

INFLUENCED BY PROBIOTICS, ROSS - 308 BELONGS TO THE CROSSE CHICK LIVER MORPHOGENESIS DURING POSTNATAL ONTOGENESIS OF BROILER CHICKS

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Summary: It was found that the absolute parameters of the length and weight of the liver of cross-broiler chickens ROSS-308 significantly increase in the period from the first day of postnatal ontogenesis to 14 days of age, and at the subsequent stages of the study, this process proceeds without significant deviations. Liver morphometric parameters were particularly high in broiler chicks of groups 3 and 4, who were additionally given probiotics at the late stages of postnatal ontogenesis, starting from day 14.

Key words: poultry, chickens, broilers, ROSS-308, cross, liver, postnatal ontogeny, length, weight, growth rate, linear size, absolute index, heredity, diabetes, atherosclerosis, therapeutic, prophylactic, diet.

Enter. In order to successfully solve the problem of food security in the country, great importance is attached to poultry farming, which is the fastest growing branch of animal husbandry. In order to increase the volume of poultry meat production and reduce its price, intensive technologies of breeding broiler chickens are widely used.

The main task of poultry farming is to breed young animals with good quality meat and high-yielding poultry with low feed consumption, and special attention is paid to increasing the economic efficiency of the application and introduction of new technologies into production.

In order to protect them from these stress factors, their food should be rich in vitamins, enriched with probiotic and prebiotic supplements.

The use of probiotics is widespread in the poultry industry today and is an effective tool for the development of poultry products. Probiotics include live microbes and their metabolites that increase the proportion of microbes in the digestive tract. Probiotics have an anti-stress effect on the poultry organism, and the probiotic supplement (*Bacillus subtilis*) shows antagonistic activity against the widely pathogenic and conditionally pathogenic microflora of poultry and leads to the recovery of lacto- and bifidobacteria.

Currently, poultry industry products are supplied to the food market - broiler chicken liver. Chicken liver has long been known as a valuable food product - a product with dietary, therapeutic and therapeutic-prophylactic value. Chicken liver is especially recommended in the diet of children, pregnant women, during recovery after childbirth and during surgery, chronic fatigue, physical and mental fatigue, atherosclerosis, obesity and diabetes [1, 6].

Today, by creating conditions for keeping and feeding poultry, changing the conditions of their keeping, feeding and feeding, not only the appearance and behavior of animals, but also the morphology and functions of internal organs, including the glands of the digestive tract. 'changed [8,9].

Intensive industrial technologies of breeding broiler chickens differ sharply from the natural biocenosis of poultry, which leads to changes in the morphological and functional state of internal organs, especially the liver. This is manifested by a change in the quality of the liver (as a food product). [2, 3, 4].

According to V. Burj (2010), one of the common structural changes in the liver during pathology is fatty degeneration of hepatocytes and inflammatory changes in the parenchyma. However, these changes can be reversed by supplementing broiler chick diets with probiotics to regenerate chick livers.

As the largest multifunctional gland of the digestive organs, the study of the morphology of the avian liver is of theoretical and practical interest for veterinary, biological and poultry breeding [6].

The role of the liver in the body is important and varied. It is the main metabolic organ. The liver is the largest complex multifunctional digestive gland. As a result of liver damage, intoxication and lack of nutrients begin in the body. All this worsens the animal's vital activity and often leads to death. However, this organ has regenerative abilities [5, 7].

Materials and methods. Scientific examination was carried out on the liver of broiler chickens belonging to the "ROSS-308" cross brought from "Dargom Parranda Fayz" LLC, Samarkand region. Divided into 4 groups with 40 chicks in each. All group chicks were fed with the same ration. Chicks of the first group were given only food and water; the chicks of the second group were given food, water and vaccinations, preventive medicines carried out under farm conditions; the chicks of the third experimental group were given food, water and probiotics containing 100 million microbial cells; the chicks of the fourth experimental group were given probiotics containing 200 million microbial cells. Morphometric measurements were taken on days 1, 7, 14, 21, 28, and 35 of the experiment.

General morphological methods were used to determine the linear dimensions and weight of the organ.

All numerical data obtained as a result of scientific investigations were subjected to mathematical processing according to the method of E.K. Merkureva.

Mathematical-statistical analysis was performed using the Student's and Fisher's criteria in a Microsoft Excel spreadsheet.

Results and their analysis. As a result of scientific research, the morphometric indicators of the liver of broiler chicks show certain dynamics of change in different physiological stages of postnatal ontogenesis.

The absolute indicator of the length of the liver of chicks in the first group was 3.34 ± 0.11 cm on the first day of postnatal ontogenesis, with a rapid increase until the 7th day (3.76 ± 0.07 cm, $r < 0.02$; $K = 1.12$) and to continue this process step by step until the next studied 35 days, that is, at 14 days - 5.86 ± 0.18 cm ($K = 1.56$), at 21 days - 7.74 ± 0.12 cm ($K = 1, 32$; $r < 0.04$), at 28 days - 8.54 ± 0.23 cm ($r < 0.03$), and at 35 days - 8.68 ± 0.29 cm ($K = 1.02$; $r < 0.04$) was observed. It was found that the growth coefficient of this indicator of the liver is 2.60 times during the period from 1 day to 35 days of chicks.

The absolute index of liver weight was 3.92 ± 0.12 g in the first 1 day of postnatal development of chicks of the first group, and increased to 4.63 ± 0.15 g ($K = 1.18$; $r < 0.04$) by the 7th day. , to accelerate this process up to 14 days, that is, to increase to 14.55 ± 0.37 g ($K = 3.14$) and to continue it periodically until the next 35 days, that is, to 26.95 ± 0.53 g at 21 days ($K = 1.85$; $r < 0.02$), at 28 days – 37.89 ± 0.55 g ($K = 1.40$; $r < 0.02$), at 35 days – 47.09 ± 0 , It was noted that it reached 27 g ($K = 1.24$; $r < 0.03$). It was determined that the growth coefficient of the absolute indicator of the liver is 12.01 times during the studied stages of postnatal ontogenesis of chicks.

The absolute index of liver length increased slightly from 1 to 7 days of postnatal development of chicks in group 2, from 3.24 ± 0.07 cm to 3.52 ± 0.13 cm ($K = 1.09$; $r < 0.04$). and periodically in later youth, up to 6.24 ± 0.09 cm ($K = 1.77$) at 14 days, up to 7.24 ± 0.20 cm ($K = 1.16$) at 21 days, 7.66 at 28 days Up to ± 0.27 cm ($K = 1.06$; $r < 0.04$), increasing to 8.88 ± 0.31 cm ($K = 1.16$) at 35 days was noted. It was found that the growth coefficient of this indicator of the liver is 2.74 times during the period from 1 day to 35 days of chicks.

The absolute index of liver weight in chicks of group 2 was 3.95 ± 0.09 cm on the first day of postnatal development, and increased to 4.28 ± 0.1 g ($K = 1.08$; $r < 0.03$) by 7 days of age. , the significant acceleration of this process up to 14 days (14.83 ± 0.22 g; $K = 3.46$) and the continuation of this state almost at the same rate until the next 35 days, that is, at 21 days – 22.28 ± 0.61 g ($K = 1.50$; $r < 0.03$), at 28 days - 33.81 ± 1.27 g ($K = 1.51$; $r < 0.04$), at 35 days - 48.04 ± 1.65 g ($K = 1.42$; $r < 0.04$) was noted. It was determined that the growth coefficient of the absolute indicator of the liver is 12.15 times during the studied stages of postnatal ontogenesis of chicks.

The absolute index of the length of the liver of chicks of the 3rd group from the first day to the 7th day of postnatal ontogeny increased rapidly, like those of the first and second groups, from 3.28 ± 0.06 cm to 4.02 ± 0.15 cm ($r < 0.04$; $K = 1.22$) and on the 14th day this process became more intense (5.76 ± 0.16 cm; $K = 1.43$) and at the next stages periodically on the 21st day - 6.6 ± 0.17 cm ($K = 1.14$), at 28 days - 7.56 ± 0.19 cm, at 35 days - 8.24 ± 0.24 cm ($r < 0.03$; $K = 1.09$). It was found that the growth coefficient of this indicator of the liver is 2.51 times during the period from 1 day to 35 days of chicks.

The absolute index of liver weight in chicks of group 3 was equal to 3.93 ± 0.10 g in the first 1 day of postnatal development, with a slight increase until 14 days, that is, 4.54 ± 0.14 g in 7 days ($K = 1.15$; $r < 0.04$), up to 15.96 ± 0.29 g ($K = 3.51$) at 14 days, up to 25.77 ± 0.83 g ($K = 1.61$) at 21 days, at 28 days - 45.47 ± 1.67 g ($K = 1.76$), increasing to 48.04 ± 1.65 g ($r < 0.04$) in 35 days. It was found that the coefficient of growth of this indicator of the liver increased by 12.20 times during the period from 1 day to 35 days of chicks.

The length of the liver of the chicks of group 4 from 1 to 7 days of age was 3.5 ± 0.08 cm to 3.66 ± 0.06 cm ($K = 1.04$), and until 14 days of age it was 6.44 ± 0.07 cm ($K = 1.76$; $r < 0.02$) and it was observed that this condition continued in a stepwise manner until the next studied 35 days of postnatal ontogeny. That is, this indicator was increased to 6.8 ± 0.14 cm ($K = 1.05$) at 21 days, to 7.84 ± 0.21 cm ($r < 0.03$; $K = 1.15$) at 28 days. It was found that it reaches 7.98 ± 0.27 cm ($r < 0.04$) in 35 days. Its growth factor was found to increase up to 2.28 times during the period from the first day of postnatal development to the 35th day.

The absolute indicator of the weight of the liver of chicks of the 4th group was 3.98 ± 0.1 g in the first 1 day of postnatal development, and this indicator was 5.66 ± 0.1 g by the 7th day ($K = 1.43$;

$r < 0.03$), at 14 days – up to 12.46 ± 0.2 g ($K = 2.20$), at 21 days – up to 22.05 ± 0.3 g ($K = 1.76$), at 28 days – $47.26 \pm$ It was found to increase to 1.7 g ($K = 2.1$), and to 50.77 ± 1.9 g ($r < 0.04$) at 35 days. It was observed that the coefficient of growth of this indicator of the liver is 12.82 times during the period from 1 day to 35 days of chicks.

The analysis of the results of the studies showed that probiotics have a significant positive effect on the growth rate of broiler chicks, the increase in liver weight is proportional to the increase in body weight, but the liver weight in chicks given probiotic is slightly higher than that of control group chicks of the corresponding age.

Summary:

- it was noted that the absolute indicators of the length and weight of the liver of broiler chicks increased slightly during the period from the first day to 14 days of postnatal ontogenesis, and this process continued without major deviations in the next studied stages;

- during the studied stages of postnatal ontogenesis of broiler chicks (from 1 day to 35 days), it was observed that the coefficient of growth of the morphometric dimensions of the liver was higher in absolute weight than in absolute length;

- it was found that the absolute parameters of the linear sizes and weights of the liver were higher in broiler chicks of groups 3 and 4, which were additionally given probiotics in the stages of postnatal ontogenesis, especially after 14 days of age.

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