



International Science Group

ISG-KONF.COM

XV

**INTERNATIONAL SCIENTIFIC
AND PRACTICAL CONFERENCE**

**"TRENDS IN THE DEVELOPMENT OF PRACTICE AND
SCIENCE"**

Oslo, Norway

December 28-31, 2021

ISBN 978-1-68564-511-3

DOI 10.46299/ISG.2021.II.XV

TRENDS IN THE DEVELOPMENT OF PRACTICE AND SCIENCE

Abstracts of XV International Scientific and Practical Conference

Oslo, Norway
December 28 – 31, 2021

TABLE OF CONTENTS

AGRICULTURAL SCIENCES		
1.	Dudar I., Ohorodnyk N., Pavkovych S., Bahay T., Korpita H. PRODUCTIVITY OF GRASS MIXTURES DEPENDING ON THEIR COMPOSITION	13
2.	Polishchuk V., Polishchuk S., Ponomarenko N., Rol N. CORRECTION OF FREE RADICAL OXIDATION PROCESSES IN OSTRICH ORGANISM USING BIOGENIC STIMULANTS	16
3.	Леонтьук І.Б. ЕФЕКТИВНІСТЬ ЗАСТОСУВАННЯ ТЕХНОЛОГІЇ АБК ПРИ ВИРОЩУВАННІ ПШЕНИЦІ ОЗИМОЇ	19
ART HISTORY		
4.	Коваленко Ю.Б., Логінова Т.О. ІННОВАЦІЙНО-КОМПЛЕКСНИЙ ПІДХІД У ПІДГОТОВЦІ ФАХІВЦІВ АУДІОВІЗУАЛЬНОЇ СФЕРИ	22
BIOLOGICAL SCIENCES		
5.	Lysenko N., Pet'ko L. MASSACHUSETTS STATE TREE: THE STORY OF THE AMERICAN ELM	25
6.	Marat A. FLY ASH AS A FERTILIZER IN AGRICULTURE	46
7.	Moistsrapishvili K. ON THE STABILITY OF THE BALANCE OF AN UPRIGHT MEN AND WOMEN IN VARIOUS ANTROPOMETRICS	48
8.	Шарипбаева А.М., Камалова М.С. БИДАЙ ДАҚЫЛЫНЫҢ ӨНІМДІЛІГІНЕ ҚОҢЫР ЖӘНЕ САБАҚТЫ ТАТ АУРУЛАРЫНЫҢ ӘСЕРІ	56
CULTUROLOGY		
9.	Volovchuk V. THE APPLICATION OF SEVERAL IDEA GENERATION METHODS IN TRAINING TEAMS FOR PLAYING INTELLECTUAL GAMES	60

CORRECTION OF FREE RADICAL OXIDATION PROCESSES IN OSTRICH ORGANISM USING BIOGENIC STIMULANTS

Polishchuk Vitalii

Ph.D. in Agricultural Sciences, Associate Professor
Bila Tserkva National Agrarian University

Polishchuk Svitlana

Ph.D. in Agricultural Sciences, Associate Professor
Bila Tserkva National Agrarian University

Ponomarenko Nataliia

Ph.D. in Agricultural Sciences, Associate Professor
Bila Tserkva National Agrarian University

Rol Nataliia

Ph.D. in Agricultural Sciences, Assistant
Bila Tserkva National Agrarian University

Ukraine is one of the ten major exporters of agricultural products to the European Union. Given the accelerated transformation of the world economy, it is possible to expand the range of traditional agricultural products. The ever-increasing impact of livestock farming on the environment requires dramatic changes in the demand for meat products and alternative production systems. Ostrich farming is one of the most profitable industries in agribusiness. A wide range of ostrich products: meat, by-products, eggs, skin, feathers, have found application in different spheres of the national economy [1]. However, this type of poultry farming can be effective only if optimal feeding and housing conditions are ensured. Against the background of violations of the conditions of maintenance, feeding, transportation and other factors in the body of birds activated the processes of free-radical oxidation of lipids [2]. The use of biogenic stimulants normalizes the metabolic processes and increases the resistance of the body to the effects of endo- and exogenous factors [3].

The aim of the work was to study the effect of biogenic stimulants on indicators of lipid peroxidation (LPO) and functioning of antioxidant protection system in organism of ostriches.

Blood serum of 24-month-old ostriches (beginning of the period of oviposition) was the material for the study. Two groups were formed according to the principle of paired peers, five animals in each group. The first group was a control one (saline was injected intramuscularly); the second group was an experimental one, a biogenic preparation obtained from thymus tissues was injected. The preparation was injected

with an interval between injections of 14 days at a dose of 0.01 cm³ per 1 kg of body weight.

Intensity of LPO was determined by the content of diene conjugates, lipid hydroperoxide and TBA-active products according to the conventional methods. Functioning of antioxidant system was estimated by activity of enzymes: superoxide dismutase, catalase and ceruloplasmin content. The results were processed statistically using Student's t-criterion [4,5].

According to the results of studies, there was a decrease in the number of primary and secondary LPO products in the blood serum of ostrich experimental group, indicating a decrease in the intensity of free radical processes.

The content of TBA-active products in ostriches of experimental group was lower compared to the control group, also there was a 23.6% decrease in hydroperoxides. After the second drug administration, their amount in the blood serum of the 2nd group decreased by 27,6%. We also recorded a significant decrease in the content of active new conjugates in the blood serum of birds of the experimental group after a single injection of the drug «KAFI». At the same time, we observed an increase in the level of superoxide dismutase activity, which is 17.1 % higher than the control. Administration of the preparation increased the activity of catalase in the blood serum of ostriches in group 2 by 21.7%; in turn, repeated administration of the preparation caused the increase in the activity of catalase by 28.2% compared with the control. The content of ceruloplasmin increases, thus, when administering the thymus preparation, there is a tendency to the increase of its content (by 17,5% when administered once, and by 18,3% when administered twice) in the blood serum of the birds under study.

The results obtained testify to the stimulating effect of the biogenic stimulant on the antioxidant defense system. Thymus polypeptides included in the preparation, interacting with reactive oxygen species, intercept an unpaired electron [6]. As a result of the inclusion of these substances in the metabolic processes of active Oxygen, the biological activity of antioxidant defense enzymes is largely conditioned [7].

The use of biostimulant helps to increase the adaptive capacity of the organism in conditions of industrial ostrich breeding [8].

In particular, a decrease in the amount of primary and secondary LPO products (lipid hydroperoxides, TBA-active products and diene conjugates) is observed in the blood serum of birds of experimental groups. Also under the action of the thymus drug a significant increase in the activity of catalase and increase in ceruloplasmin in the blood was noted. Such changes are probably caused by the presence of polypeptides that can intercept electrons when interacting with reactive oxygen species.

References:

1. Horbańczuk, O. K., Józwik, A., Wyrwisz, J., Marchewka, J., Atanasov, A. G., & Wierzbicka, A. (2021). The Activity of Chosen Antioxidant Enzymes in Ostrich Meat in Relation to the Type of Packaging and Storage Time in Refrigeration. *Biomolecules*, 11(9), 1338.

2. Polishchuk, V. M., Tsekhmistrenko, S. I., Polishchuk, S. A., Ponomarenko, N. V., Rol, N. V., Cherniuk, S. V., ... & Fedoruk, N. M. (2020). Age-related characteristics of lipid peroxidation and antioxidant defense system of ostriches (*Struthio camelus domesticus*). *Ukrainian Journal of Ecology*, 10(1). P. 168-174.
3. Polishchuk, V. N., Tsekhmistrenko, S. I., & Polishchuk, S. A. (2020). Some biochemical indicators of lipid metabolism in the meat and yolk of black African ostrich eggs. . Current trends in the development of science and practice. Abstracts of XXI th international scientific and practical conference 2020 p., Haifa, Israel. P. 203-205. DOI:10.46299/ISG.2020.XXI.
4. Polishchuk V.M., Polishchuk S.A., Ponomarenko N.V. (2021). In vivo dynamics of lipid composition of ostrich blood. Modern development of breeding technologies. Innovative approaches in food technology: Mater. international scientific-expert conference. p. 8-10.
5. Weng, C., Deng, Z. Y., Zhang, N., Zou, Q., Fan, Y. W., Liu, R., . & Li. (2020). Lipid profiles of Chinese soft-shell turtle eggs (*Pelodiscus sinensis*). *Journal of Food Composition and Analysis*. P. 94103627.
6. Rol, N., Tsekhmistrenko, S., Vovkohon, A., Polishchuk, V., Polishchuk, S., Ponomarenko, N., & Fedorchenko, M. (2020). Peroxidation processes in the rabbit organism during postnatal ontogenesis. Innovative technologies of production and processing of animal products. *Journal of the Bila Tserkva National Agrarian University*, 1. C. 63-68.
7. Tsekhmistrenko, S. I., Bityutskyy, V. S., Tsekhmistrenko, O. S., Polishchuk, V. M., Polishchuk, S. A., Ponomarenko, N. V., ... & Spivak, M. Y. (2018). Enzyme-like activity of nanomaterials. *Regulatory Mechanisms in Biosystems*, 9(3). P. 469–476.
8. Burlaka, A., Tsybulin, A., Sidorik, E., Lukin, S., Polishuk, V., Tsehmistrenko, S., & Yakymenko, I. (2013). Overproduction of free radical species in embryonal cells exposed to low intensity radiofrequency radiation. *Experimental oncology*, 35(3), 219-225. 10.1111/asj.13148.