

عنوان مقاله:

Evaluation of Probiotic, Prebiotic, and Synbiotic on Performance, Immune Responses, and Gastrointestinal Health of Broiler Chickens

محل انتشار:

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خلاصه مقاله:

To investigate the effects of newly introduced probiotic, prebiotic, and synbiotic, 1080 d-old broiler chickens were used in a completely randomized design with six treatments and six replicates of 30 birds each. Dietary treatments were: basal diet (control), basal diet plus 500 g of probiotic/ton (Probiotic-500), basal diet plus 500 g and 300 g of probiotic/ton during days 0-24 and 25-42 of age, respectively (Probiotic-500-300), basal diet plus 300 g of probiotic/ton (Probiotic-300), basal diet plus 1 kg of prebiotic/ton (Prebiotic), basal diet plus 1 kg of synbiotic/ton (Synbiotic). Average daily weight gain and feed conversion ratio were only affected by dietary treatments during the starter period; the lowest average daily weight gain and the highest feed conversion ratio were recorded for the control treatments compared to the others. The antibodies titers (total, IgG, and IgA) against sheep red blood cells, and Newcastle and Influenza viruses were significantly ($P < 0.05$) increased by feeding diets containing all experimental additives compared with the control diet. The pH of the ileum decreased ($P < 0.05$) by using probiotic, prebiotic, and synbiotic in the diets. The highest number of lactobacillus and E. coli populations was observed in birds fed synbiotic and control diet, respectively. The height of villus in the jejunum and its ratio to crypt depth was higher in birds fed a symbiotic diet compared to birds fed probiotic or control diets ($P < 0.05$). Furthermore, the cecum concentration of short-chain fatty acids was greater in chickens fed diets containing probiotic, prebiotic, or synbiotic than the control chickens ($P < 0.05$). In conclusion, although dietary supplementation with probiotic, prebiotic, and synbiotic had no positive effect on growth performance parameters of broiler chickens, the use of these products could exert promising effects on poultry health.

کلمات کلیدی:

Antibody titer, Jejunal morphology, microbial population, Short-chain fatty acid

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