The Effect of Chlorella Suspension on Morphological and Biochemical Blood Parameters of Broiler Chickens

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Abstract: The scientific article found that the suspension of chlorella has an effective effect on the morphological and biochemical parameters of the blood of broiler chickens.

Keywords: Chlorella, suspension, premix 1.5%, diet, morphological, biochemical, percentage.

The relevance of the topic. Today, poultry farming occupies one of the main places in providing the world's population with food. The data show that poultry accounts for 50 percent of the total volume of meat products produced worldwide. Poultry meat is rich in nutrients necessary for human consumption, easy digestibility and high quality in the body, as well as a unique taste1.

One of the main problems hindering the effective industrial development of this industry on a global scale, an increase in the number of poultry and higher quality indicators of the products obtained from them, is the lack of essential nutrients, mineral and natural biologically active substances contained in their feeds. The lack of a sufficient amount of nutritious feed needed by the poultry body in combination with a decrease in productivity also affects the quality of products.

In order to ensure environmentally friendly and high-quality poultry products and ensure food security of the population of the republic, it is of great scientific and practical importance to study and put into practice the use of natural chlorella suspension in poultry farming as a biologically active substance and the features of its specific effect on the overall activity of the body and product quality indicators.

Object and methods of place research. Our scientific research was carried out on 75 heads of broiler chickens of the Ross-308 breed, owned by Dargom parranda fayz LLC, specializing in poultry farming, in the Pastdargom district of the Samarkand region.

The blood of broiler chickens was taken as an object of research. Morphological and biochemical parameters of blood were determined using a special biobase hemoanalyzer. Broiler chickens of the first experimental group of 25 heads were fed 1.5% premix on the feed ration, broiler chickens of the second experimental group of 25 heads on the feed ration with chlorella suspension, and the control group was fed on the basis of a farmer's diet.

Analysis of the results obtained. Blood tests conducted 14 days after the start of the experiment showed that morphological blood parameters of broiler chickens in the first experimental group, which received 1.5% premix in addition to the daily feed ration, compared with the control group, had erythrocytes by 4.5% ($R<0.05$), leukocytes by 3.5% ($R<0.05$), and the hemoglobin content increased by 9% ($R<0.050.05$). Also, in chickens of the second experimental group receiving chlorella suspension as a feed additive, the number of red blood cells increased by 9.96% ($R<0.05$),

white blood cells increased by 1.1% (R<0.05) compared to the control group, and hemoglobin increased by 14.8% (R<0.05).

If we see the same indicators compared to the first and second experimental groups, the group receiving 1.5% premix increased the number of erythrocytes by 10% (R<0.05) in chickens receiving chlorella suspension, compared with the morphological parameters of the chickens' blood, leukocytes decreased by 2.4% (R<0.05), and hemoglobin decreased by 5.3% (R<0.05) increased.

When these blood counts were also monitored for 28 days of the experiment, the number of red blood cells increased by 12.5% (R<0.05) in the chickens of the first experiment compared to the control chickens, while the number of white blood cells decreased by 5.4% (R<0.05), and the amount of hemoglobin increased by 17.5% (R<0.05).

Morphological blood parameters of broiler chickens in the experimental control group (x ± CX)

Table 1

S/n	Indications	Groups		
		Control	1 experiment	2 experiment
chicks are 14 days old				
1	l			
2	l		1 7	2 6
3	g 1	1 0	1 1	1 2
chicks are 28 days old				
1	l	2 0	6 0	7 2
2	l	2 7	2 ,	2 6
3	g 1	1 0	1 1	1 1

Compared with the morphological parameters of the blood of chickens in the control group, the number of erythrocytes increased by 16.25% (R<0.05) in chickens of the second experimental group receiving chlorella suspension, while the number of leukocytes decreased by 3.24% (R<0.05), and the amount of hemoglobin increased by 19.2% (R<0.05).

Compared with the blood of chickens receiving a similar 1.5% premix, the number of erythrocytes increased by 3.33% (R< 0.05), leukocytes by 2.3% (R< 0.05) and hemoglobin by 1.45% (R< 0.05) when taking chlorella suspension.

Analysis of the data obtained showed that the addition of chlorella suspension to the diet of broiler chickens has an effective effect on the morphological parameters of their blood.

Analysis of biochemical parameters of blood of broiler chickens (Table.2) in chickens of experimental group 1, which had premix added to the feed ration for 14 days, the total protein increased by 14.6% compared to the control ones, albumin and globulins respectively by 13.5-26%, glucose by 3.7%, calcium by 5.8% and phosphorus by 3%. Similarly, biochemical parameters of chicken deposits in the second experimental group, which received chlorella suspension for feed rations for 14 days, showed an increase in total protein by 43.5%, albumin and globulins by 32.8 and 62.6%, respectively, and glucose by 5%, calcium and phosphorus by 9.8 and 4.5%, respectively.

By 28 days of the experiment, these values were increased in group 1 chickens receiving 1.5% premix compared to the control group: total protein increased by 9.7%, albumin increased by 15.4%, globulins increased by 20.4%, glucose increased by 10.3%, calcium increased by 10.5%, and phosphorus- by 21.1%.

Also during this period, the chickens of 2 experimental groups who received chlorella suspension in addition to their feed, the total serum protein content increased by 10%, albumins by 0.99%, globulins by 15.4%, glucose by 12%, calcium by 14% and phosphorus by 3.6% compared to control chickens.

Biochemical parameters of the blood serum content of broiler chickens in the experimental control group (x ± CX)

Table 2

S/n	Indications	Groups		
		Control	1 experiment	2 experiment
chicks are 14 days old				
1	Total protein, g/l	23,9±1,1	27,4±0,6	34,3±4,7
2	Albumins, g/l	8,13±0,9	9,23±0,9	10,8±0,4
3	Globulins, g/l	14,2±1,6	17,9±0,5	23,1±4,9
4	Glucose, mmol/l	5,4±0,03	5,6±0,04	5,7±0,05
5	Calcium, mmol/l	5,1±0,02	5,4±0,03	5,6±0,04
6	Phosphorus, mmol/l	1,33±0,2	1,37±0,05	1,39±0,04
chicks are 28 days old				
1	Total protein, g/l	35,9±1,9	39,4±1,1	39,8±1,3
2	Albumins, g/l	10,01±0,2	8,54±0,2	10,2±1,1
3	Globulins, g/l	18,1±2,11	21,8±0,7	20,9±1,0
4	Glucose, mmol/l	5,8±0,01	6,4±0,03	6,5±0,03
5	Calcium, mmol/l	5,7±0,04	6,3±0,06	6,5±0,09
6	Phosphorus, mmol/l	1,37±0,010	1,40±0,06	1,42±0,06

Broiler chickens that received 1.5% premix for 14 days showed an increase in total protein by 25%, albumins by 17%, globulins by 29%, glucose by 1.71%, calcium by 3.7% and phosphorus by 14% compared to their biochemical parameters in blood serum.

Indicators in the studied blood serum for 28 days of the experiment. Compared to the experimental group chickens receiving 1.5% primex, total protein increased by 1%, albumins increased by 19.4%, and globulins decreased by 1.2% when they received chlorella suspension. We have witnessed an increase in glucose levels by 1.5%, calcium by 3% and phosphorus by 1.4%.

We believe that the decrease in the level of albumins and globulins in the blood serum of chickens in the experimental group compared with the control group should be associated with the synthesis of these agents in the body.

Conclusions

1. Morphological parameters of the blood of chickens treated with chlorella suspension showed an increase in the number of erythrocytes by 16.25% compared with the control, and hemoglobin by 19.2%. leukocytes decreased by 3.24%.

2. Biochemical parameters of the serum content of broiler chickens treated with chlorella suspension, compared with the control, showed an increase in total protein by 1%, albumin by 19.4%, glucose by 1.5%,

calcium by 3% and phosphorus by 1.4%. Only reduced the number of globulins by 1.2% compared to the control ones.

3. The analysis of the experimental results showed that there is an effective effect of chlorella suspension on the morphological and biochemical parameters of the blood of broiler chickens.

Used literature

1. Beknazarovich Y.H., Yunus S., & Iroda, S. (2022). Application Of Common Chlorella In Poultry Industry And Determination Of It's Effectiveness. Journal of Pharmaceutical Negative Results, 3452-3456.
2. Богданов Н.И. Суспензия хлореллы в рационе сельскохозяйственых животных. Пенза,2006.
3. **Ромашко А.К., Мананкина Е.Е., Ерашевич В.С**. Влияние суспензии хлореллы на племенные качество птицы// Молекулярные, мембранные и клеточные основы функционерования биосистем: м-лы Междунар.науч.конф.и XII съезда БООФИБ.- Минск, 2016. Ч.2.С.283-286.
4. **Shaligo N.V., Melnikov S.S.** Economically useful types of algae and their use in the national economy // Science and innovation. −2009. −№ 3. − p. 34-36.
5. **Шалыго Н.Б., Мананкина Е.Е., Ромашко А.К, Ерашевич В.С**. Рекомендация по использование суспензии хлореллы в птицеводстве.-Минск, 2012.
6. Юнусов, Х.Б., Салимов, Ю., & Нуруллаев, А.А. Техноген омилларни маҳсулдор ҳайвонлар организмига ўзига хос таъсирлари. Вестник ветеринарии и животноводства, 2021.