previously reported associations between the two variants of *DGAT1* and milk production traits are also found in Romanian Spotted cattle.
Keywords: DGAT1, milk production traits, Romanian Spotted cattle.

8. NUTRACEUTICALS: THE LINK BETWEEN LIFESTYLE AND MEDICINE. A REVIEW

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Abstract
Numerous studies have reported positive associations between certain biologically active compounds, with pharmacological properties, such as nutraceuticals, contained in some foods and various pathologies. The term "nutraceutical" currently varies from country to country, referring to a number of valuable molecules, derived from organic sources (plants) or foods such as polyphenols, essential amino acids,

antioxidants, soluble fiber, polyunsaturated fatty acids (PUFA), prebiotics, prebiotics, which act at the cellular level, in combating oxidative stress and inflammatory processes and / or in altering the expression of some genes. The discovery of the many benefits attributed to these products and the ever-changing lifestyle have contributed to increasing consumer confidence in nutraceutical and functional foods around the world, and there is a growing interest in improving the quality of life and adopting a healthy lifestyle. to prevent or reduce the risk of disease. Based on these considerations, this paper aims to review some scientific evidence obtained from in vitro / in vivo studies, which supports the beneficial effects of some nutraceuticals and their medical implications in various pathologies.

Keywords: nutraceuticals, bioactive compounds, therapeutic effect, pathologies

9. IN VITRO EVALUATION OF THE CYTOTOXICITY OF PYRIDINIUM CATION IONIC LIQUIDS ON THE HCT8 CELL LINE

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Abstract
Although in recent years, ILs have been considered a promising alternative of the modern world to the use of organic solvents, recent studies have pointed out that their widespread use in various fields of science and industry increases the danger and harmful effects on the environment and human health. Therefore, the determination of the ecotoxicity and safety of these compounds should be mandatory regardless of the perception of their stated green properties, which has changed radically in recent years. Starting from these considerations, our team tested in controlled laboratory conditions the effect of butyl methylpyridinium chloride (4MBPCCl), ionic liquid with pyridinium cation, administered in DMEM culture medium, on human tumor cells from the HCT-8 line, at the concentration of 0.25 mg/mL, 0.5 mg/mL, 1.0 mg/mL, 2.00 mg/mL and 4.00 mg/mL. The cells in the control group were not exposed to the ionic liquid, and for the experimental groups the effect was monitored 24 and 48 hours after administration. Following the analysis of the results, it was demonstrated that 4MBPCCl exhibits antiproliferative capacity at all concentrations tested, the maximum effect being reached at the concentration of 4.00 mg/mL.

Keywords: ionic liquids, biotoxicity, butyl methylpyridinium chloride (4MBPCCl), tumor cells HCT-8

10. HEAT STRESS: CAN ANIMAL BE STRESSED BUT STILL BE HEALTHY?

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Abstract
In this era of rapid climate change, heat stress has emerged as a major problem for sheep farming. The quantity and quality of sheep production, as well as the welfare, are all shown to be negatively impacted by heat stress. Reduced cellular immune function in sheep exposed to high temperatures increases susceptibility to various diseases, although the underlying mechanisms are unclear. The imbalance between oxidants and antioxidants, known as oxidative stress, negatively impacts animal health due to heat stress-induced impairments in immune responses, increased production of reactive oxygen species, and/or a lack of antioxidants. Heat stress in livestock has negative effects on both the cell-mediated and humoral immune responses. However, the negative effects of heat stress on immune response in sheep can vary by breed. This review discusses how heat stress affects sheep's immunity. An overview of some molecular markers related to immunity, such as interleukin (ILs), Toll-like receptors (TLRs), and also the heat stress protein (HSPs) in sheep, is also discussed. Finally, recent research on the effects of antioxidant supplementation and other promising nutritional strategies for reducing heat stress and improving animal health is presented.

Keywords: animal health, antioxidant, heat stress, immunity, sheep.

Acknowledgment: This study was supported by the bilateral S&T cooperation programme, within the project "*Effect of heat stress in Pramenka types of sheep using DNA and RNA based methods*" from the National Development, Research and Innovation Fund (2021-1.2.4-TÉT-2021-00047). This study was also supported by the bilateral S&T cooperation programme, within the project "*Genetic characterization of native sheep in Carpathian basin and Morocco as a potential factor for climate change adaptation*" from the National Development, Research and Innovation Fund (2021-1.2.4-TÉT-2021-00014).

11. COMBINATION OF METABARCODING AND THE EDNA FROM FECAL SAMPLES IN THE SERVICE OF ANIMAL HUSBANDRY - APPLICATION AND DEVELOPMENT DIRECTIONS

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Abstract
Environmental DNA (eDNA) metabarcoding is an emerging and promising method for assessing biodiversity in which samples are taken from the environment, then DNA is extracted and amplified using general or universal primers in PCR for next-generation sequencing, which generates thousands or millions of reads. Based on this data, the presence of species can be determined and the overall biodiversity can be assessed. The use of the eDNA faecal sample in farm animals is a commonly used method for examining the microbiome of intestinal tract. This sampling method, supplemented with metabarcoding, enables the identification and characterization of the bacterial, viral and parasitic communities in the animal gut, which can provide insight into the animal's health status and risks, as well as provide feedback on the effects of feeding, which has a direct impact on the animal's performance. The great advantage of the method is that – compared to previous methods – it enables a much more accurate diagnosis by identifying pathogens and parasites at the species level, and it can also significantly reduce the risk of sample contamination by applying appropriate protocols, especially compared to traditional methods, such as culture-based approaches. All this in a much shorter time and at a fraction of the cost compared to traditional methods. This is a unique method that is still under development and will change for some time as technology advances and protocols are standardized. In our poster, we will review the basic methodology, advantages and concerns of eDNA metabarcoding based on faecal sampling, as well as present the possible future development and application directions of the method.

12 THE EUROPEAN CATFISH (*SILURUS GLANIS*) AS AN INVASIVE SPECIES – EDNA DETECTION METHODS

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Abstract
The European or Wels catfish *(Silurus glanis)* is an opportunistic apex predator which is the largest freshwater fish species in Europe, making it a popular choice as an angler fish or biological control agent. Moreover, in recent years in many places they have also become increasingly important in the food

industry too. They mainly live in fishponds or rivers, and their natural area of distribution is Central-Eastern Europe and Western Asia. Over time they have been introduced into many aquatic systems in several countries, such as France, the UK, Italy, Portugal, and Spain, but they have become an invasive species due to their excellent adaptability. The European catfish is a highly successful, aggressive apex predator, with a broad diet ranging from molluscs, fish and small mammals to birds, and thus has a profound impact on the ecosystem. Therefore, depending on the location, their impact can be beneficial or extremely detrimental. As a result, their monitoring in natural waters has become an important task at the national and international levels. Hence, as with other invasive species, for their detection, a variety of traditional methods are applied. However, with recent technological advances (such as the appearance of New Genome Sequencing - NGS), non-invasive, sensitive, cost- and time-effective approaches have emerged that utilize environmental DNA (eDNA) as a basis. The aim of this work is to present these recent technologies and their application to European catfish species.

Keywords: environmental DNA, invasive species, review, *Silurus glanis*

13. ACTORS IN SHARING ADAPTABLE RESULTS OF GENETICS AND MANAGEMENT FOR DEVELOPING SUSTAINABLE LIVESTOCK

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Abstract
Maintaining biological diversity in animal husbandry is a task that has serious economic and management implications as well. African and Asian countries facing food-supply challenges will only be able to provide food to their growing populations in the future if they ensure diversity in livestock production, thereby including climate, disease and other-resistant – in several cases: indigenous – breeds in breeding. However, this objective imposes a serious tasks on the agri-administration of the states concerned and on the representative bodies of agriculture (chambers and other institutions), as they must explain to livestock breeders the occasionally unique management methods related to the keeping and inclusion of diverse breeds in the supply chain. These efforts can be facilitated by the collection of existing best practices and the application of their adaptable elements under certain conditions. In this area, the activities of administrations and interest representatives of European countries (e.g. agribusiness chambers) can serve as a good model. Thus the researchers of genetics and management should develop a broader cooperation in order to define the scientific results which can be applied in everyday agri-

management and present them to the governmental institutions and agri-business organizations concerned, who can hand these best practices to the community of breeders. The present work aims to describe the activities of the European chambers of agriculture and their experience in improving agricultural production and management in order to glean lessons that could be used by the African and Asian governments to improve agricultural and livestock sectors in their region in parallel with performing phenotypic and genetic characterization of some unstudied indigenous animal species to assess their adaptation and production potential, information needed to establish future breeding and management strategies.

Keywords: animal genetics, indigenous breeds, management, sustainability

14. KNOWLEDGE, ATTITUDES, PRACTICES AND SOCIODEMOGRAPHICS DETERMINANTS TOWARD FOOT AND MOUTH DISEASE

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Abstract
This work addresses to study the small holder farmer's knowledge, attitudes, and practices (KAP) related to foot and mouth disease (FMD) control programme and farmer's characteristics determinants of FMD infections. Nine hundred sixty seven farm households (199 infected and 767 non-infected FMD) in Yogyakarta province in Indonesia were included in the multiple and logistic regression. Our results showed that joining farmer group demonstrated higher levels of knowledge ($\beta = 1.58$, $P < 0.01$) and practice FMD control programme ($\beta = 1.33$, $P < 0.01$). Among the influencing factors of FMD, only farmers with higher education have a positive attitude toward FMD control programme. Furthermore, the present work empirically showed that the farmers' characteristics, including land size, women's decisions, income, farmer group and cattle ownership, determine the likelihood of FMD infection. Nevertheless, farms in a communal shed have five times higher risk than individuals. Hence, to increase precautionary behaviors among the small holder farmers, animal health officials and policymakers must promote animal disease control programme. Future interventions and policies should also be developed in a 'group-centered' approach, targeting vulnerable small holder farmers, and closing the gap of KAP toward animal disease.

Keywords: foot and mouth disease, Indonesia, KAP, smallholder farms

15. ASSESSING GENOMIC INBREEDING AND HOMOZYGOSITY PATTERNS IN HUNGARIAN MERINO SHEEP AND ITS RELATIVES

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Abstract
The Merino sheep is one of the oldest sheep breeds still in existence. All around the world, purebred and mixed populations of Merino and Merino-derived sheep breeds can be found. This is a result of their wide distribution and increasing popularity. They are a massive genetic resource that has historically been used to produce numerous new breeds world widely. The current Hungarian Merino sheep breed has evolved over many years as a result of crossbreeding with different Merino breeds. Consequently, the objective of this study is to compare and contrast the genomic inbreeding coefficient (FROH) and patterns of runs of homozygosity (ROH) between the Hungarian Merino and other closely related Merino and Merino-derived breeds, namely: Spanish Merino Cordoba, Australian Merino, Australian Industry Merino, Chinese Merino, and Rambouillet. Following Rambouillet, Hungarian Merino had the second highest number of ROH class of 1-6 mbs. The Spanish Merinos Cordoba had the most ROH class of > 48Mbs, while the Hungarian Merino had none. The FROH of Hungarian Merinos was comparable to that of other studied breeds, while Spanish Merinos Cordoba had the highest. This study confirms that Hungarian Merino has several intermediate ancestors, and its breeding management is comparable to other Merino breeds and may also indicate greater genetic diversity within the breed. The results can therefore be used to improve genomic management of Hungarian Merino sheep breed.
Keywords: Genetic diversity, Hungary, Inbreeding coefficient, Merino sheep, SNP Markers

16. INVESTIGATING THE GENETIC DIVERSITY OF SQUAB PIGEON BREEDS USING MITOCHONDRIAL DNA COI REGION

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Abstract
Pigeon breeding is a long-established activity, with archaeological and written evidence dating back thousands of years. Hungarian pigeon breeding has been influenced from several directions in the past, as several trade routes crossed the historical Hungary. Therefore, the ancestors of today's breeds probably

originate partly from the East and partly from the West. The Turkish conquest left a large number of diverse pigeon breeds in Hungary, and pigeons from Russia also arrived in the Carpathian Basin through Polish mediation. Pigeons were introduced from the West thanks to Danube sailors. In this study, the results of analyses of the mtDNA (mitochondrial DNA) COI region of the Hungarian Giant House Pigeon (n=5), Hungarian Cropper (n=5), Buga pigeon (n=5), Giant Salonta (n=5), King (n=5), Mondain (n=5) at 540 bp are presented. Runt pigeon (n=5) was used as an outgroup. During the study, we analysed diversity indexes, haplotype distributions, the number of polymorphisms, and nucleotide frequency values. The genetic relationship between the haplotypes of the breeds is presented on the phylogenetic tree constructed based on the Neighbour-Joining clustering method. A total of 35 haplotypes were identified in the populations studied. Nucleotide diversity (π) was 0.2889+/- 0.0395 (Hungarian breeds) and (π) 0,3364+/- 0.0333 (Squab breeds). Our results help to reveal the extent to which populations are genetically uniform, and to what extent they are separated from each other. These data can also be used in practice, we can provide information for producers and lay the foundation for gene conservation and breeding work, which will benefit the sector in the long term.

Acknowledgment
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17. AN ON-STATION ANALYSIS OF NON-GENETIC FACTORS AFFECTING PRE-WEANING GROWTH RATE IN EAST AFRICA

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Abstract
Indigenous goats are one of the most important livestock species that are raised under extensive production systems. Also, they are mainly produced in arid and semi-arid parts of developing nations, where the harsh climatic conditions do not seem to have an effect on their productivity. In Kenya, arid and semi-arid regions make up a considerable percentage of the country. So, the goal of this study is to identify the non-genetic factors affecting the pre-weaning growth rates of Small East African (SEA) goats at the Naivasha sheep and goat station, which is situated in an area of Kenya that is categorized as semi-arid. Data on growth performance was mined from the farm's performance records. The average pre-weaning daily growth was calculated using the weaning age of 120 days. Using a generalized linear mixed model, the effects of fixed factors on the pre-weaning growth rate were investigated. Sex (the animal's gender, either male or female), birth type, season of birth, and dam's age at kidding were the fixed variables taken into consideration. Buck and year were the random factors. Results indicated that all the fixed factors taken into consideration, such as birth type, season, and dam age, had no significant ($p > 0.05$) effect on pre-weaning; however, sex significantly ($p < 0.05$) affected the pre-weaning growth rate. The study's

findings highlight the significance of non-genetic elements in goat's growth performance. The results may help with breeding decisions, farm management, and better conservation options for native goats.

Keywords: Extensive production, Kenya, non-genetic factors, pre-weaning, Small East African goat

18. ESTIMATION THE GENETIC PARAMETERS FOR CALVING SCORE USING A THRESHOLD MODEL, IN CHAROLAIS BREED

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Abstract
The aim of this study was to determine the breeding value and heritability for calving score using a threshold model for calves from Charolaise breed. In this study were used records obtained from 2935 calves of Charolais breed from Romanian Breeding Association for Beef cattle. The mean for calving score was 1.35± 0.010. The breeding values for calving score for calves were ranged between -0.2749 and 0.3606. The heritability for calving score was low 0.139. The threshold model was a method of analysis for categorical trait calving score.

Keywords: breeding value, cows, threshold model, calving score

19. ASSESSING THE CAPACITY OF MUSTARD BY-PRODUCT TO REPLACE MEDICINAL ZINC OXIDE IN CO-CULTURE CELLS

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Abstract
The banning of antibiotics (2006) as growing promoters and of medicinal zinc oxide (2023) in Europe will have a significant impact on the livestock sector, especially on pigs, a very sensitive category to infections with *Escherichia coli*, *Salmonella*, *Rotavirus* during and after the weaning period. This situation has given the opportunity to animal nutrition research to find alternatives: biologically active compounds efficient in maintaining the animal health.
Mustard seed meal (MSM) obtained after oil extraction is rich in bioactive compounds such as polyphenols, polyunsaturated fatty acids (PUFA omega-9, -6, -3), mineral microelements (Cu, Zn, Mn, Fe), carbohydrates and others known for their antimicrobial and immune stimulating activity. The present study investigated *in vitro* the capacity of a mustard meal extract to counteract the pro-inflammatory

effect induced by the bacterial toxin LPS in co-culture Caco-2 and HT-29 MTX cells used as a cellular model to mimic the intestinal barrier epithelium. Cells were seeded in a ratio of 90:10 and after confluences (3 days) and challenged with LPS for 48h. Flow cytometry was used to measure several pro-inflammatory mediators nitric oxide (NO) production, apoptosis and viability. The effect of mustard extract on pro-inflammatory cytokines (interleukin-8, interleukin-1β and tumor necrosis factor-α) release was measured by ELISA.

Our results showed that mustard extract meal was efficient in the inhibition of LPS induced apoptosis and NO production. It was also able to prevent the over-production of pro-inflammatory markers triggered by LPS through the inhibition of MAPK / PIK3 pathway.

Mustard meal might be a promising alternative dietary source to replace ZnO. Further *in vivo* work is necessary to investigate and confirm if the inclusion of mustard meal in piglets' diet has a similar protective activity against inflammation.

20 MYCOTOXIN OCCURRENCE IN SAMPLES OF CEREALS AND FEED FROM SOUTH EASTERN ROMANIA BETWEEN 2021-2022

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Abstract

Mycotoxins are naturally occurring toxins produced by fungus and can contaminate a variety of different crops and foodstuffs including cereals, nuts, spices, dried fruits, apples and coffee beans (Aasa et al., 2022). Mycotoxins can cause a variety of adverse health effects and pose a serious health threat to both humans and livestock (Marin & Taranu, 2022). The present study has investigated the contamination with mycotoxins cereals and feed, mainly from the South of Romania between 2021-2022. The concentration of six mycotoxins (aflatoxins - AF, fumonisins - FB, deoxinivalenol- DON, zearalenone - ZEN, toxin T2, ochratoxin A - OTA) were determined by ELISA in a number of 173 samples, of which 103 combined feeds, 38 protein-vitamin-mineral concentrates, 51 cereals, cereals and cereal by-products.

The mycotoxin contamination of the feed compound samples for pigs analyzed during this phase of the project was within the limits of EU legislation, with the exception of deoxynivalenol where the maximum value was 1.6 ppm vs 0.9ppm recommended as guidance value. Concerning the combined feed for chickens and laying hens, the contamination with mycotoxins was within the limits of the regulations and recommendations of the legislation in force. In the case of NC for sheep and goats, Directive 2003/100/EC stipulates a maximum content of 5 ppb in feed intended for dairy animals, which corresponds to the maximum value of NC contamination for sheep and goats. The maximum value of contamination of corn samples with AF was 28.2 ppb, which represents a value 7 times higher than the value of 4 ppb accepted by Regulation EC 165/2010 concerning the maximum levels of aflatoxins allowed in cereals. For deoxynivalenol contamination, the maximum contamination value was 1.9 ppm, higher than the 1.75 ppm value established by EC Recommendation 1126/2007. The maximum value of contamination of corn samples with OTA was 15 ppb, which represents a value three times higher than the maximum level allowed for OTA in unprocessed cereals according to EC Regulation no 1881/2006. The contamination of the corn samples with other mycotoxins was within the limits of the regulations in force. The maximum value of contamination of wheat samples with OTA was 9.5 ppb, which represent a higher value compared to the value of 5 ppb accepted for the concentration of OTA in unprocessed cereals according to EC Regulation no 1881/2006. The maximum value of contamination of gluten samples for AF was 4.8 ppb,

which is a higher value than the value of 4 ppb (EC Regulation 165/2010) accepted by the legislation in force for the maximum concentration of AF that can be allowed in cereals. Also, the maximum value of OTA contamination was 9.5 ppb, which is a higher value than the 3ppb value accepted for the concentration of OTA in products derived from unprocessed cereals according to EC Regulation no 1881/2006. Our results have shown that the concentration of the majority of the samples of and feed cereals were within the limits of EU legislation; however, some of the samples were contaminated with mycotoxins in concentrations higher that the maximum limits accepted by the in-force legislation.

Keywords: mycotoxins, cereals, feed, contamination

21. FEEDING VALUE OF OILSEEDS RICH IN OMEGA 3 FATTY ACIDS AS POTENTIAL INGREDIENTS IN BROILER NUTRITION

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Abstract
Due to the benefits of consuming products rich in omega-3, people have become more aware of the need for a surplus of n-3 fatty acids for meat in their diet. Three oilseeds rich in omega 3 fatty acids (linseed, hemp seeds and camelina seeds) were characterized to determine their nutritional value for inclusion in broiler diets to increase the PUFA content of poultry meat. Chemical determinations revealed a different protein content ranging between 19.74% (hemp seeds) and 26.78% (linseed). In terms of polyunsaturated fatty acids, especially α-linolenic acid was determined for linseed (50.71g/100g total fatty acids), camelina (34.15g/100g total fatty acids) and hemp (14.2g/100g total fatty acids). The selected products rich in polyunsaturated fatty acids will be introduced into the feed and tested on batches of broilers to track the best growth performance.
Keywords: oilseeds, OMEGA-3, poultry feed, polyunsaturated fatty acid.

22. LEGISLATIVE ASPECTS REGARDING THE CONTROL OF MYCOTOXINS

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Abstract
The branch of public health has always faced a rather big problem - the presence of mycotoxins. The most feared are the carcinogenic ones, which should be excluded from the food sector. Due to the fact that the

population has no way to be totally safe from the effect of mycotoxins, certain levels of tolerance have been established by the official bodies, thus, at the global level, regulations have been implemented regarding the maximum allowed limits of mycotoxins, having consumer protection center. The epidemiological risk due to the contamination of feed, food with compounds of a mycotoxic nature has involved international bodies such as: the Food and Agriculture Organization (FAO), the World Health Organization (WHO) and the United Nations Organization (UNO) through the United Nations Environment Program (UNEP) . In order to ensure a high level of protection of human health, the Rapid Alert System for Food and Feed (RASFF) was created within the European Community. These regulations were the basis for the development of national and international programs, with the aim of preventing the multiplication of fungi in plant substrates that end up in human and animal food, as well as the control of their contamination with mycotoxins.

Keywords: consumer, contamination, harmful effects, mycotoxins, regulations

23. PHYSICO-CHEMICAL AND MYCOLOGICAL EVALUATION OF FODDER FROM A CATTLE FARM

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Abstract
The purpose of the research was to carry out some analyzes in order to establish the physico-chemical composition and the fungal load of the plant substrates used for raising animals, in a cattle farm in the Moldova area in 2022. There were five categories of samples (75 determinations in total) - alfalfa hay, corn silage, mixed feed ration, concentrates, corn grains and were analyzed randomly from the farm. The results of the physico-chemical composition of the feed by the FT-NIRS technique were in accordance with the regulations in force and no significant differences were found between the samples, it is certain that the humidity had a higher percentage, hence the fact that there were developed species of fungi speaking from the point of view of mycotic contamination. The highest fungal load was recorded in corn grains and corn silage, and the lowest value was recorded in alfalfa hay. The number of colony-forming units per gram of sample was determined by the serial dilution technique in a double agar layer. The results obtained during the analyzed period highlighted the presence of the genus *Penicillium* to the greatest extent (28%), and the lowest percentage was recorded for the genus *Cladosporium* (5.3%).

Keywords: contamination, fodder, mycological analyses, physical-chemical analyses

24 USE OF PCR AND ELISA METHOD TO DETECT AND MONITOR THE INFECTION OF PIGS AND WILD BOARS WITH ASFV

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Abstract
African Swine Fever is an infectious disease affecting domestic pigs, wild boars and other related species. It is caused by a double-stranded DNA virus from *Asfarviridae* family. Currently 22 ASFV genotypes have been identified; the genotype I is the one circulating in Europe, South America and Western Africa. The infection causes high mortality rates in animals especially due to hemorrhagic fever. The first signalling of the ASF was in 1921 in Kenya. Subsequently, the virus was reported in 1957 in Portugal and afterwards in Spain, but it was eradicated from the Iberian Peninsula in the '80s. In Romania the ASF virus entered probably *via* Danube Delta, causing a major outbreak in 2018. Currently, in Romania, the outbreak is under control due to implementation of a molecular diagnostic program together with a slaughter policy. The objective of our current work was to present the diagnostic results of ASF virus in pigs and wild boars obtained in 2019 by PCR and ELISA in Constanta County. To evaluate the presence of post infection antibodies with ELISA we used blood samples collected on clot activator. For detection of active ASF virus infection by Real-Time PCR we collected blood or different organs. Using PCR, we confirmed 28 cases of ASF infection in wild boars out of 256 analysed samples and 15 in domestic pigs from private households out of 64 analysed samples. However, we did not detect the ASF virus in 1370 samples analysed from commercial farms. With ELISA we confirmed 18 wild boar out of 199 analysed samples and positive cases and 5 in domestic pigs from private households out of 879 analysed samples. We concluded that Real-Time PCR method allows a rapid detection of ASF virus few days after infection, while ELISA can be used to monitor the post infection immunological status of pigs / wild boar populations in response to ASF virus.
Keywords: pigs, African Swine Fever, PCR, ELISA, molecular diagnosis.

25. FAST AND RELIABLE METHOD FOR DETECTION OF MYCOTOXIN METABOLITES IN PIG'S URINE AS POTENTIAL BIOMARKERS OF EXPOSURE

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Abstract
Methods for the detection of mycotoxin metabolites in urine usually involve very sophisticated and expensive analytical equipment, such as mass spectrometers. However, it is possible to reliably detect and quantify these substances using more affordable equipment, making the possibility of performing analysis more accessible. The aim of this study was to evaluate the performance of the HPLC-FLD method for

determination of aflatoxin and zearalenon metabolites in pig's urine. The method was evaluated for aflatoxin M1 (aflatoxin B1 metabolite), as well as zearalenone, α-zearalenol and β-zearalenol (zearalenone metabolites). Urine samples were prepared after treatment with enzymes and cleanup on immunoaffinity columns. The method showed good specificity and selectivity, and good linearity (R^2>0.995) for all metabolites. Limits of quantification were below 50 ng/ml for zearalenone metabolites, and below 1 ng/ml for aflatoxin M1. Average recovery rates ranged from 91.3 to 98.6%. Precision was calculated as relative standard deviation (RSD) of ten measurements, and it ranged from 4.9 to 8.7%. Reproducibility was evaluated after two sets of measurements on different days and operators, and the RSD was ranged from 7.7 to 11.2%. The results of method's performance evaluation showed that it can be used for the determination of aflatoxin B1 and zearalenone metabolites in pig's urine.

Keywords: aflatoxin, zearalenone, HPLC-FLD, validation

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26 WILL FOOD IN FUTURE HAVE RATHER MORE LEGS THAN WE MIGHT LIKE? *TENEBRIO MOLITOR* AS A NOVEL FEED SOURCE

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Abstract

Commercial mass production of insects as a protein source involves only a few insect species, including the yellow mealworm, *Tenebrio molitor* L. (Coleoptera: Tenebrionidae). It is one of the most widely insects in Europe and one of the most promising insect species for the food and feed sectors due to its low rearing requirements and rich nutritional composition. The aim of this study was to investigate the changes of the most important nutrients of powdered mealworm larvae reared on different feed materials. Wheat bran was used as the control feed material. Experimental feed materials were sesame seed, canola seed, hemp cake and wheat screenings. Proximate analysis, mineral content, amino acids and fatty acids determination were carried out in both substrates and larvae. It was found that hemp cake was the most suitable substrate for high protein yield in larvae (62.7% dry weight basis) with lowest fat content (19.8% dry weight basis). Coincided, levels of most important amino acids (threonine, methionine, and lysine) were also highest in hemp cake grown larvae. Highest levels of all macro minerals (Ca, P, Na, K) were found in larvae from control group, however, all micro minerals (Fe, Zn, Cu and Mn) were lowest in this group. On the other hand, levels of all micro minerals were highest in larvae fed hemp cake. Linoleic acid content was highest in larvae from sunflower seeds, while highest α-Linolenic acid content was obtained in control. Based on experimental results, it can be concluded that meals from *T. molitor* larvae are an excellent feed material to be used in diets of livestock animals, especially larvae reared on hemp cake.

Keywords: edible insects, Tenebrionidae, chemical composition, feed materials

27. EGG YOLK IMMUNOGLOBULINS USED AS ADDITIVES IN MEAT QUALITY

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Abstract
The quality of food and feed is more and more in the first place of research, being tightly related to the health state of humans and animals. Due to these features, antibiotics used in animals are no longer agreed to be used, and natural supplements are encouraged to be used to increase the meat's nutritional quality. One of the natural immunoglobulins used as a replacement for antibiotics is egg yolk immunoglobulin Y (IgY), which is added in diet supplementation for feeding animals. The combination of probiotics and other substances with an immunological role, especially some natural immunoglobulins - such as IgY, has multiple advantages. Thus, it can be increased meat production, improve the immunological status of animals which decreases the stress effects, improve infection resistance, increase the quality of carcasses - which implicitly also leads to economic growth, and also obtaining animal products without the addition of antibiotics or growth stimulants, or even obtaining organic products. There are several cost-effective methods to extract natural immunoglobulin IgY from egg yolk: using dextran blue, polyethylene glycol, chloroform, and cryo-ethanol treatment followed by precipitation with ammonium sulfate. In this paper, we will present some features regarding the methods of extracting IgY immunoglobulins from the egg yolk, the way of using these immunoglobulins in animal breeding and improvement technologies, as well as the biotechnological advantages that derive from the use of this natural product.

Keywords: egg yolk, IgY, meat quality

28. PHYSICO-CHEMICAL PARAMETERS - INDICATORS OF EGG FRESHNESS

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Abstract
Consumers for healthy and tasty food demand fresh, quality eggs. Egg freshness is also an important criterion for the success of incubation. The physico-chemical properties of eggs are indicators of the freshness required by each consumer, but also by the egg processing industry and their components. Among the factors that influence the physico-chemical properties of chicken eggs, the genotype can be mentioned, but the most important changes are determined by the storage conditions (temperature, humidity and duration). The storage conditions significantly influence almost all physico-chemical

parameters of eggs. The pH and density of the internal components of eggs change during their storage, as a result of evaporation processes through the porous shell and the loss of carbon dioxide from the albumen.

The aim of this work was to determine the influence/effect of genotype and storage conditions of hen eggs on egg mass, weight and physico-chemical properties of their internal components. Eggs produced by chickens from two breeds appreciated among consumers (Marans and Araucană), maintained in an extensive or traditional system, purchased from a household in Timișoara, were used. A number of physical characteristics of the eggs were analysed, depending on the genotype (breed) and the duration of storage. The study was carried out over a period of 21 days, the eggs being stored at 4^0C. During the storage of the eggs, the weight of the internal components decreased both in the Marans breed and in the Araucan breed, the decrease being statistically insignificant ($p>0.05$), except for the weight of the white of eggs from the Araucan breed, where the decrease of about 1.75p% was significant at $p<0.05$. In both breeds, the values of the white/yolk ratio were statistically insignificantly changed during the storage period. The weight of the white of eggs produced by the hens of both breeds decreased during the storage period, the differences being small and insignificant from a statistical point of view ($p>0.05$). A significant increase ($p>0.05$) in the pH of the white was observed after keeping the eggs for 21 days at refrigerator temperature, the pH changes being more important than in the case of the yolk. Significant increases ($p<0.05$) in the density of both egg white and yolk after storage are observed for both breeds. Genotype did not result in significant differences between the density variations.

29. PHENOTYPIC DIFFERENCES ESTIMATION BETWEEN THE SEXES OF THE *ROMANIAN MIORITIC SHEPHERD* BREED

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Abstract

Romanian Mioritic Shepherd Dog was selected from a natural population breed of Romanian Carpathian Mountains. The aim of this study was the phenotypic differences evaluation between the sexes in a population of 26 males and 23 females of the *Mioritic Shepherd Dog* breed, for 9 body measurements: height at elbow, height at hock, head length, skull length, skull width, muzzle length, muzzle width, muzzle depth and muzzle perimeter. Following the study on the significance of statistical differences between body measurements recorded in the evaluated population, it was concluded that males from the population of the Romanian *Mioritic Shepherd Dog* studied in this paper showed superior and significant values for: height at elbow ($p<0.05$), height at hock ($p<0.05$), head length ($p<0.05$), muzzle length ($p<0.05$). It should be noted that the evaluated females showed superior values compared to males, but

insignificant (p>0.05), for muzzle width and muzzle depth**.** We recommend to the dog breeders specialists to take into account the genetic improvement programs, and also our results presented in this paper.

Key words: phenotypic differences, sexual dimorphism, *Romanian Mioritic Shepherd Dog*, males, females, body measurements

30. STUDY ON WILD ANIMALS' DYNAMICS ON 65-GIERA HUNTING AREA FROM TIMIS COUNTY

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Abstract
After Romanian integration into European Union, the hunting populations need more attention, due to European legislation. The observed size of an animals' population – which is opposed to the genetic size – is given by the number of individuals from all categories and also by the total number of males and females ensuring the descendant generation. The study presented in this paper aimed to analyze the quantitative evolution of 13 wild animal populations and environmental conditions, on the background hunting 65-Giera area, between the years 2018 and 2022, thus contributing to the knowledge of the hunting heritage in Timiș County with a total area of 12,386 ha, aiming sustainable management and conservation. Thus, this study recommends the revival of the existing population on this hunting area, through "blood refreshing" actions, as well as the permanent monitoring and limitation of populations from the *Canidae* family, especially of the Jackal (*Caniș aureus* L.) species, and the Red Fox (*Vulpes vulpes* L) species.

Key words: observed size, hunting animals, hunting population, hunting area

31. SMARTPHONE-CONNECTED THERMAL CAMERA AS TOOL FOR EVALUATING LOCOMOTION DISORDERS IN CATTLE

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Abstract
The use of thermal imaging to evaluate a variety of medical diseases in both humans and animals has been proven to be an approach that is expedient, inexpensive, and non-invasive. In recent years, it has also been utilized in the quest to determine the health status of livestock, specifically horses and cattle, in tandem with other approaches that are considered to be more conventional. The findings of the current research indicate that thermal imaging is a tool that has the potential to be very helpful and dependable for assessing potential locomotor disorders in cattle. This method of imaging is now cost-effective for use in all fields of medicine and by all practitioners, due to the recent advancements in thermal imaging technology. Additionally, the price of diagnostically useful thermal imaging machines has dropped significantly, and their size has shrunk significantly as well.

Keywords: thermal camera; locomotion disorders; thermography; dairy cattle

32. NOVEL NUTRITIONAL APPROACHES FOR REDUCING OXIDATIVE STRESS TRIGGERED BY HEAT STRESS IN DAIRY CATTLE

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Abstract
As the Earth's climate keeps getting warmer, the agricultural sector confronts massive challenges in ensuring food security for the world's growing population. Consumer awareness and appetite for animal-origin products have steadily increased in recent years. This reality compels farmers to offer their animals the best possible welfare and breeding circumstances, making effective animal welfare practices in dairy farming a vital matter for animal sciences researchers. This synthesis explores the effects of climate change on dairy cow health and productivity, as well as the potential use of innovative nutritional management approaches, such as the use of nanotechnology-based supplements, in mitigating the oxidative stress triggered by heat stress.
Keywords: dairy cattle; heat stress; nutrition; nanotechnology

33. RELATIONSHIP BETWEEN LOCOMOTION SCORE AND UDDER HEALTH IN ROMANIAN SPOTTED DAIRY CATTLE - PRELIMINARY STUDY

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Abstract
The present study was conducted with the purpose of investigating the relationship between lameness, as defined by locomotion score (LS), and udder health, as characterized by the somatic cell count (SCC) in Romanian Spotted Dairy cattle. The data set contained 1920 LS and SCC records, from 387 cows, collected monthly, over a period of six months. The locomotion score was assessed using a five-point system ranging from 1 to 5, where 1 was attributed to healthy cows and 5 was attributed to severely lame animals. Milk samples were collected from each quarter and the number of somatic cells was measured using an automatic cell counter (Combiscop, Delta Instruments). The relationship between LS, SCC and other physicochemical parameters in milk was investigated using the GraphPad Prism 9.5.1 Software. Cows with lameness had considerably ($p>0.01$) higher milk SCC and inferior udder health status as compared to healthy cows. Our results emphasize the value of lameness and mastitis control strategies, as well as the importance of developing farm-specific protocols and health management programs in order to reduce the economic losses associated with these diseases in dairy farms.

Keywords: locomotion score; lameness; udder health; somatic cells count; dairy cattle

34. BOVINE COLOSTRUM MANAGEMENT AND THE FACTORS INFLUENCING ITS QUALITY

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Abstract
The mammary gland's secretion, called colostrum, is synthesized throughout the last weeks of pregnancy and the first few days following calving. It is meant to give the calf the necessary nutrients and physiologically active substances. High immunoglobulin concentration and low pathogen load define high-quality colostrum. The amount and quality of colostrum that is available and the timing of the first feeding after birth both have an impact on the level of immunity. Heifers produce substantially less colostrum than cows do, and the breed has a big impact as well. Colostrum handling and storage techniques, as well as milking procedures are essential steps toward quality colostrum management on dairy farms. This review focuses on colostrum management, methods, and techniques for assessing colostrum quality and the factors that influence bovine colostrum quality.
Keywords: Bovine colostrum, management, quality, IgG concentration.

35. CORRELATIONS AMONG THE NUMBER OF SOMATIC CELLS AND LACTOSE CONTENT IN BOVINE MILK

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Abstract
Bovine mastitis, defined as the inflammation of the mammary gland, is the most important diseases of the mammary gland in cows due to the considerable losses in milk production and the danger that milk from ill cows poses to public health. The number of somatic cells in milk is the most important indicator used for directly evaluating the condition of the mammary gland and the quality of the milk. The development of inflammatory disease in the mammary gland is indicated by somatic cell counts above 200 000 cells per milliliter. Differences in the composition of milk, such as its lactose content, are related to variations in the number of somatic cells. The present paper summarizes the current knowledge regarding the correlations between lactose content and milk somatic cell count, and the potential of this parameters as a biomarker for assessing udder health status in modern dairy cow health prevention programs.
Keywords: bovine, lactose, number of somatic cells, subclinical mastitis.

36. STUDY ON GROWTH AND FEEDING EFFICIENCY IN CHAROLAIS SUCKLING CALVES

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Abstract
The aim of this study was to assess the suckling calves' performance and feeding efficiency in a Charolais cow-calf farm. The average number of cows in the farm was 200 heads, and calvings took place all year round. Animals were kept indoors with permanent access to paddocks. Calves had access to concentrates and hay. All the data was collected from the farm in years 2019-2021. Effect of year and season of calving on growth performance and feeding efficiency was studied. Monthly number of calves increased from 104 heads in 2019 to 114 heads in 2021, while the average weight was higher in 2020 (198.86 kg) and the average daily gain was higher in 2019 (1024.96 g/d). More calves were born in autumn and winter (124 and 112 heads) than in summer and spring (105 and 99 heads). Average calf weight was higher in winter (205.85 kg), and average daily gain was higher in autumn born calves (1099.29 g/d). The highest feed consumption was observed in 2019 (3233.42 kg hay and 2721.8 kg concentrates) and the lowest in 2021 (3084.83 kg hay and 2148.08 kg concentrates). The most efficient use of feedstuff was observed in year 2020, when was spent only 0.17 RON/kg ADG/month, while in the other two years this figure was 0.21 RON.
Key words: Charolais, feed efficiency, growth performance, season, suckling calves, year

37. STUDY ON GROWTH OF ABERDEEN ANGUS YOUNG MALES IN ROMANIA

Silvia Elena Erina, Ludovic Toma Cziszter, Stelian Acatincăi, Marioara Neagu-Nicula, Valeriu Carabă, Dorel Dronca, Raimond Rusu, Mircea Rațiu, Simona Baul

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Abstract
Low price beef involves obtaining the technical parameters with high efficiency. Analysis and interpretation of growth process is based on some indices obtained from periodic measurements. The aim of this paper was to study the growth performance in Aberdeen Angus young males reared in a beef cattle farm from Timiș County, România, from birth to the age of 2 years. The study was conducted on 20 Aberdeen Angus young males that were weighed at birth, weaning, 1 year, 1.5 years and 2 years of age. Raw data were corrected using the equation $W=(W_{birth}-W_{weaning})x200$ days/age at weaning (days). For all ages the growth energy, average daily gain, total gain and growth coefficient were calculated. Average body weight (growth energy) in Aberdeen Angus males was as follows: 30.11±0.897 kg at birth, 240.53±7.984 kg at weaning (200 days of age), 419.29±9.098 kg at 1 year, 640.51±10.997 kg at 1.5 years, and 792.53±19.256 kg at 2 years of age. The highest average daily gain in Aberdeen Angus males was observed from birth to 1.5 years of age (1115.92±39.012 g), followed by the period from birth to 1 year of age (1066.27±24.527 g). From birth to weaning the average daily gain was 1052.15±42.131 g, while from birth to 2 years of age was 1044.46±29.011 g. The average value of the growth coefficient, compared to the adult body weight of 1100 kg, was 2.75% at birth, 21.86% at weaning (200 days of age), 58.22% at 1.5 years, and 72.04% at 2 years of age. The studied growth indicators showed that Aberdeen Angus can be reared for beef with high efficiency, both as purebred as well as by crossbreeding with other cattle breeds.
Key words: Aberdeen Angus, growth, average daily gain, body weight

38. THE IMPORTANCE OF SULFUR IN RUMINANT NUTRITION

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Abstract
Sulfur (S) is one of the basic building elements; after calcium and phosphorus, it is the third most abundant mineral in the human body. Sulfur is also essential in animal nutrition. It has long been recognized that S represents an essential element for rumen microbes and is closely related to nitrogen metabolism. Sulfur is an important constituent of amino acids, enzymes, and vitamins in humans and animals. Sulfur is a component of various organic nutrients required by ruminants. It is crucial for producing certain enzymes, vitamins, hormones, and amino acids in the rumen, including cystine, methionine, and cystine. Sulfur amino acids, for instance, are found in collagen, the primary structural protein in mammalian tissues. Also, sulfur is not stored in the body. Therefore, it needs to be presented in

animal diets in order to maintain the synthesis of these nutrients in the rumen. In ruminants, sulfur supplementation is essential for overall health, growth and production, amino acid balance, and wool quality. Despite this, excessive sulfur digestion may cause a toxic effect on animals and adversely affect animals' performance and health, even causing serious diseases such as polioencephalomalacia (PEM). High sulfur levels in diets can significantly reduce animal performance, decrease milk production and sometimes even result in death. This article will focus on current knowledge about the metabolism and role of sulfur in the ruminant, factors affecting the production of hydrogen sulfide in the rumen, and the potential mechanisms behind sulfur toxicity in cattle. Additionally, possible strategies for minimizing sulfur toxicity in cattle diets will be discussed.

Keywords: *ruminants; animal nutrition; sulphur; microorganisms; ruminant digestion*

Acknowledgements

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39. COULD LOW FREQUANCY CALLS BE INDICATIVE OF STRESS AND NEGATIVE AROUSAL STATES IN CATTLE?

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Abstract

Cattle vocalizations have been recently proposed as potential animal-based indicators of animal welfare. In dairy cattle, low frequency calls (LFCs) tend to be associated with positive arousal states, such as dam-calf communication and feed anticipation. LFCs are sounds emitted by cattle with the mouth closed, generally used for short distance communication. The aim of the current research was to evaluate if LFCs could be indicative of negative arousal states in dairy cows during episodes of isolation. A number of 10 lactating multiparous Romanian Black and White cows (2nd parity) were separated individually from their herd-mates for 4 consecutive hours, with vocalizations being recorded using Sennheiser MKH416 microphones and Marantz PMD661 recorders. The acoustic structure of each individual call was analysed using Praat-v.6.0.31 software. Out of the 23 sound parameters analysed, isolation had a significant influence ($p \leq 0.05$) on a number of 4 parameters, namely: Wiener entropy (dB); mean, minimum and maximum frequency values of the sixth formant (F6, Hz); mean, minimum and maximum frequency values of the seventh formant (F7, Hz); and the frequency values at the upper limit of the third quartile (Q75%, Hz). However, parameters such as: fundamental frequency across the calls (Hz); maximum frequency (Hz); minimum frequency (Hz); peak frequency (Hz); sound duration (s); dispersal (Hz); harmonicity (dB); frequency values at the upper limit of the first (Q25%) and second (Q50%) quartiles (Hz); mean, minimum and maximum frequency values of the first to fifth formants (F1-F5, Hz) remained unchanged during isolation ($p > 0.05$). Current results showed that LFCs are less suitable when studying negative contexts such isolation from herd-mates, with just 4 out of 23 parameters being influenced by negative arousal.

Key words: animal behaviour, dairy cattle, stress biology, vocal communication, welfare assessment

40. THE IMPORTANCE FOR CONSERVATION OF THE ROMANIAN BUFFALO BREED

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Abstract
Approved as a breed in 1987, the Romanian buffalo is far for being a unitary or single population. The Romanian buffalo populations are scattered in territory and tends to gain new economic importance. The differences between the type bred in the Danube area and the type bred in Transilvania are difficult to be established and clear criteria for separation of the different types are not defined. The Romanian buffalo breed, reproductively isolated as a pure breed, is characterised by a clear uniformity in terms of morpho-productive traits resulted from the genetic consolidation actions applied to clearly define the breed. In order to preserve the important genetic resource, the productive potential and the valuable aptitudes of the breed, it is recommended to continue breeding Romanian buffalo in the actual geographic areas of distribution in order to preserve and develop the existing buffalo population as a valuable genetic heritage and biological resource.

Keywords: buffalo, conservation, genetic diversity, genetic heritage

41. EFFECTS OF SEMEN SEXING AGENT (HEIFER-PLUS™) IN DAIRY COW REPRODUCTION

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Abstract
This study was conducted to investigate the use cryopreserved bovine sperm treated with Heifer-Plus™ Prefreeze kit and its effect on pregnancy rates calf sex ratio embryonic death, abortion, stillbirth and twinning rates in Holstein Friesian cows A total of 120 Holstein Friesian cows were enrolled in this study. Sixty cows were artificially inseminated (AI) whit cryopreserved bovine sperm treated with Heifer-Plus™ PREFREEZE kit (experimental group; EG) and 60 cows served as control group (CG).
Findings showed that the AI of cows with bovine semen treated with Heifer Plus™ Prefreeze kit had slight increases in conception rate (5%) and in female and male ratio (18.5%). Use of cryopreserved bovine sperm treated with Heifer-Plus™ Prefreeze kit did not affected embryonic death, abortion, stillbirth and twinning ratios in Holstein Friesian cows. Further investigations are needed with larger numbers of tested dairy cows, which enable wide spread adoption of this technology.
Keywords: Heifer-Plus, artificial insemination, fetal sex, conception rate.

42. THE INFLUENCE OF MILK PRODUCTION ON REPRODUCTIVE INDICES IN COWS INSEMINATED WITH HEIFERPLUS SEMEN

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Abstract
More and more dairy cows with high milk producing are experiencing infertility problems caused by both negative postpartum energy balance and the inhibitory action of the hormone prolactin on the hormones GN-RH and FSH. The present paper analyzes the relationships between milk production and reproductive indicators in a population of dairy cows that were artificially inseminated with HeifferPlus semen. This semen, according to those who sell it, increases the percentage of fecundity by 5-15% and the sex ratio is 65-85% in favor of the calf with the predetermined desired sex. The work was carried out at the Balotesti Bovine Development Research Institute, on a herd of 50 heads, Romanian Black Spotted cows, owned by the institute. The analyzed data capture the farm's activity between years 2020 -2021. Milk production was monitored by the specialists who carry out the Official Control of Milk Production and the reproduction data were taken from the TAURINE.EXE farm program. The reproductive indicators monitored were: conception rate, services per conception, non-return rate, service period interval and sex ratio.
The statistical processing of the data was carried out using the Microsoft Excel program.

Keywords: Cow, milk production, reproduction, semen HeiferPlus.

43. INCLUDING NATURAL AND SYNTHETIC PGF2A IN A 11-DAY FGA-BASED ESTRUS SYNCHRONIZATION PROTOCOL IN SHEEP: AN EFFICACY COMPARISON OF DINOPROST AND CLOPROSTENOL

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Abstract
There are a variety of hormonal protocols and products on the market, but it is still unclear how they will work on specific field conditions. The efficacy of using different forms of prostaglandin F2α analogues such as dinoprost and cloprostenol in a FGA-based estrus synchronization protocol was compared in 60 multiparous Tsigai sheeps. For this purpose, on the basis of a completely randomized design, 60 ewes (Tsigai breed, Rusty variety; 2–4-years old, mean body score of 2.5 ± 0.5) were divided into two estrus

synchronization treatment groups, which included: fluorogestone acetate (FGA) sponges for 11 days, with the administration of an intramuscular injection of 5 mg of dinoprost on the ninth day, followed by 300 IU PMSG at the time of sponge withdrawal (FGA-D-PMSG group, n=30), and for the other group, the same synchronization protocol was followed, with the difference that instead of dinoprost, ewes received 75 µg of cloprostenol (FGA-C-PMSG group, n=30). The estrus response rate percentage (%ERR) ranged between 76.66% (FGA-C-PMSG group) and 93.33% (FGA-D-PMSG group). In this study, it is shown that the type of PGF2α (natural or synthetic) can influence the results of a 11-day FGA-PGF2α-PMSG synchronization protocol, in terms of occurrence of estrus behavior. Additionally, hormonal treatments cost for each protocol was calculated in order to determine the most cost-effective method and whether it can be implemented in small and large-scale sheep farming.

Keywords: FGA; ERR; PMSG; dinoprost; cloprostenol; synchronization; estrus; sheep

44. THE EFFECT OF BCS AND THE AGE OF HUNGARIAN MERINO EWES DURING PREGNANCY ON REPRODUCTION

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Abstract
In research, we looked for the answer to how the number of offspring is affected by the BCS of ewes at mating, during pregnancy and at lambing and the age of the ewes. We examined body condition scoring (on a 5-point scale) on 60 Hungarian Merino ewes from the beginning of the breeding season until lambing. The BCS values (2.29) of triple lambed ewes were significantly higher compared to the condition score of one- and two lambed ewes (1.55, 1.58). Two-year-old ewes gave birth to 1.84 offspring on average, this value only slightly decreased until 3-5 years of age. The number of offspring of 6-year-old animals was the highest (2.13). The old (7-8 years old) ewes gave birth to only one offspring, their condition was low both at fertilization (1.55) and at lambing (3.18) compared to those that gave birth to more. The average condition of ewes during pregnancy was significantly higher for animals that gave birth to two or three litters (2.12; 2.20) than for animals that gave birth to one (1.58).). In the relationship between body condition and number of offspring, there was a loose, positive correlation, both at fertilization (r= 0.206) and at lambing (r=0.265). In summary, we can declare that the ideal BCS at mating age condition is 3,5, for multiple twins and the ideal age for ewes is 2-6 years, in the case of Hungarian Merino ewes.

Keywords: ewes, BCS, mating, age, lambing, offspring number

45. ALTERNATIVE OPTIONS FOR MEASURING THE BODY TEMPERATURE OF PIGS IN ORDER TO RELIEVE STRESS AND REDUCE ENVIRONMENTAL IMPACT

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Abstract

Poultry and pig farming provide two important sources of domestic meat consumption. Pig breeding has not been an economically predictable sector of agriculture, and breeders often suffer financial losses. This has been exacerbated by the COVID-19 pandemic and the current war situation. For this reason, economical production has become even more important, a basic condition that can only appear in the most stress-free environment possible. An essential condition for the production of high-quality food raw materials is the supply of excellent fattening raw materials. However, heat stress during certain stages of pregnancy, especially in the first trimester, can significantly deteriorate the quality of these raw materials. Therefore, the development of alternative contact methods and stress-free temperature measurements will be crucial in the future. This will make the daily lives of workers easier, reduce the time spent measuring temperature, and alleviate stress for pigs. By mitigating stress levels, the potential for disease outbreaks and fatalities can be significantly reduced, thereby directly and indirectly contributing to the reduction of environmental impact and environmental protection.

Keywords: *heat stress, pig breeding, environment protection, environment impact, temperature, technology*

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46. THE SYNTHESIS POTENTIAL OF MILK IN BUFFALOES COWS FROM THE FĂGĂRAŞ AREA

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Abstract
Currently, approximately 20,000 buffaloes are raised in Romania, of which 11% are found in the Făgăraș area. The present study was carried out to estimate the capacity of milk synthesis by 205 buffaloes cows raised in this area, which achieved 1059 lactations, with the rank of lactations from 1 to 14, in an observation interval of 15 years, by determining the correlation between the indicators of milk production and reproduction (lactation duration, total amount of milk of a lactation, total amount of fat, total amount

of protein, interval between calvings and service period). The variability analysis shows a lack of homogeneity of the milk production and reproduction characteristics, regardless of the lactation rank, their average being moderately representative, except for the interval from calving to the fertile mount where the average is not representative. Reducing the variability of milk production and reproduction indicators can be achieved over time through management. Increasing the potential of milk production, in buffaloes cows, can be done through a simultaneous selection that takes into account the duration of lactation, the milk production from the control days and the service period. Based on the correlation between some measurable indicators of the synthesis potential of milk, the value of other characteristics of milk production can be predetermined.

Keywords: buffaloes cows, correlation, milk, lactation, reproduction, variability

47. OPTIMIZE THE REQUIREMENT OF PROTEIN AND ENERGY FOR SWINE – MATHEMATICAL MODEL

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Abstract
The paper presents a mathematical model to calculate the energy and protein requirements of the growing and fattening pigs. Traditionally, the energy and protein allowances are designed to produce as high as possible performance (we shall refer subsequently to the daily weight gain). Only few systems of assessing the energy and nutrient requirement offer the possibility to monitor carcass quality expressed mainly by the lipid to protein ratio. The purpose of this paper is to present a viewpoint on a possible solution for this aspect.
The model is used to develop a procedure for diet calculation.
Keywords: mathematical modelling, energy metabolism, protein metabolism, pig nutrition

48. ASSESSMENT OF THE VIABILITY OF CAT OOCYTES SUBJECTED TO STORAGE AT DIFFERENT TIME INTERVALS

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Abstract
The aim of this work was to investigate prolonged storage at 4˚ C on the survival of cat cumulus oocyte complexes. The ovaries were obtained from 20 domestic cats. The ovaries were evaluated at different time intervals. The viability test for cumulus oocyte complexes was performed at 2 hours, 24 hours and 72 hours after being sampled. Tests for the viability of cumulus oocyte complexes were performed with

Neutral red and Trypan blue. Storage conditions for cumulus oocyte complexes are a critical step in establishing fertility conservation protocols in animals, as well as for assisted reproduction.

Keywords: oocyte viability, neutral red, trypan blue

49. BIODIVERSITY OF INTESTINAL PARASITES IN DOMESTIC MOUNTAIN HORSES ON STARA PLANINA

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Abstract
The domestic mountain horse is an autochthonous breed of horse that originated in the Balkans, which, with the support of the fund for the protection of genetic resources, began to restore the population of this breed, primarily in the area of Stara Planina. Today, on the pastures of Stara planina, you can find a few hundred head of this breed, which are reared in the traditional way, in a semi-free housing system. Intestinal parasite tests were performed on domestic mountain horses in three separate pastures on Stara Planinina. In the first, a herd of 44 horses was observed (Izatovci), in the second a herd of 30 horses (Boljev Dol) and in the third a herd of 50 horses (Borovsko polje). All the horses were kept in a semi-free system on mountain pastures - during the day they were in pastures, moving freely in a space of several kilometers around the farm, only to be closed during the night due to the danger of wolves, usually in the same facilities with sheep, goats and cows. The diet was based exclusively on pasture. All horses were clinically healthy, in solid condition, which was at its best in early summer, when the grass was at its most lush. Fresh faeces samples were collected from the soil, immediately after defecation. For coprological diagnostics, sedimentation and flotation methods with a saturated solution of NaCl and ZnSO4 were used in parallel. The Clayton-Lane method was used to count parasite eggs. Identification of parasite eggs was done on the basis of morphometric characteristics. Based on the results of the examination, the following parasites were found: *Trichostrongylus axei* in 66.67%, *Strongylus edentatus* in 83.33%, and *Parascaris equorum*.33.33%. The key factors that influence the diversity and prevalence of certain types of parasites in domestic mountain horses are: the absence of planned control of endoparasites in the horse population, keeping horses in a semi-free system on infected pastures, in cohabitation with other types of animals, inadequate diagnostics and therapy with partial deworming, which does not include all animals in the herd, thus maintaining reservoirs of infection for other animals, as well as non-compliance with biosecurity measures when introducing newly acquired individuals into the herd.

Key words: domestic mountain horse, helminths, Stara Palnina, Serbia

The study was funded by the Serbian Ministry of Education, Science and Technological Development (Contract No No. 451-03-47/2023-01/200030).

50. EFFECTS OF DIETARY SUPPLEMENTATION OF HUMIC SUBSTANCES ON LAYING PERFORMANCE OF ORAVKA HENS

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Abstract
The aim of this study was to appraise the effect of humic substances (HS) on laying performance. In total, 20 Oravka hens were allocated to 4 treatments, each containing 5 birds. The control birds were fed a diet without additives (0.00% HS), other treatment birds were fed with diets containing HS at 0.50%, 0.75 and 1.00%. The birds in all treatments had available drinking water and feed mixtures ad libitum. The experimental period lasted 16 weeks. At the end of the experiment, the supplementations of HS had a significant effect ($P<0.05$) on egg production, egg mass, feed consumption and feed efficiency. There were no significant differences ($P>0.05$) among the experimental treatments with different HS concentration.

Key words: hen, laying, humic substances, egg production, feed efficiency

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51. EFFECTS OF DIETARY SUPPLEMENTATION OF HUMIC SUBSTANCES ON EXTERNAL AND INTERNAL EGG QUALITY OF ORAVKA HENS

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Abstract
The aim of this study was to appraise the effect of humic substances (HS) on external and internal egg quality of laying hens. In total, 20 Oravka hens were allocated to 4 treatments, each containing 5 birds. The control birds were fed a diet without additives (0.00% HS), other treatment birds were fed with diets containing HS at 0.50%, 0.75 and 1.00%. The birds in all groups had available drinking water and feed mixtures ad libitum. The experimental period lasted 16 weeks. Adding HS in different concentrations significantly increased ($P<0.05$) egg weight, albumen index, Haugh unit and yolk index and decreased yolk percentage ($P<0.05$), compared with control. There was no differences ($P>0.05$) in egg shape index, eggshell weight, eggshell percentage, eggshell thickness, albumen weight, albumen percentage, yolk weight and yolk colour among treatments.

Key words: hen, humic substances, egg, external quality, internal quality

This publication was supported by the Operational Programme Integrated Infrastructure within the project: Sustainable smart farming systems taking into account the future challenges 313011W112, cofinanced by the European Regional Development Fund.

52. ANTIMICROBIAL EFFECT OF OREGANO AND TEA TREE ESSENTIAL OILS AND PROBIOTICS IN BROILERS

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Abstract
An alternative to replace antibiotics in broilers is the essential oils that can be obtained from medicinal plants. To this are added probiotics that contribute to reducing the incidence of pathogenic microorganisms in the digestive tract, thus contributing to the improvement of their nutritional effect. The purpose of this paper was to establish the antimicrobial effect of oregano essential oil (OEO) and tea tree (TEO) and the probiotic in broilers. The experiment undertaken in this regard consisted in the

administration in the feed of broilers of OEO and TEO as well as of the probiotic as follows: in chickens from T0 combined feed without essential oils and probiotic, T1 was administered a combined feed with OEO 250 mg/kg combined feed, T2 TEO 250 mg/kg combined feed, T3 125 mg OEO and 125 mg TEO, T4 compound feed from T1 plus probiotic 500 mg/kg, T5 combined feed from T2 plus probiotic in chickens from T6 feed from T3 plus probiotic and T7 compound feed in which the probiotic was incorporated. At the age of 35 days, a number of 6 broilers from each experimental treatment were slaughtered, and cecal content was collected from each chicken. At the end of the experiment we established total germs counts (TGC) and the number of *E coli*. Following the statistical processing using the LSD test, it was found that in terms of *E coli*, the differences between the treatments were significant between the control group T0 and all the other experimental treatments ($p<0,05$) the addition of essential oils and probiotic determined the reduction of the number of E coli. Regarding TGC, the differences between the experimental treatments were insignificant ($p>0,05$). It can be concluded that the administration of the OEO and TEO as well as the probiotic determined the decrease of the number of *E coli.*

Keywords: broiler, OEO, TEO, probiotic, germs

53. COULD CAPONIZATION BE ONE SOLUTION TO SAVING NATIVE CHICKENS?

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Abstract
Nowadays, when hybrids dominate the production of animal products, the keeping of native animals, and thus the keeping of native chickens, is also in danger. In order to preserve our old varieties, it is necessary to find ways out that can save the given breeds. In the case of indigenous Hungarian chickens, there are many possibilities, but these must be found and brought to people's minds with appropriate marketing. Such an opportunity opens up in this area for the production of curio products. The production of capons creates an exclusive opportunity to bring our indigenous varieties to the market and to introduce their products to a wider circle. To this end, we have been capping and examining these products in terms of meat production and meat quality for years.

54. THE HIPPOTHERAPY HORSE IN ROMANIA

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Abstract
Hippotherapy is a form of physiotherapy that uses the motion of the walking horse to provide therapeutic movement to the rider. Generally, the hippotherapy involved a three-part factor squad for a normal basic interaction among an effective session: the horse, the horse trainer or handler and the therapist. This therapeutic horse riding involves teaching riding skills to people with very divers disabilities. To improve confidence and self-esteem as well as the physical benefits the rider will still get therapeutic benefits, but will be more actively riding the horse. Therapists are not able to provide high quality therapy using equine movement without the right horse. Horses who do not move freely do not provide quality input to the

patient, and will decrease the therapeutic benefits of incorporating equine movement into treatment. Overall, the horse plays a critical role by providing a unique and stimulating environment for individuals with disabilities or medical conditions to engage with. The horse's movement can help to improve balance, coordination, strength, and motor function, making hippotherapy an effective and enjoyable form of therapy for many patients. Choosing the right horse for therapy is the most important part of ensuring the success of hippotherapy sessions. Here are some factors to consider when selecting a horse for therapy: breed linked to conformation and constitution, temperament, type of gaits, balance and willingness, sex and background.

Key words: therapy horse, conformation, balance, equestrian background

55. EQUESTRIAN ACTIVITIES IN ROMANIA

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Abstract

The International Equestrian Federation (1921) is the global governing body of equestrian sports, and is responsible for the rules and organization of international equestrian competitions and is recognized by the International Olympic Committee as the sole governing body for equestrian sports worldwide. It is recognizing a number of eight disciplines: jumping, dressage, para dressage, eventing, driving, endurance, vaulting and reining. The affiliate local constitute, established in 1930, is the Romanian Equestrian Federation, that have registered six disciplines: jumping, dressage, eventing, driving, endurance and vaulting. The paper presents a short brief study on the existing disciplines and their part in the national championships, as well as their evolution.

Key words: jumping, dressage, eventing, driving, endurance, vaulting

56. DETERMINATION OF THE EFFECTS OF MYCLOBUTANIL ON THE ACTIVITY OF SOIL ENZYMES AND COMMUNITIES OF SOIL MICROORGANISMS

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Abstract

This study aims to assess the effects of myclobutanil on activities of soil catalase and protease using a spectrophotometric method, respectively to assess the effect of myclobutanil on the soil microorganism's community. This study was performed using the commercial product „SysthaneTM Forte" containing 240g/L myclobutanil. Experiments were performed on control soil sample (soil untreated with

myclobutanil) and soil samples treated with various doses of myclobutanil: the normal dose (D, 0.2 L/1000 kg), ½Dose (0.1 L/1000 kg), and 2xD (0.4 L/1000 kg). In the case of catalase, it was found that, regardless of the dose of the fungicide applied, the highest value of the catalase activity was recorded in the first day of the study and the lowest value was recorded on day 14 of the study, similar with the catalase activity recorded for the control sample. Concerning the protease activity, the results showed that there was a downward trend in all the values until the 21st day of the study. Starting from the 28th day, the activities of catalase and protease increased, probably due to the recovery of the population of soil microorganisms and the degradation of the fungicide. Application of myclobutanil did not severely affect the population of bacteria, there was a slight increase in the number of bacteria per gram of soil. The population of soil fungi seemed to be affected by myclobutanil as it recorded a steady decrease starting on day 7. The limiting conditions of the laboratory and the lack of a more selective medium made it difficult to acurately monitor the population of fungi.

Keywords: myclobutanil, catalase, protease, soil microorganisms.

57. ANTIMICROBIAL EFFECT OF A RECOMBINANT CHITINASE AGAINST DIFFERENT STRAINS OF BACTERIA AND FUNGI

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Abstract
Chitinases are glycoside hydrolases, enzymes that cleave the glycosidic bonds in chitin. Chitin is the structural polysaccharide in the exoskeleton of crustaceans, insects, and fungal cell walls. Chitinases are found in many organisms, such as bacteria, fungi, plants, and mammals, and play a role in cell wall plasticity, in the division of mother and daughter cells at the bud neck during vegetative growth in yeasts, in anti-infective defense and repair responses in plants and mammals. The defensive role of chitinases involves their action in organisms infected with pathogens that have chitin in their cell wall structure. In this study, chitinase A from *Bacillus licheniformis* DSM8785 expressed in *Pichia pastoris* KM71H was subjected to several tests to determine its antimicrobial effect against bacteria that do not have chitin in their cell walls: *Escherichia coli*, *Staphylococcus aureus*, and fungi, which have chitin in their cell walls: *Saccharomyces cerevisiae*, *Candida albicans*. The results showed that recombinant chitinase A inhibited bacterial growth starting at a concentration of 0.2 mg/mL. At the same concentration of the enzyme, fungal strains were unaffected, their growth being inhibited starting at a concentration of 0.8 mg/mL.
Keywords: antibacterial effect, antifungal effect, *Escherichia coli*, *Saccharomyces cerevisiae*.

Funding: This research was funded by the GRANT PNIII-P3-284, ChitoWound—Biotechnological tools implementation for new wound healing applications of byproducts from the crustacean seafood processing industry.

58. PRELIMINARY RESULTS REGARDING THE ANTIBACTERIAL EFFECT OF BIODEGRADABLE CHITOSAN-BASED FILMS

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Abstract
Polymeric matrices used for drug-delivery are an emerging tool for biomedical fields, especially when considering the slow release of different drugs. Chitosan is a versatile polymer often used as a matrix for delivering different antibacterial compounds. In this study, we investigated the physico-chemical properties and biodegradability of chitosan-based films as well as the effect of different chitosan-nisin films against Gram-positive and Gram-negative bacteria, correlated with the release of nisin from the polymeric matrix. The results obtained showed that chitosan-based films are o suitable matrix for the delivery of nisin, a polycationic antimicrobial peptide intensively used as food preservative, and more recently as an antimicrobial agent in wound healing applications. The mechanical properties of chitosan were enhanced by the addition of glycerol and all polymeric films proved to be biodegradable, losing almost their entire mass after 28 days. Nisin enhanced significantly the antibacterial and antibiofilm activity of chitosan and the effect was dependent on the concentration of the peptide.
The use of chitosan in biomedical applications offers a safer and environmentally friendly alternative for drug-delivery platform delivery and by the use of nisin, an antimicrobial peptide, we will overcome the main drawback represent by the use of conventional antibiotics, which is the rapid development of antibiotic resistance.
Keywords:. chitosan, nisin, polymeric films, antibacterial, biodegradable

59. STUDIES ON THE POSSIBLE ANTIMICROBIAL EFFECTS OF POLYFLORA HONEY

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Abstract
Antibiotic resistance is an increasingly common natural phenomenon in bacteria. Finding alternative methods of administering active biological compounds with antimicrobial properties is intensively studied scientifically. Honey is used both as food, and recently for therapeutic purposes, wound treatment due to its antimicrobial properties. The biological material tested was polyflora honey, produced in 2021 from an ecological apiary. The studies consisted of testing 5 concentrations of polyflora honey, on 5 standardized bacterial strains Gram+ *Staphylococcus aureus* ATCC - 25923, *Streptococcus pneumoniae* ATCC - 16903, *Streptococcus pyogenes* ATCC - 19615, respectively Gram - *Pseudomonas aeruginosa* ATCC - 27853, *Shigella flexneri* ATCC - 12022. The possible antimicrobial effect of honey was analyzed by the method of determining cell viability. The results obtained indicates the decrease of the antimicrobial effect of honey with the decrease of the tested concentration. The effect exerted by polyflora honey varies from bacteriostatic to bacteriolytic depending on the strain and the tested concentration. The obtained results support the use of honey as a potential antimicrobial alternative against bacterial diseases.

Keywords: honey, antimicrobial effect, bacteria,

60. THE BIOTECHNOLOGICAL POTENTIAL OF BEE VENOM: REVIEW

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Abstract
In many terrestrial ecosystems, the *Apis mellifera* species played an essential role, being one of the most beneficial insects worldwide. Bee venom (BV) has the role of protecting the bee colony from predators. Among the pharmacological activities of BV are: antibacterial, anti-inflammatory, anticancer, antimutagenic, radioprotective and even antiviral activity. The manifestation of the therapeutic potential is due to the bioactive compounds of BV, the main ones being melittin, phospholipase A2 and apamin, but hyaluronidase, mast cell degranulation peptide and secapin are also relevant for bioactivity.
The purpose of this paper is to highlight the biotechnological potential, but also the applicability in the medical field as alternative methods to the use of antibiotics.

Keywords: bee venom, biological properties, health applications

61. THE IMPACT OF PROBIOTIC FERMENTATION OF BEE POLLEN ON THE NUTRITIONAL AND ANTIOXIDANT PROPERTIES

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Abstract
Bee pollen has a high nutritional value, being a good source of protein, carbohydrates, lipids, fibres, but also bioactive compounds such as polyphenols, flavonoids, vitamins. All these make it the ideal medium to be used as a substrate for fermentation being considered by some authors probiotic and prebiotic (Zuluaga-Dominguez et al. 2019; Mora-Adames et al., 2021).
The aim of this study was to use lactic acid bacteria of bee pollen to obtain a product with high nutritional properties and with beneficial bacteria for bees' gut microbiota. Lactic acid bacteria were used for the fermentation process of the bee pollen.
Obtained results showed that there are significant differences between the chemical composition of the bee pollen samples before and after the fermentation process. Lactic fermentation increases the value of bioactive compounds, the total amount of polyphenols before fermentation was between 3.14-19.11 mg GAE /g sample and after fermentation it varied between 6.53 - 27.21 mg GAE/g sample. Also, the fermentation process had a positive effect on the antioxidant activity of the tested samples. Samples of fermented pollen had a higher antimicrobial effect against the tested bacterial strains.
Probiotic fermentation of bee pollen seems to increase the nutritional and biological value of bee pollen, but further studies are required to evaluate the bioavailability of the probiotic bacteria from the obtained product and its beneficial impact on bee's gut microbiota.
Keywords: bee pollen, fermentation, lactic acid bacteria
References:
1. Mora-Adames, W.I.; Fuenmayor, C.A.; Benavides-Martín, M.A.; Algecira-Enciso, N.A.; Quicazán, M.C. Bee Pollen as a Novel Substrate in Pilot-Scale Probiotic-Mediated Lactic Fermentation Processes. *LWT* **2021**, *141*, 110868, doi:10.1016/j.lwt.2021.110868.
3. Zuluaga-Dominguez, C.M.; Quicazan, M. Effect of Fermentation on Structural Characteristics and Bioactive Compounds of Bee-Pollen Based Food. *J. Apic. Sci.* **2019**, *63*, 209–222, doi:10.2478/jas-2019-0016.

62. COMPARATIVE STUDY ON PRODUCTIVE PERFORMANCE OF DOMESTIC RABBIT HYBRIDS IN DIFFERENT FEEDING SYSTEMS

Marioara Nicula –Neagu[1*], Ioan Peţ[1], Lavinia Ştef[1], Pătruică Silvia[1], Dorel Dronca[1], Mirela Ahmadi[1], Erina Silvia[1], Adela Marcu[1], Calin Julean[1], Iasmina Savescu[1]

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Abstract
The aim of our study was to establish the existence of differences, but also the size of the differences in terms of bioproductive indices during the birth-slaughter period and the meat quality of the F1 domestic rabbit hybrids obtained from ♀Californian x ♂ German Giant that were fed with two different rations after weaning: 1. commercial feed (20%) to which a concentrates mixture has been added, and 2. commercial feed exclusively.
Our findings were: a better growth rate recorded by F1 ♀Californianx ♂German Giant individuals belonging to group 2, during the period 1-60 days, which then decreases until 120 days of ages; the presence of significant differences regarding the average daily gain of the rabbits in the two groups during 1-60 days of life, in favor of those fed with pellets; lack of significant differences between the individuals of the two groups regarding the chemical meat composition and the commercial characteristics of the carcass; higher proportion of abdominal fat deposits in individuals fed exclusively with granulated feed.

Key words: bioproductive indices, feed, meat chemical composition, rabbits

63. FIFTEEN YEARS OF RESEARCH IN THE WESTERN PART OF ROMANIA, AIMED FOR DEVELOPMENT OF THE PIKEPERCH (*SANDER LUCIOPERCA*) FARMING IN RECIRCULATING AQUACULTURE SYSTEMS

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Abstract
The pikeperch (*Sander lucioperca*) is one of the most valuable species reared in fish farms in Romania, highly appreciated by consumers due to the excellent quality and taste of the meat. However, the pikeperch production in farms is low, this species being produced especially in polyculture in carp farms, and it cannot cover the market demand. Thus, the concerns related to the development of some technologies for farming pikeperch in intensive system were ever greater, and the University of Life Sciences from Timişoara (ULST) became the main pole in the western area of Romania that approached and deepened this subject. The first attempts to intensively rear this species in recirculating aquaculture

systems (RAS) began in ULST in the year 2008. Since then, several generations of pikeperch have been produced, which have gradually adapted better and better to the conditions from RAS, and the rearing technology has consistently evolved based on research carried out in university. The present paper presents the most important achievements of the researchers from ULST that led to the development of the technology of raising the pikeperch in RAS in the western area of Romania, of the biotechnologies applicable to this species and the possibilities of their application in practice.

Keywords: pikeperch farming, RAS, research, Romania

64. TESTING STOCKING DENSITIES IN NORTH AMERICAN STURGEON (*POLYODON SPATHULA*) CULTURE IN THE POST-EMBRYONIC DEVELOPMENT PERIOD

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Abstract
The paper presents the results obtained during the growth of the North American sturgeon *Polyodon spathula* during the period of post-embryonic development. Stugeon larvae aged 5 days old of *P. spathula* obtained by artificial reproduction at SCDP Nucet, were stocked and raised until the age of 30 days in two experimental variants: variant 1 (V1): 1000 ex/m^3, respectively 1500 ex/tank; variant 2 (V2): 2000 ex/m^3 respectively, 3000 ex/tank in 10 Ewos type fiberglass tanks (useful volume -1500 liters/tank). The water temperature during the experiments was between 17.0-22.5°C. In both experimental variants, the sturgeon fry were fed both zooplankton and artificial feed. The zooplankton administered came from specially prepared cultures. The technological indicators obtained at the end of the post-embryonic development period (30 days) were as follows: in variant 1 (V1) fry with an average mass of 6.95 g/ex were obtained (survival rate of 19.8 %) and in the variant 2 (V2) the fry recorded an average mass of 4.8 g/ex (survival rate 12.3 %). The differences recorded in survival between the two experimental growth variants were due to the fact that the adaptation to feeding with artificial feed became more difficult. Also, overcrowding causes typical manifestations that consist in the appearance of large differences between individuals that favor cannibalism.

Keywords: Ewos tanks, *Polyodon spathula*, stocking density, sturgeon larvae

65. THE IMPACT OF MYCOTIC CONTAMINATED FEED ON THE HEALTH OF PIGS AND ON THE HUMAN CONSUMER

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Abstract
Mycotoxins are produced by filamentous fungi (molds) that are always present in nature and under the right conditions, have the potential to contaminate almost all raw materials used in pig feed. Mycotoxins are not produced by a single species of mold, which means that different species can produce the same mycotoxins. Molds grow using nutrients from infested plants or raw materials they infest, reducing their nutrient value. However, the mycotoxins they produce pose a much greater risk to animals, with pigs being particularly susceptible to this contamination. Most regulatory standards set safe levels of individual mycotoxins. However, the rules do not take into account the cumulative effects of the presence of multiple mycotoxins in feed and the negative effects exerted by human consumption of meat from these animals. In the laboratory, determinations were made on the feed administered to the pigs that showed changes in the state of health, and two species of microscopic fungi were identified, namely Aspergillus and Penicillium. Knowing the negative influence of intoxication states on the health of animals as a result of the administration of moldy feed, the methods of their prevention are of major importance.

Key words: *micotoxins, fungi, contamination, intoxication*.

66. IMPACT OF COVID-19 ON THE MILK AND DAIRY MARKET IN ROMANIA AND OTHER EU COUNTRIES

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Abstract
The aim of studying the impact of COVID-19 on the milk and dairy market in Romania and other EU countries is to understand the effects of the pandemic on this industry and to analyse the changes and challenges it has faced, in Romania, compared to other countries in the European Union. The COVID-19 pandemic has had a significant impact on the milk and dairy market in Romania and other EU countries, disrupting supply chains, changing consumer demand, shifting distribution channels, posing export challenges, and raising health and safety concerns. The long-term effects of the pandemic on the milk and dairy market will depend on how the situation evolves and how the industry adapts to the changing landscape. The COVID-19 pandemic has caused a significant reduction in demand for milk and dairy products from the EU and non-EU countries. This represents a serious threat to the Romania and EU dairy sector and for the HoReCa market. It is estimated that the European dairy sector is currently losing EUR

120 million. This study provides a comprehensive analysis of the evolution of milk and dairy product prices in both Romania and other EU countries, using official statistics.

Keywords: covid-19, dairy products, evolution of prices, milk consumers, pandemic period

67. AVIAN INFLUENZA

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Abstract

Numerous diseases transmissible from animals to humans have been known since ancient times, but the Pasteurian period, which by far represented a turning point in the development of microbiology, is the hottest stage of accumulations, foundations and detections of the causality and pathogenesis of many of these. Humans can get sick through contact with a lot of viral, bacterial, parasitic and last but not least prion pathogens, pathogens that can be transmitted from animals to humans and vice versa.

Avian influenza is an infectious, contagious disease of an acute evolutionary type with an epizootic enzootic character, affecting numerous species of domestic and wild birds, clinically characterized by serious general disorders, accompanied by respiratory, digestive, nervous phenomena and an edema of the subcutaneous connective tissue from head and neck region, and morphopathologically through hemorrhagic lesions in various tissues and organs.

Avian influenza has been reported, with variable incidence, on all continents. At present it is spread in most European countries, America, Asia, Africa. It is of great economic importance due to its very high morbidity and mortality. Being a zoonosis, the cases of infection reported in humans are relatively few. Because the disease is underdiagnosed, and people do not notice the illness or mortality occurring in their livestock, the virus is very difficult to control.

The number of cases of infection increases in the spring and autumn due to the migrations that migratory birds perform. They either start the migration already infected, or become infected during the migration, in the stopovers where the disease develops. Infected birds do not manage to reach the end of the migration, the body being weakened due to the fight against the virus, they can no longer fly and end up dying in the territories of the free countries, leading to new outbreaks of Avian Influenza.

68. THE INFLUENCE OF SOIL PROPERTIES ON GRAIN PRODUCTION IN SPRING FORAGE PEA CROP

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Abstract
Forage pea (*Pisum arvense f. aestivale*), also known as field pea, is one of the important species cultivated in our country for the feed of several animal species, due to the remarkable content of the grains in proteins, calcium, vitamins, but also in other essential elements for animal nutrition. Also, together with oats, it forms the spring mash, which is well-known for its high fodder quality. The research carried out during three experimental years, in the climate and soil conditions of the Arad Plain, regarding the cultivation of spring forage pea, highlighted the importance of soil fertility, as well as the importance of the water from precipitation during winter and growth period. Among the three experimental years (2020, 2021 and 2022), the best results regarding grain production were recorded by the spring forage pea variety *Salamanca* with determined growth, in the year of 2021, on a cambic chernozem, low carbonate, medium loam/medium loam clay type of soil, when the grain production exceeded 4.800 kg/ha, STAS grains. The same genetic material (*Salamanca variety*), cultivated under identical technological conditions, on a weakly stagnoglazed vertosoil, medium loam clay/dusty-clay type of soil, achieved a significantly lower grain production, of less than 4.000 kg/ha. It is remarkable that, in the all three years of spring forage pea cultivation, the grain production obtained on the cambic chernozem type of soil exceeded, each time, the value of 4.000 kg/ha, while, in the case of the vertosoil, every year recorded a production below the value of 4.000 kg/ha, making soil fertility as one of the most determinant factors for production of this significant legume crop.
Key words: pea, variety, soil, production

69. THE INFLUENCE OF LAND FERTILIZATION WITH FERTILIZERS FROM ANIMAL MANURE ON HYDRIC SOIL EROSION

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Abstract
Plants in agricultural crops begin to develop rapidly in the spring and need the food supplement provided by fertilizers. Carrying out the basic fertilization is necessary together with the works for the preparation of the germinal bed in view of the spring sowing. On pastures, especially those that are to be used for both grazing and forage, it is also important to apply fertilizers in early spring. According to the Code of Good Agricultural Practices, starting from March 15, the spreading of solid organic fertilizers on arable land and pastures is also allowed. Liquid, semi-liquid and solid manures from animal farms as well as effluents from silos contain large amounts of nutrients. For this reason, the application of fertilizers derived from them have, in addition to the positive effects of increasing the fertility of the land and increasing the

organic matter content of the soil, and a very important negative one, namely the acceleration of the eutrophication of surface waters in the case of their penetration into the bodies of water, even small amounts of these substances.
The paper analyzes these aspects of soil fertilization with fertilizers from animal manure, respectively the influence of this process on hydric soil erosion on watersheed hillslopes. The Water Erosion Prediction Project program, developed by USDA-ARS, USA, was used for the soil loss study.

Key words: animal manure, soil erosion, soil loss, runoff, land fertilization.

70. TREATMENT OF WASTEWATERS FROM LIVESTOCK FARMS

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Abstract
Raw wastewater from livestock farms is a mixture of faeces, urine, bedding materials, water from washing and cannot be distributed on agricultural land in this state, and not discharged in natural emissions. That is why it is necessary to purify them, in order to retain and neutralize the harmful substances present in these wastewaters from animal farms, which are not accepted in the aquatic environment where the treated water is discharged and which allow the physical-chemical properties of the water to be restored before use.
The paper analyzes the importance of wastewater treatment from livestock farms, respectively the need to build efficient treatment plants. The possibility of using the advanced hydroinformatic tool WEST, developed by DHI Holland, is presented for the design, exploitation and optimization of the exploitation of such a treatment plant.

Key words: livestock farms, wastewater, treatment, water quality.

71. RECENT DEVELOPMENTS OF THE INTERNAL CREDIT IN ROMANIA

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Abstract
The article presents the structure of the Romanian banking system and the evolution of internal credit (governmental and non-governmental). Both aspects are analyzed from the point of view of their progress, retrospectively on the one hand, and potential systemic and macroeconomic risks on the other.
The banking system, through intermediation services, contributes to Romania's GDP (attracting deposits and placing loans), concretely by generating gross added value in the economy, its impact extending beyond economic aspects, as banks have an increased degree of responsibility towards the community.

Key words: internal credit, banking system, bank

72. IMPORTANCE OF THE FINANCIAL EDUCATION TO OBTAIN A POSITIVE ECONOMIC RETURN

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Abstract
It is important to have a financial education to be able to carefully plan and organize our personal budget, to have a savings plan, another for investments, so that we can make smart decisions to satisfy our needs and desires.
In this article I presented how through financial education, a mystery for many Romanians, we can improve our financial situation and significantly the quality of life.
Key words: financial education, money, savings, credits

73. MARKETING RESEARCH ON TRADITIONAL ROMANIAN PRODUCTS

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Abstract
Traditional foods represent an imprint of the past in the modern food supply, providing information on the main components of dietary behavior in each country's history.
In this context, the main objectives of the paper aim to identify the position of the traditional food sector in the supply of food products in Romania, in relation to both the productive environment and certification standards, as well as consumer requirements
Key Words: marketing research, traditional foods

74. CAREER COUNSELING AND ITS IMPORTANCE FOR YOUNG PEOPLE

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Abstract
The authors of this article aim to present a relatively new topic, namely career counseling for young people. Orientation and counseling of young people is a rather complex process of preparing and guiding pupils and students, depending on their interests and skills, towards certain forms of school or academic activity, which allows them to decide on certain professional fields. In order to advise a young person, it is necessary to know his personality very well, to educate him in order to choose a career, also to be

informed about the school network, the professions on the market and to guide him effectively. The implementation of a career counseling program at the level of educational institutions has a positive impact on the performance of young people, because the timely identification of career counseling needs can be the ideal solution for young people to find their purpose and happiness in the distant future.
Keywords: counseling, career, youngs, students, professions

75. ANALYSIS OF THE CURRENT VALUATION OF THE TOURIST POTENTIAL IN GORJ COUNTY

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Abstract
In this article we will present the natural and anthropic potential of Gorj county. The studied area has a diversified tourist potential which is represented by a picturesque natural setting, by monuments of architecture and art of great artistic value, some of them of international interest, but also by a valuable folklore and ethnographic heritage. The present paper aims to stimulate interest and draw attention to the existing tourist attractions in Gorj County and highlights the fact that tourism represents an important lever for the local development of urban and rural localities.

Keywords: tourism, Gorj county, natural and anthropic potential, tourist attractions

76. THE EFFECT OF SPECIFIC NUTRITIONAL FEED SUPPLEMENTS ON THE QUALITY OF DAIRY COWS PRODUCTS

Calin Julean[1], Lavinia Stef[1], Ioan Pet[1], Ducu Sandu Stef[1], Ion Valer Caraba[1], Voichita Gherasim[1], Nicolae Pacala[1], Eliza Simiz[1], Igori Balta[1], Nicole Corcionivoschi[1,2], Iulia Adelina Bundurus[1], Catalin Daniel Necula[1], Ahmad Sufyan[3], Ionela Hotea[1], Adela Marcu[1]

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Abstract
This experimental trial explored the impact of incorporating feed additives into the diet of dairy cows and assessed their influence on the quality of products derived from the processing of raw whole milk. A total of 20 dairy cows were equally distributed into two groups: the control group (CG) and the experimental group (EG). Both groups received balanced rations according to the INRA recommendations. The CG group received in diet a mixture of farm-produced feed concentrates (FC), while the EG received an FC including

the selected feed additives. Next, the milk from the two groups was processed into two varieties of semi-soft cheese (Caş and Telemea). According to the obtained results, it was observed that there were differences in dry matter, crude protein, crude fat, ash, and fatty acid profiles between the two groups for produced dairy products. Both cheeses fabricated from the milk of EG cows had a lower content of saturated fatty acids and a higher content of unsaturated fatty acids compared to the CG, where the situation was the opposite. The n:6/n:3 ratio was lower in the Caş cheese from the EG compared to CG, while in the Telemea cheese, the observations also revealed inverted results.

Keywords: Caş cheese, Telemea cheese, chemical composition, unsaturated fatty acids

Acknowledgements

Supporting grant: The present study is grounded in the findings derived from the project titled "Innovative Forage Preparation for the Enhancement Productive Performance, Reproductive Efficiency, Dairy Product Quality, and Decreasing of the Environmental Pollution in Dairy Cows Farms" (Ref. No. C16100000011853700002/19.07.2021), executed by the University of Life Sciences "King Mihai I" from Timisoara, with the generous financial support of the European Union and the Romanian Government under the National Rural Development Programme (NRDP), with the contracting authority being the Agency for Financing Rural Investments (AFIR).

77. ASSESEMENT OF COLOR ANALYSIS OF LONGISSIMUS DORSI MUSCLE IN AUBRAC BEEF: SURFACE AND CROSS-SECTION

Bianca Maria Madescu[1], Roxana Lazar[1], Ioana Bolohan[1], Diana Remina Manoliu[1], Bianca Georgiana Anchidin[1], Marius Mihai Ciobanu[2], Paul Corneliu Boişteanu[1]

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Abstract

The aim of this research was to analyze the color of the longissimus dorsi muscle, both on the surface and in cross-section, obtained from Aubrac cattle. The analysis was conducted over a period of 3 days, starting from day 0 with fresh meat, followed by analysis after 24 and 48 hours to observe color changes that occur over time. Meat color measurements involve two basic methods: human visual appraisal and instrumental analyses. The study was conducted using the Konica Minolta Chroma Meter CR-410, a reflection spectrocolorimeter that functions to measure the color of the sample in colorimetric scales such as L*a* b*. Regarding the luminosity of the meat, a value of 32.02 L*(C) was recorded, indicating a moderate level of brightness. The average value of approximately 10.39 a*(C) on the green-red axis suggests that the meat hue tends towards red. Additionally, the color intensity value on the blue-yellow axis was approximately 3.95 b*(C), leaning towards a yellow color. In summary, the accurate assessment of meat color using advanced instruments enhances our understanding of meat quality, enables product optimization, and facilitates troubleshooting of color-related issues, ultimately ensuring the delivery of high-quality meat products to consumers.

Keywords: beef, spectrocolorimeter, quality

78. ASSESSMENT OF THE NUTRITIONAL VALUE OF BEEF OBTAINED FROM AUBRAC RAISED IN A SEMI-INTENSIVE SYSTEM

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Abstract
The aim of this study was to assess the nutritional value and chemical composition of beef obtained from Aubrac cattle raised in a semi-intensive system. Samples of meat were collected from various muscle regions and analyzed to determine their physical and chemical properties, including protein, fat, water, and collagen content. The results showed that the meat from Aubrac cattle had a higher nutritive-biological value, as compared to other breeds of cattle. The protein content in all four regions of the meat was found to be approximately 21.6%, while the minimum fat content was 1.6% and the water content was aproximately 75%. These values may vary depending on factors such as breed, age, diet, and level of activity of the animal. The findings of this study suggest that the semi-intensive system used to raise Aubrac cattle can positively influence the quality of the meat. Overall, the results of this study suggest that Aubrac beef has a unique nutritional value and chemical composition, making it a desirable choice for consumers who are looking for high-quality, nutritious meat.
Keywords: beef, near-infrared spectroscopy, quality

79. CONTRIBUTION OF RURAL DEVELOPMENT TO THE ACHIEVEMENT OF SUSTAINABLE DEVELOPMENT OBJECTIVES. EMPIRICAL EVIDENCE AND RESEARCH METHOD IN DEFINING AND EVALUATING THE EXTENT OF RURAL DEVELOPMENT

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Abstract
Rural development needs to be regarded as an active driver of national development in countries with large rural populations. Increasing productivity in agriculture leverages labor and resources for other sectors while sustaining food supplies for urban areas. The experience of newly industrialized and emerging industrialized countries indicates a precedent for rural development, where an increase in agricultural productivity in rural areas leads to industrial as well as general development. For a better understanding of the phenomenon, I used a research method based on overlaying data from different sources of research and comparing, eventually, the degree of similarity. The purpose of this paper was to analyze the main features of the contribution of rural development to the achievement of sustainable development objectives. The main findings of the research showed us that a combined effort is needed to

harness the potential of rural populations and resources to ensure sustainable development overall and to achieve the SDGs in particular. This effort should be based on the principle of improving the lives and livelihoods of rural people and not be a technocratic exercise in economic, social, or environmental policy. Furthermore, economic instruments can also play an important role in promoting sustainable land management, but it is important to achieve growth in rural economies without sacrificing environmental sustainability. Moreover, the EU has a responsibility to promote sustainable land management. Subsidy programs could also be further developed to provide payments for ecosystem services and compensate farmers for their environmental impacts.

Keywords: Rural Development, Subsidy Programs, Sustainable Development

80. EDUCATION AS A PILLAR OF DEFINING HUMAN CAPITAL. IMPLICATIONS OF THE ACADEMIC ENVIRONMENT

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Abstract
In contemporary policy discussions on higher education, the idea that this environment is in danger of becoming isolated from the world, ignoring the wishes and needs of society at large, is a constant background. From a historical point of view, it is mostly true that the academic spectrum has been rather impermeable in both directions: the knowledge generated and transmitted within it was very little based on the outside world and less concerned with its application to the problems of the outside world. In the globalised world of the 21st century, this kind of impermeability is no longer possible. The expansion of higher education systems in all regions has brought new socio-economic groups into the educational environment, with a greater diversity of cultures, levels of academic preparation, and expectations. In order to gain a better insight into the topic, we used an examination approach by overlaying information from different sources of exploration and analyzing the level of comparability over time. This paper examined the main characteristics of education as a pillar for defining human capital and its effects on academia. The findings are explained in the conclusion section, but it is mandatory to specify one conclusion regarding the fact that the costs of academic expansion have also led to increased pressure from governments to justify state funding, a justification that is usually couched in terms of direct and measurable social and economic impact.

Keywords: Academic Ecosystem Management, Education, Human Capital

81. EVALUATION OF QUALITY OF YOGHURT PROCESSED FROM SOYMILK AND COW MILK

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Abstract
Cow milk and soymilk samples were processed at the National Animal Production Research Institute (NAPRI), Ahmadu Bello University, Zaria, Nigeria. The samples were used in investigating the shelf life of fresh and pasteurized milk, quality of yoghurt. Sensory evaluation was done on the yoghurt produced from the soymilk and cow milk using different flavours and included vanilla flavoured soymilk yoghurt (VFSMY), strawberry flavoured soymilk yoghurt (SFSMY), pineapple flavoured soymilk yoghurt (PFSMY), banana flavoured soymilk yoghurt (BFSMY) and unflavoured soymilk and cow milk yoghurt (UFSMY) & (UFCMY). There was no significant differences in the general acceptability of all the yoghurts, all the sensory properties have similar value of 3.33 except in their colour in the strawberry flavoured soymilk yoghurt which differ with 3.00 and aroma in an unflavoured soymilk yoghurt which differ with 3.44. However, inorder to know the significant differences in proximate composition of yoghurt made from soymilk and cow milk more days for storing soymilk yoghurt should be employed in order to determine if it would affect its proximate composition.
Keywords: cow milk, proximate, sensory, soy milk, yoghurt

82. CONDUCTING A TRANSIENT-STATE ANAEROBIC DIGESTION PROCESS AT START-UP PHASE OF A BIOGAS PLANT

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Abstract
In a biological start-up phase, caused by the opening of digesters for technical revisions, the biological process collapsed. The digesters from an on-farm biogas plant were incorectly fed during the start-up phase with high-organic contents feedstock, including high carbohydrate substrate (silage, milled cereals). As a result of this type of operation, the values of the essential parameters that indicating the equilibrium state of the microbiological and biochemical process have deteriorated. Samples were taken and analyzed in the laboratory. During a two-months period of monitoring and conducting the anaerobic digestion process, a steady state of the biotechnological was reached. Subsequently, mixture recipe for feeding the digesters after reaching the neutral pH and the maximum FOS/TAC value of 0.4, have been established

according to the materials available on the farm. Cow manure will constitute the main substrate with important microorganic input, this orgnic material being available in large quantities in biogas operator's own farm. Maize silage is available as the main substrate with high energy input. To increase economics of the process, it is recommended to feed the digester with residual raw materials, available in the area of the biogas plant operator.

Keywords: anaerobic digestion, biogas plant, start-up, transient-state process

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83. DISTRIBUTION OF FOOD LOSS AND FOOD WASTE OF THE MAIN FOOD CATEGORIES RELATED TO FOOD CHAIN

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Abstract
The purpose of this paper is to analyse the distribution of food loss and food waste of the main food categories related to the food supply chain respectively cereals, roots and tubers, oilseeds and pulses, fruits and vegetables, meat, fish and seafood and milk, in Europe including Russia, North America and Oceania, Industrialized Asia, Sub-Saharan Africa, North Africa, West and Central Asia and South and Southeast Asia. An estimated 30 % of the food produced globally for human sustenance is lost or squandered along the food supply chain. In the meantime, the global population is estimated to reach 9.1 billion by 2050, necessitating a 70% increase in food availability. A significant portion of this growth will occur in developing countries, where growing urban populations persist to create complex and lengthy food supply chains involving numerous actors, facing challenges for the delivery of secure, nutrient-rich, high-quality food.

Keywords: food loss, food waste, food supply chain, production.

84. FOOD LOSS IN ROMANIA COMPARATIVE WITH THE NEIGHBORING COUNTRIES

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Abstract
The article presents aspects of food loss concept in Romania and its neighboring countries, respectively Hungary, Serbia, Bulgaria, and Ukraine. Food waste and food loss are worldwide phenomenon. Minimizing food losses and waste plays an important role in a world where the number of people suffering from lack of food has been steadily increasing since 2014 and where daily enormous quantities of food that is consumable are lost and wasted day-to-day. Food waste and loss are detrimental to the sustainability of our food systems. When food happens to be lost and wasted, all the resources used for creating it, including water, land, energy, work, and capital, are also lost. The main important thing to underline is that in the analyzed countries, there are different categories of food that produce most of the food loss.

Keywords: food loss, food waste, consume, production

85. STUDY ON THE ECONOMIC IMPACT BROUGHT BY RURAL TOURISM IN THE WESTERN PART OF ROMANIA

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Abstract
Romanian rural tourism earns from more and more ground in preferences Romanian tourists, but also among to foreigners. If in the early years of after '90 rural tourism was preferred around the Holidays, now everything more tourists are interested in the experiences it offers form of tourism, in any period a of the year. Rural tourism is extreme of the tenderer, whether we refer to the hospitality specific to guesthouses, to the relaxation conditions and the services of leisure, gastronomy or the promotion of local crafts.

Keywords: Economic benefits, hospitality, rural tourism

86. THE CONTENT IN BIOACTIVE COMPOUNDS OF OIL BY-PRODUCTS

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Abstract
In the context of banning the use of antibiotics in farm animal feed, finding new nutritional strategies to alleviate the weaning disturbances in piglets is a current topic for both research and industry sector. In the last years, studies were focused on the including in the compound feeds of by-products rich in bioactive compounds with antimicrobial and anti-inflammatory activities. Among these by-products, those resulting from oil industry appear to be promising alternatives to the in-feed antibiotics. In this study, two oil by-products, grape seed meal, camelina meal and mixtures containing different rates of inclusion of these two meals were subjected to analytical characterization for the identification and quantification of their macro- and micro-constituents. Our results showed that the amount of crude protein was ranged between 10.53g/100g sample (grape seed meal) and 38.76g/100g sample (camelina meal). The percentage of fat was high in camelina meal (16.11%), and grape seed meal being rich in fiber (34.69%). Among the macro- and micro-elements, grape seed meal has the highest content of calcium and copper, while camelina meal has a high content of phosphorus, potassium, iron, manganese and zinc. The grape seed meal extract has the highest content in total polyphenols and the highest antioxidant activity. All analysed samples have a very high percentage (> 50%) of polyunsaturated fatty acids, PUFAs; meals and mixtures with a high camelina content are richer in omega-3 fatty acids; grape seed meal and mixtures based on a large amount of grape seed meal have a high content of omega-6 fatty acids. In conclusion, these oil by-products, through their content in compounds with anti-inflammatory and anti-oxidant activities, can be used in the combined feed recipes dedicated to piglets after weaning, as an alternative to the in-feed antibiotics.

Keywords: grape seed meal, camelina meal, polyphenols, PUFAs.

87. THE EFFECTS OF CHITOSAN, CHITOOLIGOSACCHARIDES AND DERIVATIVES ON AQUATIC ORGANISMS

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Abstract
The contamination of the aquatic environment with chitosan, chitooligosaccharides and derivatives is possible, potentially producing toxic effects on aquatic organisms, due to their production and use in numerous fields of application. In the present study, both an experimental approach and a computational approach were used for the assessment of the effects of chitosan, chitooligosaccharides and derivatives with different properties. For the experimental approach, *Lemna minor* was the target aquatic organisms, while for the computational approach, *Tetrahymena pyriformis*, *Daphnia magna* and fathead minnow were the target organisms. The *Lemna minor* EC_{50} values highlighted the higher toxicity of D-glucosamine, a "slightly toxic" chitooligosaccharide, in comparison with the other tested samples which were "practically

nontoxic". The results obtained in the experimental approach were in agreement with the results obtained in the computational approach. The predictions obtained using admetSAR2.0 emphasized that the analyzed chitooligosaccharides and derivatives were not toxic towards the three target organisms. The predictions obtained using ADMETLab2.0 showed that the lowest values obtained for the three target organisms were observed for totally acetylated chitooligosaccharides. The effects of the tested chitosan, chitooligosaccharides and derivatives were dependent on parameters such as molecular weight, deacetylation degree, acetylation pattern and solubility.

Keywords: chitosan, chitooligosaccharides, chitosan derivatives, ecotoxicity, common duckweed

88. THE GREY PARTRIDGE (PERDIX PERDIX L.) - THE INDICATOR OF THE SUSTAINABLE AGRICULTURE

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Abstract
Agricultural intensification has played an important role in the decline of biodiversity in farmland ecosystems. Habitat degradation has resulted in reduced edge effects. This has led to species loss, soil degradation, deflation and drying of arable land. Much of Europe is farmland, which has a significant impact on the continent's climate. Although the previous conditions cannot be fully restored, beetle banks, grasslands and hedgerows can be well integrated into the agricultural policy of the European Union. How do linear habitats affect the microclimate, biosphere and crops? An endemic farmland bird, the grey partridge (Perdix perdix) is an indicator of healthy farmland ecosystems. Their population has declined drastically in recent decades across Europe.

Keywords: agriculture, field margin, grey partridge, hedgerows, indicator, sustainability

89. APPLICATION OF DNA MICROARRAY TECHNOLOGY FOR ANALYSIS OF GENE EXPRESSION IN ANIMALS: AN OVERVIEW

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Abstract
DNA microarray technology is a powerful tool for quantifying gene expression in animals. It works by allowing researchers to simultaneously measure the expression levels of thousands of genes in a single experiment. This technology is based on the hybridization of labelled cDNA or RNA to a microarray, which is a small glass slide or a chip that contains thousands of DNA probes. Some applications of DNA microarray technology for the quantification of gene expression in animals are: gene expression profiling - DNA microarrays allow researchers to profile the expression levels of thousands of genes simultaneously, this technology being widely used to study gene expression in a wide range of organisms, including humans, mice, rats, and other animals; disease diagnosis - DNA microarrays can be used to diagnose diseases based on changes in gene expression patterns; drug discovery - DNA microarrays can be used to identify potential drug targets and to screen potential drug candidates, etc. This paper present newest and the most important studies of specific literature regard on DNA microarray technique. The aim of this review is to show that the DNA microarray technology is a powerful tool for quantifying gene expression in animals.
Keywords: animals, diagnosis, DNA chip, gene expression, microarray

90. ANALYSIS OF REPRODUCTIVE INDICATORS IN DAIRY COWS INSEMINATED WITH HEIFERPLUS FROZEN SEMEN

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More and more dairy cows are experiencing infertility problems caused by both the quality of the semen after thawing and the timing of artificial insemination. The present paper analyzes reproductive indicators in a population of dairy cows that were artificially inseminated with HeifferPlus semen. This semen, according to those who sell it, increases the percentage of fecundity by 5-15% and the sex ratio is 65-85% in favor of the calf with the predetermined desired sex. The work was carried out at the Balotesti Bovine Development Research Institute, on a herd of 50 heads, Romanian Black Spotted cows, owned by the institute. The analyzed data capture the farm's activity since 2020. The reproduction data were taken from the TAURINE.EXE farm program. The monitored reproductive indicators were: %fecundity, services per conception, service period interval, %fertility and sex ratio. From the analyzed data, an

increase in fecundity was found by 4.03% and the proportion of females obtained was 57.5%.The statistical processing of the data was carried out using the Microsoft Excel program.

Keywords: artificial insemination, cow, reproduction, semen HeiferPlus.

91. THE IMPACT OF KEY-FACTORS ON BIRDS PHYSIOLOGY, WELFARE AND HEALTHCARE IN POULTRY

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Abstract
The factors impacting on the homeostasis of birds, their welfare and health are interconnected, both internally (through nitrogen metabolism) and externally (through the released ammonia emissions), and are thus identified around the key element, nitrogen (N). From this biochemical element, a whole cycle is formed between the organism and the environment, exposing the natural link between living systems. The study describes and presents the most important factors: of organic origin, bacterial species and dietary dosage (*Lactobacillus* genus, *L. thamnosus*), (Chen F. et al., 2018), along with the birds' health and immune status. We need to further investigate why it is important that the sanitary and veterinary conditions for the application of proper prophylactic and biosecurity measures could make a difference to increase zootechnical performance, to generate clear data on probiotic methodology in poultry in order to support the modernization of the poultry industry.

Keywords: nitrogen, poultry, biosecurity

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