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EFFECTS OF ANXIOLYTICS ON THE ORGANISM OF BROILER CHICKENS

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Abstract:

According to the results of the experiments conducted in this article, 100 one-day-old chicks of the Ross-308 cross breed were separated and placed on the bedding in a small chicken coop of the university. Their live weights were measured and 4 groups of 25 were formed. The first group was a comparative control group, and the chicks were fed with pure feed without any drugs. The chicks of the second experimental group were given 3.5 mg/kg of the drug Nozepam, and the chicks of the third experimental group were given 0.5 ml/l of 10% Enroflox antibiotic in water. The chicks of the fourth experimental group were given 1 mg/2 liters of water with Aliceril WS for 30 days. On days 7-15 of the experiment, blood was taken from the subwing vein of the chicks to determine the biochemical parameters of the blood serum and the total protein content in the blood serum was examined by refractometry.

Keywords. Chick, nozepam, bacteriocide, lysozyme, resistance, drug, stress, Aliceril WS, enroflox, antistressor, hypothalamus, pituitary gland.

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Аннотация:

По результатам проведенных в данной статье экспериментов, 100 однодневных цыплят помеси Росс-308 были отделены и помещены на подстилку в небольшом курятнике университета. Была измерена их живая масса, и сформировано 4 группы по 25 цыплят. Первая группа была сравнительной контрольной группой, цыплята получали чистый корм без каких-либо лекарственных препаратов. Цыплятам второй экспериментальной группы давали 3,5 мг/кг препарата Нозепам, а цыплятам третьей экспериментальной группы — 0,5 мл/л 10% раствора антибиотика Энрофлокса в воде. Цыплятам четвертой экспериментальной группы давали 1 мг/2 литра воды с Алисерилом WS в течение 30 дней. На 7-15 дни эксперимента у цыплят брали кровь из подкрыльевой вены для определения биохимических параметров сыворотки крови, а также исследовали общее содержание белка в сыворотке крови методом рефрактометрии.

Ключевые слова. цыпленок, нозепам, бактерицид, лизозим, резистентность, лекарство, стресс, Алисерил WS, энрофлокс, антистрессовый препарат, гипоталамус, гипофиз.

Annotatsiya:

Ushbu maqolada o'tkazilgan tajribalar yakuniga ko'ra Ross-308 kross zotiga mansub bir kunlik jo'jalaridan 100 boshi ajratilib universitetning kichik tovuqxonasidagi to'shamalar ustiga joylashtirilgan. Ularning tirik vaznlari o'lchanib, 25 boshdan 4 ta guruh tashkil etilgan. Ulardan birinchi guruh qiyosiy nazorat guruhi bo'lib, jo'jalar preparatsiz toza ozuqa bilan boqildi. Ikkinchi tajriba guruh jo'jalariga esa nozepam preparatidan 3,5 mg/kg, uchinchi tajriba guruh jo'jalariga esa Enrofloks antibiotikidan 10% li 0,5 ml/l suv bilan. To'rtinchi tajriba guruhidagi jo'jalarga Aliseril WS 1 mg/2 litr suv bilan 30 kun davomida

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berildi. Tajribaning 7 – 15 kunlari qonning zardobi tarkibida biokimyoviy ko‘rsatkichlarini aniqlash maqsadida jo‘jalarning qanot osti venasidan qon olinib qon zardobidagi umumiy oqsil miqdori refraktometrik usulda tekshirildi.

Kalit so‘zlar. jo‘ja, nozepam, bakteriosid, lizosim, rezistentlik, preparat, stress, Aliseril WS, enrofloks, antistressor, gipotalamus, gipofiz.

Introduction

Introduction and relevance of the topic

Poultry farming, one of the leading branches of animal husbandry, is currently maintained in joint-stock companies, limited liability companies, peasant farmers and private subsidiary farms. At a time when the most purebred breeds of them are imported from foreign countries and kept in large numbers in limited areas, many of them die due to daily stress factors. Not only does the productivity of adult chickens decrease, but it also leads to a decrease in the body's resistance levels [1; 2; 3].

Stress affects blood pressure, heart rate, cardiac activity, blood supply to skeletal muscles, myocardial and cerebral blood flow (due to a decrease in blood supply to the gastrointestinal tract and kidneys), and increases the level of glucose and free fatty acids in the blood due to mobilization from liver and fat reserves. In this case, salt retention, an increase in circulating blood volume, and an increase in venous blood flow to the heart occur. In addition, blood clotting increases. Thus, in a state of stress, all the body's resources are mobilized.

Stress leads to activation of the hypothalamus, pituitary, adrenal glands, which, under the influence of the central nervous system, leads to a decrease in the production of adrenocorticotrophic hormone (ACTH), glucocorticoids (cortisol) and sex hormones [4; 5; 6].

Stress factors are a set of factors that affect the body from the external and internal environment, changing its physiological state. Stress factors vary in their origin,

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duration and strength, and can have a positive (eustress) or negative (distress) effect on the body. Various stress factors that occur in different conditions are used in livestock farms and traditional farms [7; 8].

Various pharmacological agents are widely used to prevent stress factors and reduce their negative effects on the body. These drugs exert their effect mainly by modulating the activity of the central nervous system, restoring the balance of neurotransmitters and enhancing the body's adaptive responses. In particular, anxiolytics, sedatives, antidepressants and adaptogenic drugs play an important role in normalizing physiological and biochemical changes that occur in response to stress [9; 10; 11].

Research methodology and methods. Scientific research was carried out in the vivarium and scientific laboratory of the Department of “Animal Physiology, Biochemistry and Pathological Physiology” of the Samarkand University of Veterinary Medicine, Animal Husbandry and Biotechnology. In this regard, 100 one-day-old chicks of the Ross-308 broiler breed were brought from the “Yosh Tegirmonchi” private farm in the Pstdargam district of the Samarkand region and placed on bedding in a small chicken coop of the university. Their live weight was measured and three groups of 25 were formed.

The first group of them was a comparative control group, and the chicks were fed with clean feed without any additives. The second experimental group of chicks was given 3.5 mg/kg of the drug Nozepam, the third group of chicks was given 0.5 ml/l of 10% Enroflox antibiotic with water, and the fourth experimental group of chicks was given 1 mg/2 liters of water with Aliseril WS for 30 days.

In order to determine the biochemical parameters of blood in the serum on days 7–15 of the experiment, blood was taken from the subwing vein of the chicks on days 7 and 15 of the experiment and the total protein content in the serum was examined by refractometry. The lysozyme activity of the serum was determined by the nephelometric method of V.G. Dorofeychuk (1968), and the bactericidal

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activity was determined by the methods of I.M. Karput (1993). The obtained figures were statistically processed according to the method of S.I. Lyutinsky [12; 13].

The results obtained and their analysis. The results of the laboratory experiments showed that on the 7th and 15th days of the experiment, when the chickens in the second experimental group were given the drug Nozepam 3.5 mg / kg of feed for 30 days, the bactericidal activity of the blood serum obtained was 15.0-16.9%, and the lysozyme activity was 10.2-11.2%, when the chickens in the third experimental group received the antibiotic Enroflox 10% for 5 days, the bactericidal activity of the blood serum was 13.2-15.1%, and the lysozyme activity was 5.9-6.0%, when the chickens in the fourth experimental group received the drug Aliseril 1 mg / 2 liters of water for 7-8 days, the bactericidal activity of the blood serum was 13.4-16.6%, and the lysozyme activity was 6.2-7.4%, compared to the blood of the chickens in the comparative control group. However, the total protein content in the blood serum of the chicks of the experimental groups did not differ significantly from the blood values of the chicks of the comparative control group. $P < 0.05$.

The data obtained are presented in the table below.

Table 1. The effect of drugs with tranquilizing properties on resistance indicators of chicken blood.

№	Group name	Quantity	Experience days					
			7- day			15- day		
			Total protein (g/l)	Bacteriocidal activity (%)	Lysozyme activity (%)	Total protein (g/l)	Bacteriocidal activity (%)	Lysozyme activity
1	Comparative control	—	23,5±1,25	33,5±2,40	14,55±1,71	24,0±1,22	34,21±2,47	16,72±3,02
2	Experience nozepam	3.5mg/kg feed	24,3±0,51	39,40±1,82	16,20±1,18	24,5±1,38	41,13±1,95	18,81±2,47
3	Experience enrofloks	0.5ml/l with water	24,0±0,37	38,58±1,50	15,45±1,20	24,0±1,20	40,25±2,00	17,75±3,21
4	Experience aliseril	1mg/2 liters of water	23,8±0,19	38,69±2,13	15,50±2,10	23,5±2,25	41,01±1,24	17,55±1,80

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The effectiveness of the anti-stressor drugs used was assessed based on the survival of the chicks and the average live weight of 1 chicken at the end of the experiment. The data obtained are presented in the first table.

Table 2. Effect of anti-stressor drugs on the growth and development of broiler chicks.

No	Group name	Name of the drug	Dosage	Number of chicks	Shelf life (%)	Average live weight gain per chicken (%)
1	Control group	-	-	15	87,7	454.8
2	Experience	Nozepam	30 days with 3.5 mg/kg feed	15	100	531.4
3	Experience	Enrofloks 10% li	7 days with 0.5ml/l water	15	100	528.4
4	Experience	Aliseril WS	1 mg/2 l of water – 7 days	15	100	528.5

Thus, the experiments and observations conducted showed that when the chicks in the control group were fed without anti-stressor drugs, the survival rate was 91.2% and the average increase in live weight per chicken was 454.8%. When the chicks in the second experimental group received the anti-stressor drug Nozepam according to the instructions, the survival rate was 100% and the average increase in live weight per chicken was 531.4%.

When 15 chicks in the third experimental group were given Enroflox 10% with 0.5 ml/l of water for 7 days, their survival rate was 100% and the average increase in live weight per chicken at the end of the experiment was 528.4%.

When the chicks of the fourth experimental group were given 1 mg/2 l of water for 5 days, their survival rate was 100%, and at the end of the experiment, their live weight gain was 528.5%.

The data obtained during the experiment showed that anti-stressor drugs not only increased the survival rate of chicks, but also had a positive effect on the percentage of live weight gain of each chicken.

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The non-specific resistance of the organism is considered to be a determinant of the complex of protective mechanisms, that is, the level of tissue and humoral reactions. In this regard, phagocytes perform the main function as immunological homeostasis. A decrease in the functions performed by polymorphonuclear phagocytes leads to a decrease in resistance to infections. In order to study the effect of the antistressors used in this regard on the leukocyte phagocytic activity and index, blood was taken from the subwing vein of chicks on days 7 and 15 of the experiment and determined in laboratory conditions. The data obtained are presented in Table 2.

Table 3. Effect of antistressor drugs on the phagocytic activity of leukocytes in the blood of chicks

№	Group name	7- day		15- day	
		Phagocytic activity %	Phagocytic index %	Phagocytic index %	Phagocytic index %
1	Control group	41,5± 1,3	3,00±0,050	42,0±1,3	3,02±0,11
2	Experience	44,5±1,1	3,02±0,034	44,1±1,7	3,03±0,10
3	Experience	44,6±1,6	3,01±0,025	44,05±1,5	3,02±0,02
4	Experience	44,6±1,0	3,00±0,52	43,6±1,1	3,03±0,09

Note: $x-P \leq 0.05$,

When blood was taken from the subwing vein of the chicks in the experimental group on the 7th and 15th days of the experiment and the phagocytic activity of leukocytes was examined, it was found that the phagocytic activity of leukocytes in the blood of all chicks increased by 2-3% compared to the blood indicators of the chicks in the comparative control group

However, the phagocytic index of leukocytes in the blood did not differ from the blood indicators of the chicks in the comparative control group.

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Conclusions

Analysis of laboratory experiments showed that all drugs used against stress factors have a positive effect on the resistance indicators of the chicks' organism.

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