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EFFECTIVENESS OF COCCIDIOSTATICS USED IN CHICKEN COCCIDIOSIS AND EFFECT ON MORPHOLOGICAL INDICATIONS OF BLOOD

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Abstract:

The article describes the coccidiostatics of Amprovet 25 in experimental coccidiosis of chickens and their conservation and application at the end of the experiment with per 1 percent increase in live weight of chickens on average, coccidiosis index, immunity against the disease, the spheres of influence on the invasion intensity and morphological parameters of the blood, as well as the leukocyte formula.

Keywords: Poultry, coccidiosis, immunity, invasive intensity, oocyst, coccidiostatics, erythrocytes, leukocytes, platelets, hemoglobin, leukocyte formula, trick weight gain and anti-coccidiosis index (ACI).

INTRODUCTION

Poultry breeding, one of the leading sectors of animal breeding, is now practiced by farmers and private subsistence farms, and one of the parasitic diseases, coccidiosis, is common and kills 50-80%. The rest are lagging behind in growth and development, losing live weight. As a result, it causes great economic damage to farms.

Fighting pathogens is a complex process that includes the followings:

1 - Chickens are parasitized by coccidiosis pathogens with several different immunological properties at once.

2 - The sensitivity of each type of oocyst to drugs used to prevent or treat soccidiosis also varies.

3 - The causative agents of coccidiosis are intensively multiplied in the intestinal mucosa of chickens. For example, a single egg of E.tenella multiplies in the chicken for 13-17 days to 88 million and infects the environment with feces.

4 - Pathogens live for many years in the environment. It has a strong resistance to disinfectants.

It is recommended to use two types of measures against coccidiosis. The first is to prevent chickens from being infected with oocysts from the environment, and the second is to take measures to control the pathogens that are developing in the body of the bird.

In view of the above, the effectiveness of Amprovet-25% and its combination with vitamin U against experimental chicken coccidiosis produced in the Republic of Uzbekistan against chicken coccidiosis was studied in areas of influence on the intensity of invasion and leukocyte count, immunity to the disease in the body, the morphological parameters of the blood.

As a result, chickens not only survived 98-100% of coccidiosis, but also increased their live weight.

LITERATURE REVIEW AND METHODOLOGY.

Today, about 2,000 coccidiostatics have been synthesized worldwide for the prevention and treatment of coccidiosis. However, in their production practice, when used continuously, there are cases of pathogens adaptation to the drugs used within 5-9 years. Therefore, it is advisable to replace them from time to time with

other drugs. However, many drugs affect the first stage of schizophrenic oocysts and are used continuously until 4-5 days before slaughter of broiler chickens.[2, 3, 6.]

Most coccidiostatics do not affect the body's immune system. For example: Boycox with 2.5% and toltrzil with 1 ml/l of water for 2 days has a complete protection against disease when given to birds.

Recently, polyester ionophore antibiotics have been used more and more against coccidiosis. Including: lasolacid, salinomycin, monenzin, narazin, maduromycin and others. Their main mechanism of action is high efficiency by negatively affecting the exchange of Na, K and Ca ions in the oocysts body.

Based on the above, we set the goal to determine the effectiveness of Amprovet-25 coccidiostatics produced in the Republic of Uzbekistan with vitamin U for the treatment of gastrointestinal ulcers in experimental coccidiosis in chickens.

For laboratory experiments, 100 1-day-old chickens of the "Lomann LSL Classic" breed were brought from the <<NARGIZA PARRANDA>> poultry farm and placed on a bed in the general chicken coop of the faculty. At 14 days of age, their live weights were weighed on normal scales and 5 groups were formed, each with 20 heads placed separately.

The first of them was a comparative control group of chickens, which were fed without a simple drug until the end of the experiment.

The chickens in the second comparatively untreated control group were weighed at 20 normal live weights and injected with 1 ml of UD50-75 sporulated oocysts through a syringe probe into each herd and fed with clean feed until the end of the experiment.

The live weights of the chickens in the third experimental group were measured and fed with 500 mg/kg of Amprovet-25 coccidiostatic for 8–10 days after infection with soccidiosis pathogens, experimental group 4 chickens were also weighed on normal scales and then infested with soccidiosis pathogens and suddenly Amprovet 25, U-vitamin 500-4mg / kg in combination with food was given for 8-10 days. Experimental group 5 chickens were also infested with soccidiosis pathogens and were given rigecoxin 125 mg/kg food for 20 days. On day 21 of the experiment, chickens in all groups were first infected with sporulated oocyte species with a syringe probe in a dose of 2 UD_{100} to determine the immunity effects on the disease in the body.

To determine the effectiveness of coccidiostatics against the disease pre-experimental and post-experimental live weight changes and survival rates and the anti-coccidiosis index (ACI) were taken into account, and improved methods by D.V. Porter and S.A. Johnson, M.V. Krylov were used to determine these indicators. [10]

The infestation intensity was determined on the 5th, 7th, 10th, 15th and 20th days of the experiment after the chickens were infected with the pathogen in accordance with SS 25383-82 (ST SEV 2547-80) "Methods for laboratory diagnosis of coccidiosis" manual.

Changes in blood morphology and leukocyte count on days 5, 7, 10, 15, and 20 of the experiment after chickens were infected with the causative agent of coccidiosis the number of erythrocytes, leukocytes and platelets in 1 mm^3 of blood was taken from the axillary vein and counted in Goryayev counting network by staining with Romanov Gimza and methylvialent dyes by the methods of I.A. Boltnikov, Y.V. Solovyov. [7]

The amount of hemoglobin in the blood was determined by the method of hemoglobin cyanide (with acitonsianhydrin) on the instrument KFK-2 (I.P. Chondraxin et al.) [9]

Leukocytes in the blood smear were stained by Pappenheim and the leukocyte formula was determined by the methods of I.A. Boltnikov, Y.V. Solovyov. [7]

The figures obtained during the experiment were analyzed by S.I. Lyutinsky, V.S. Stepin. The validity degree between the numbers was determined according to the Student table $P < 0.05$. [8]

RESULTS.

Laboratory experiments were carried out in a small chicken coop of Samarkand veterinary medicine institute, as well as in the scientific laboratory of the department. In this regard, 100 chickens of the "Lomann LSL Classic" breed were brought from the "Nargiza Parranda" poultry farm and placed on the beds as a common flock. At 14 days of age, live weights were measured from 20 heads on normal scales (difference in live weight +-5 g) and 5 groups were formed by analogy. In particular, the 1st comparatively clean control group was fed a drug-free diet until the end of the experiment. Chickens of the 2nd infected untreated comparative control group were first inoculated with 1 ml of UD_{50-75} titrated (E. Aservulina -200000, E. Maxima-20. 000 and E.tenella-50000 thousand in 1 mm^3 suspension), sporulated oocysts through a syringe probe and fed with pure drug-free feed until the end of the experiment.

With experimental group 3 chickens infested, amprovet 25 was added to the diet at a dose of 500 mg/kg for 10 days according to the instructions. Chickens in the 4th experimental group were also given amprovet 25 and S-methylmethionine (vitamin U) at a ratio of 500-4 mg/kg for 10 days after infection. The chickens in experiment group 5 were given 125 mg/kg of Rigekoxin in the diet until the end of the experiment.

Experience and observations have shown that based on the guidelines for chickens in the experimental groups, along with Amprovet-25 and its vitamin U-supplement for 10 days and when regikoxin is administered with food until the end of the experiment, without clinical signs of the disease until the end of the experiment the response to external stimuli is high, the level of conservation is 100%, the increase in live weight of one chick is 185.0, 189.0, 181.0%, the ACI increased by 191.5, 194.0 and 189.0 points, respectively. Clinical signs of coccidiosis were observed in the 2nd comparatively untreated control group from day 4 of the experiment, including: the chicks

are gathered together, the mucous membranes of the eyes are hung with the wings hanging down, and the area around the posterior outlet is contaminated. The stool was a slightly reddish liquid mixed with blood, and he often drank water because he was thirsty and refused food.

The effects of the drugs used on the immune system against coccidiosis in chickens were studied. In this regard, on the 21st day of the laboratory experiment, oocysts infected for the first time were re-infected with spores of oocysts at a dose of 2O'D_{100} and by day 8, the survival rate of chickens in the first comparatively clean control group was 35.0%, and the survival rate of chickens in groups 2-3-4 received according to the amprovet-25 guideline was 100%.

The survival rate of chickens in the fifth experimental group was 58%. When concluded based on the results obtained from the experiment of the drugs tested for chicken soccidiosis, Amprovet-25 and Amprovet 25+ U vitamin preparations were 100% preserved without affecting the immunity formed in the body of the chickens against the disease. However, the survival rate of chickens treated with rigecoxin was 58.0%.

In view of the above, in order to study the effect of Amprovet-25 and its combination with vitamin U as well as rigecoxin on invasive intensity, the effects on oocyte reproduction were determined on days 5, 7, 10, 15 and 20 of the experiment.

Thus, the maximum intensity of the invasion was observed in the feces of infected and untreated comparative control group (2nd) chickens on the 5th day of the experiment 810 thousand, on the 7th day 1,849 thousand, on the 10th day 268 thousand, on the 15th day 51 thousand and on the 20th day 5 thousand oocysts were separated by 1 g of feces.

When the chickens in the experimental group received Amprovet-25 with 500 mg/kg of food (Group 3) on the 5th day of the observation, 308,000, on the 7th day, 412,000, on day 10, 68,000, on the 15th day, 3,000, and on the 20th day, 2,000 oocysts were separated with 1 g of feces. When chickens in the 4th experimental group received 500-4 mg/kg of feed in combination with Amprovet-25 and vitamin U on day 5 of the experiment, 301,000, on day 7, 406,000, on day 10, 56,000, on day 15, 3,000, and on day 20, 1,000 oocysts with 1 g of feces were isolated.

The 5 experimental group of chicks received rigecoxin at 125 mg/kg of food for 20 days on the 5th day of the experiment 218 thousand, on the 7th day 326 thousand, on the 10th day 30 thousand, on the 15th day 2 thousand and on the 20th day 1 thousand oocysts were separated with 1 g of feces.

In conclusion from the results of the obtained laboratory experiments, the greatest oocyte reproduction was observed in the chickens feces of the 2nd comparatively infected untreated group on days 5-7 of the experiment.

The coccidiostatics used reduced the invasion intensity by 4-5 times.

One of the clinical signs of coccidiosis is a decrease in the number of erythrocytes and hemoglobin in the blood. I.D.Omarov (1991).

So the next lab is in the experiment during experimental coccidiosis of chickens, the effects of Amprovet-25 and its U-vitamin rigecoxin on the 5th, 7th, 10th, 15th, and 20th days of the experiment were studied by drawing blood from the chick's venous vein.

During the experiment, the morphological parameters of the chickens blood in groups of chickens infected with mixed strains of soccidiosis at a dose of UD50-75 in terms of quantity and quality did not differ from the morphological parameters of leukocytes and leukocyte formula. $P < 0,05$.

Qonning morfologik va leykositar formulasidagi o'zgarishlar asosan 2-chi qiyosiy yuqtirilib davolanmagan nazorat guruhi jo'jalari qonida kuzatildi.

On day 5 of the experiment, the number of erythrocytes in 1 mm3 of blood decreased by 26.4%, the amount of hemoglobin by 27.1%, and the number of platelets by 23.1% compared to the blood of purebred control chickens. In the leukocyte formula, lymphocytes decreased by 17.1%, eosinophils by 39.2%, pseudoeosinophils by 40.9%, and monocytes by 32.5% compared to the blood counts of comparatively pure control group chickens.

By day 7 of the laboratory experiment, the number of erythrocytes decreased by 48.2%, hemoglobin by 45.3%, and leukocytes increased by 19.1% compared to the blood counts of pure control group chickens.

In the leukocyte formula, the number of lymphocytes decreased by 31.5%, while eosinophils increased by 46.5%, pseudoeosinophils by 61.5%, and monocytes by 54.1% compared with the blood counts of chickens in the comparatively pure control group.

By day 10 of the experiment, the erythrocyte count did not differ from the mine performance of pure control group chickens $R>0.05$. However, hemoglobin levels decreased by 15.1% and platelet counts by 33.0%. The number of leukocytes increased by 45.4%.

The number of eosinophils in the blood smear did not differ from the blood counts of chickens in the pure control group. The number of pseudoeosinophils increased by 41.1%, monocytes by 61.1%, and the number of lymphocytes decreased by 18.1% compared to the blood counts of pure control group chickens.

By the 15th day of the laboratory experiment, the leukocyte count had increased by 13.4% compared to the blood levels of the chickens in the pure comparative control group, but the remaining values had returned to normal.

In the leukocyte formula, the number of pseudoeosinophils increased by 11.3% compared to the blood of pure control group chickens, monocytes increased by 29.0%, and the number of lymphocytes decreased by 8.3%.

By the 20th day of the experiment, the morphological parameters of the blood and the leukocyte count did not differ from the blood values of the chickens in the comparatively pure control group. $P <0,05$

When analyzing data from laboratory experiments, it was found that coccidiostatics used did not adversely affect the morphological parameters of chicken blood and leukocyte count.

DISCUSSION.

Various coccidiostatics have been used to prevent coccidiosis in birds. But they do affect different stages of the parasite.

Taking into account the relevance of scientific research in this area when using Amprovet 25 premix coccidiostatic produced in the Republic of Uzbekistan in combination with vitamin U and Regicoxin in experimental coccidiosis in chickens increased their survival rates by 100%, by an average of 1 head of live weight gain per hen at the end of the experiment by 182.0–178.0%, and by an anti-soccidiosis index of 191.0–189.0. It did not adversely affect the body's immune system against the disease. However, when chickens in the regicoxin-treated group were re-infected with the pathogen, the survival rate was 58%. The drugs used reduced the intensity of the invasion by 5-6 times and did not adversely affect the morphological parameters of the blood and leukocyte count. All the results obtained during the experiment are consistent with the results obtained from the experiments conducted. [1,4,6.]

CONCLUSION:

Laboratory experiments have shown that according to the guidelines of the chickens in the experimental groups, Amprovet-25 and its combination with vitamin U for 10 days and regikoxin when administered with food until the end of the experiment, the survival rate without clinical signs of the disease was 100%, the average live weight gain per hen was 185.0, 189.0, 181.0%, and the ACI increased by 191.5, 194.0 and 189.0 points and they were 100% preserved without affecting the immunity that develops in the body against coccidiosis. However, the survival rate of chickens treated with rigecoxin was 58.0%, which reduced the intensity of the invasion by 5-6 times, and did not adversely affect the morphological parameters of the blood.

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