

Immunomodulation of Black Seed in Two Strains of Laying Hens

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Abstract :

There are limited studies that investigated the effect of black seed supplementation on the immune status of laying hens. The current study investigated the effect of different levels of dietary black seed on the immune status of different strains of laying hens. A total of 600 pullets were used, 300 from Hy-Line Variety W-98 white and 300 from Hy-Line Variety brown. The white and brown pullets were divided into five groups, 60 pullets each which was divided into three replicate ($n = 3$), each replicate includes 20 pullets. The first group received a regular diet with no black seed (T1, control group). The second group received a diet containing 1.5% black seed from 28 wk of age until 70 weeks of age (T2). The third group received a diet containing 3.0% black seed from 28 wk of age until 70 weeks of age (T3). The fourth group received a diet containing 1.5% black seed from 16 weeks of age until 70 weeks of age (T4). The fifth group received a diet containing 3.0% black seed from 16 weeks of age until 70 weeks of age (T5). Antibody titer, cell-mediated immune response and White Blood Cell Counts (WBCs) were measured. Results showed that feeding layer chickens on 1.5 or 3.0% black seed increased the total WBCs and the difference was significant for the white hens ($p < 0.02$). Black seed generally enhanced cell-mediated immune response and antibody titer, however, this effect was not significant. In conclusion, black seed could be used to enhance the immune status of laying chickens.

Key Word :

Black seed, antibody titer, immune status, laying chickens