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# USE OF IMMUNO-CORRECTIVE AND BIOCIDAL DRUGS IN POULTRY DIETS

## ВИКОРИСТАННЯ ПРЕПАРАТІВ ІМУНО-КОРИГУВАЛЬНИХ ТА БІОЦИДНОЇ ДІЙ,В РАЦІОНАХ ПТИЦІ

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***Abstract.*** *The results of the study of immunocorrective and biocidal drugs that can be effectively used in poultry farming to optimize immune processes, enhance natural resistance and immunological reactivity in order to increase the productivity and resistance of poultry to diseases are presented. It was found that in experimental poultry, with the combined use of the symbiotic drug "Biomagn" with feed, the probiotic drug "Biozapin" by spraying and the biocide complex "Diolide" for the water supply system, disinfection "Biolide" in their presence contributes to better assimilation of feed and a gradual increase in the body weight of chickens, in relation to the control. The survival of poultry in all groups is 100%. When conducting a pathological-anatomical assessment of slaughtered broiler chickens of the COBB-500 cross, aged 42 days, control group I and II of the experimental groups, no deviations from physiological norms were found, all the studied organs retained their characteristic anatomical structure, physiologically developed according to age, their position was anatomically correct, and their integrity was preserved. The following pathological-anatomical diagnoses were identified: myocardial dystrophy, granular dystrophy of the liver, proventriculitis, catarrhal enteritis, involution of the bursa and thymus. Changes were detected in the heart muscle, chickens of the control group,*

***Key words:*** *lymphoid follicle, broiler chickens, hyperplasia, immunoreactivity, fermentation*

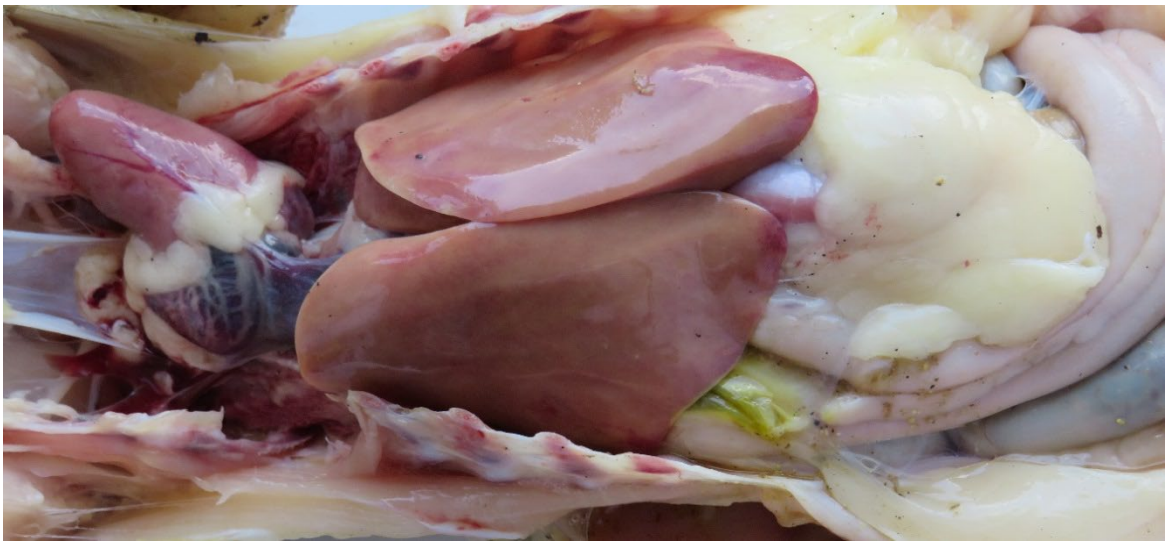
Analysis of the official market of veterinary disinfectants based on registration materials for veterinary medicine [5,7, 8]. In Ukraine, 161 disinfectants are offered for the poultry industry (94% of the number of registered ones). Among them, 58.1% are products presented by foreign manufacturers, however, a fairly wide range of products of the domestic pharmacological industry indicates the high potential of Ukrainian manufacturers of animal protection products. Of these, the largest percentage is the group of alkaline products (67.9%), biocides based on aldehydes

(mainly glutaraldehyde). The second largest group (12.4%) is formed by disinfectants based on quaternary ammonium compounds (QAC). The third group (11.1%) is formed by acid-containing disinfectants. The rest (8.6%) are chlorine-based biocides and agents based only on CHAS without aldehydes, as well as oxygen-, chlorine-, iodine- and silver-containing compounds. At the same time, due to the increasing introduction of disinfectants into practice, the problem of possible formation of bacterial resistance to them arises. It is known that the basis of the resistance of microorganisms to disinfectants is a genotypic mechanism, which is not yet sufficiently studied. [6].

It has been established that the nature of the formation of resistance of microorganisms to biocidal agents and antibiotics is different: in the first case - chromosomal, in the second - plasmid, which generally complicates the selection of disinfectants. Considering that the increase in resistance to some groups of disinfectants may be latent, it is necessary to periodically rotate disinfectants [2, 4, 6, 8].

It was found that in experimental poultry, when combined with the use of the symbiotic preparation "Biomagn" with feed, the probiotic "Biozapin" and the biocide complex "Diolide", "Biolide" contributes to better assimilation of feed and a gradual increase in the body weight of chickens, in relation to the control. Namely, the poultry of the 2nd experimental group already on the tenth day of growing exceeded the live weight of the peers of the control group by 0.054 kg or 15%. In the 1st experimental group at this stage of growing, the smallest live weight (0.355 kg) was observed in comparison with the control and second experimental groups. It should be noted that already on the 20th day of cultivation, the experimental groups, in the diet of which the symbiotic preparation "Biomagn" was fed, significantly differed in live weight: the first experimental group exceeded the control by 9.7% and the second experimental group by 12.9%. Since the introduction of the symbiotic preparation "Biomagn" into the diet was carried out from the 1st to the 7th day of cultivation, such a difference in live weight between the experimental and control groups indicates a high level of prolonging action of the specified preparation. [ 4 ]. This fact is confirmed by the difference in live weight and after the end of fattening the bird at 42 days (and the drug was received from the 22nd to the 27th day). The final live weight in the control group was 2.380 kg, in the first experimental group it was significantly higher by 0.350 kg ((14%) and in the second by 0.430 (18.1%). At the same time, the survival of the bird in all groups was 100%, which is probably a positive result of using the "Diolide" preparation for drinking the bird and disinfecting the premises for keeping the bird with the biocidal preparation "Biolide". [1,2 ]

After slaughtering the birds, a pathological examination and assessment of the condition of the organs and tissues of slaughtered chickens were performed, in accordance with RI.DNDILDVSE 7.2-7-01 “Conducting pathological autopsy of all species of animals and poultry and determining the causes of their death”, with subsequent selection of material for histological examination [1, 4 ], paying attention to the pathological characteristics of the following organs [2,6,7]:



The detected changes in the glandular stomach and small intestine are likely to have a mixed bacterial etiology, impaired digestive function and enzyme secretion causes the development of disorders of protein and lipid metabolism. Undigested food residues in the small intestine indicate insufficiency of the enzyme systems of the glandular stomach, pancreas and liver, the effect of bacterial toxins increases the negative effect on the liver, causes the accumulation of intermediate metabolic products and enhances the development of dystrophic changes in hepatocytes.

Macroscopic examination of chickens revealed early involution of immunocompetent organs - thymus and bursa. There are many etiological factors for the development of this condition, in particular, the dependence of the state of the organs on the factor of zinc absorption by the body of broiler chickens is described. Zinc deficiency can lead to impaired differentiation of T-lymphocytes and contribute to the development of immunosuppressive states. Early involution of immunocompetent organs can be a consequence of impaired digestive functions of the bird, due to the development of inflammatory processes in the glandular stomach and intestines [1].

When conducting a pathoanatomical assessment of slaughtered broiler chickens of the COBB-500 cross, aged 42 days, control group I and II of the experimental groups, no deviations from physiological norms were found, all the studied organs retained their characteristic anatomical structure, were physiologically developed in accordance with age, their position was anatomically correct, and their integrity was preserved.

**Conclusions**

1. As a result of the pathological assessment of slaughtered broiler chickens of the COBB-500 cross, aged 42 days, which were grown with the combined use of the symbiotic preparation "Biomagn" with feed, the probiotic "Biozapin" and the biocide complex "Diolide", "Biolide" contributes to better assimilation of feed and a gradual increase in the body weight of chickens, relative to the control.

2. When conducting a pathological anatomical assessment of slaughtered broiler chickens of the COBB-500 cross, aged 42 days, of the control group, it was found that all the studied organs retained their characteristic anatomical structure, were physiologically developed in accordance with their age, their position was

anatomically correct, and their integrity was preserved.

3. The following pathological and anatomical diagnoses were identified: myocardial dystrophy, granular liver dystrophy, proventriculitis, catarrhal enteritis, involution of the bursa and thymus gland.

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***Анотація.*** *Наведені результати дослідження препаратів імуно-коригувальних та біоцидної дій, які можна ефективно використовувати в умовах птахівничого господарства для оптимізації імунних процесів, посилення природної резистентності та імунологічної реактивності з метою підвищення продуктивності і стійкості птиці до захворювань. Встановлено, що у дослідної птиці за комбінованого застосування їм симбіотичного препарату «Біомагн» з кормом, пробіотичного засобу «Біозапін» шляхом розпилення і комплексу біоцидів «Діолайд» для системи водопостачання, дезінфекції «Біолайд» у їх присутності сприяє кращому засвоєнню комбікорму та поступовому збільшенню маси тіла курчат, по відношенню до контролю. Збереженість птиці у всіх групах 100 %. При проведенні патологоанатомічної оцінки забійних курчат-бройлерів кросу СОВВ-500, віком 42 дні контрольної групи I та II дослідних груп не встановлено відхилень від фізіологічних норм, всі досліджувані органи зберігала характерну анатомічну будову фізіологічно розвинені відповідно до віку, положення їх анатомічно правильне, цілісність збережена. Виявлено наступні паталого-анатомічні діагнози: міокардіодистрофія, зерниста дистрофія печінки, провентрикуліт, катаральний ентерит, інволюція бурси та вилочкової залози. Виявлені зміни у серцевому м'язі, курчат контрольної групи,*

***Ключові слова:*** *лімфоїдний фолікул, курчата-бройлери, гіперплазія, імунореактивність, ферментація.*