FORMATION FEATURES OF INTESTINAL MICROBIOCENOSIS OF BEIJING BROILER DUCKS

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Recent studies have significantly changed the picture of the intestinal microflora of animals and helped develop a new concept under which microbocenosis of the intestine is considered as a separate multicellular "organ" which has important physiological functions [1]. Animal endoecology research indicates that microflora of the digestive tract and macroorganism are two interrelated and interregulated biological systems. It is known that intestinal microflora stimulates the synthesis of immunoglobulin A, natural antibodies, the activity of phagocytic cells localized in the intestinal walls, their bactericidal activity, affects the differentiation of T suppressors in Peyer patches [2; 3]. Under the influence of adverse environmental factors and chemotherapeutic preparations there changes in microbocenosis, dysbacteriosis appears that leads to diseases of farm animals and reduction of their productivity [4-6]. Therefore, preserving microflora and prevention violations of its composition is an important and urgent problem of livestock farming.

Monitoring the status of intestinal microflora of poultry, the study of patterns of its settlement and establishment of critical periods of formation will prevent the development of dysbacteriosis and timely provide the correcting of undesirable changes that will increase the assimilation of feed components, animal productivity and improve product quality.

In previous studies, we studied the peculiarities of formation of intestinal microflora composition of hens and Japanese quails [7; 8]. The objective of these studies was to study the formation of intestinal microflora of Beijing broiler ducks in age aspect and establishment of critical phases of its formation under the conditions of industrial poultry-farming.

Materials and methods. To implement the task the study was carried out in the conditions of agricultural company "Pisky" of Mykolaiv district, Lviv region with the industrial Beijing broiler ducks flock of STAR 53 cross (heavy) of the selection of French company Grimaud Freres Selection in the number of 2 thousand heads. The poultry was kept in floor-brooding conditions with free access to food and water, according to current technological requirements. All birds received complete feed, balanced in nutrients and biologically active substances, according to the direction of productivity and growing period. In young and adult ducks the features of microflora formation were investigated in the age aspect: in two-day (adaptation and full utilization of the yolk), 20-day, 35-day, 75-day (juvenile moult) and 180-day age (puberty, the beginning of ovipositioning). The contents of the blind and the small intestines of birds served as the material for the study. Samples of gut contents were taken after slaughter and transferred to a sterile tube. Microflora composition was studied in the samples of intestinal contents by dilution and sowing of microorganisms on elective medium (Endo, Sabouraud, bismuth-sulfite, Baird-Parker, Blaurok, blood agar). Their identification was carried out by morphological, cultural, physiological and biochemical properties (Olkenytskyi and Simons media) [9].

Statistical analysis of the results was performed using Microsoft Excel, using Student test.

Thus, the 20th day of life can be considered a critical period in the formation of intestinal microbocenosis of ducks. Both in the small and cecum of 20-day-old ducks the reducing of the total number of cells of E. coli bacteria group was detected at the cost of bacteria with normal enzymatic activity, and the increasing number of non-pathogenic staphylococci. These negative changes were physiological as the reducing of the number of bifidobacteria and lactobacilli did not happen. On the basis of the obtained data it can be recommended to perform the correction of dysbiotic irregularities in ducks with probiotic preparations at 20-day old age.