Effects of dietary supplementation of peppermint on growth performance, carcass characteristics and immune response of small type white silky chicken [1]

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Abstract

The purpose of this experiment is to investigate differ levels of peppermint supplementation on growth performance, carcass characteristics and immune response of small type white silky chicken. A total of 150 day-old LRI small type white silky chickens were randomly divided into five groups: (1) control group (no drugs or peppermint); (2) adding 0.1% peppermint; (3) adding 0.5% peppermint; (4) adding 1% peppermint and (5) adding 50 ppm antibiotics (Tylimycin). Each treatment had three replicates; each replicate had 5 males and 5 females. The experiment was conducted for 16 weeks. The growth performance, immune response, blood biochemical values and carcass characteristics were collected. The results of dietary supplementation of different levels of peppermint for 0-16 weeks of age indicated that diets adding 1% peppermint had significantly higher body weight gain than diets adding 0.5% peppermint ($P < 0.05$). Feed conversion ratio of adding antibiotics was significantly lower than that of adding 0.1% and 0.5% peppermint ($P < 0.05$). There was no significant difference in viability between peppermint group and control group, however, viability of adding 1% peppermint (100%) was higher than control group (96.7%) and antibiotic group (90%). In immune response, antibody titers of ND of diets adding 0.5% peppermint were significantly higher than those of adding 0.1% peppermint at 12 weeks of age. Diets adding 0.1% peppermint tended to have higher IgA and IgG than control group. Diets adding 0.5% peppermint had significantly lower had significantly lower creatinine than those adding 0.1% and control group ($P < 0.05$). For males, diets adding 0.5% peppermint had significantly higher head and neck ratio than adding 1% peppermint ($P < 0.05$). Control group had significantly higher breast ratio than adding 0.5% peppermint ($P < 0.05$). Diets adding 0.1% and 1% peppermint had significantly higher wing ratio than control group ($P < 0.05$). Diets adding 0.1% peppermint and antibiotics had significantly higher edible organs than control group ($P < 0.05$). For females, diets adding 0.1% and 1% peppermint had significantly higher carcass ratio than control group ($P < 0.05$). Diets adding 0.1% peppermint had significantly lower leg ratio than the other groups ($P < 0.05$). Diets adding antibiotics had significantly higher edible organs than control group ($P < 0.05$).

Key word: Peppermint, Silky chicken, Growth performance, Immune response.

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