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Agricultural Research, Education and Extension Organization
Animal Science Research Institute

The comparison of the effect of Multi Behsil with common commercial probiotic supplements in the market on performance, blood parameters, egg quality, egg yolk cholesterol and immune system in laying hens

Research worker : Mohammad Javad Agah

Abstract

An experiment was carried out to evaluate the effect of Multi Behsil (internal probiotic) with Protexin (external probiotic) on performance, egg quality and blood parameters of laying hens (from 26 to 46 weeks of age). For this purpose, 180 pieces of Nick Chick hens were distributed in a completely randomized design with 3 treatments, 4 replications and 12 laying hens in each replicate. The chickens were divided into 3 experimental treatments based on the same average weight. Experimental treatments included basal diet (control treatment; CT), basal diet supplemented with 200 g/ton Multi Behsil probiotic (MBT), basal diet supplemented with 100 g/ton probiotic Protexin (PRT). The results showed that compared to the CT, diets containing MBT and PRT improved the feed conversion ratio (2.03 and 2.28 vs. 2.14), egg production (87.1 and 84.5 vs. 83.3 percent) and egg mass (50.22 and 48.91 vs. 47.67 gr), respectively ($P < 0.05$). Using probiotic supplementation (MBT and PRT) in the diet significantly increased (specific gravity, shell thickness, yolk color index and shell strength) and significantly reduced egg yolk cholesterol at 34 weeks of age ($P < 0.05$). Antibody titer against sheep red blood cell (SRBC) and serum lipid profile of laying hen blood were not affected by experimental treatments ($P < 0.05$). However, serum levels of cholesterol and triglyceride in laying hens fed diets containing probiotic supplements (MBT and PRT) tended to decrease compared with the CT. Overall, the use of MBT supplementation in the laying hen diet was comparable to that of probiotics supplemented with PRT and provided better performance in most of the traits studied than the CT.

Keywords: Probiotic, Performance, Blood parameters, Immune system, laying hens