



Evaluating the effect of Thyme, Licorice and Enzyme supplemented diets on performance, immune and carcass characteristics of broilers

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Abstract:

Objectives: The main aim of this research was evaluating and comparison the effect of thyme and licorice supplementation (as herbal medicine additives) with an enzyme complex supplementation (as a common feed additive) on performance, immune and carcass characteristics of broilers.

Material and Methods: An experiment was designed in format of completely randomized design with 5 treatments, 3 replicates and 300 chicks totally (60 chicks per each treatment) to evaluate the performance, immune and carcass characteristics. The experimental traits were included feed intake, gain, and feed conversion ratio to assay the performance and carcass parts including breast, leg and carcass percentage to assay the carcass characteristics further evaluated the internal organs such as burse and spleen to assay the immune situation. Treatments were included as follow: 1. control diet (corn-soy based diet without any additive), 2. Thyme diet (control plus thyme powder), 3. Licorice diet (control plus licorice powder), 4. Mixed herbal medicine diet (control plus thyme and licorice powder equally), 5. Enzyme diet (control plus enzyme supplementation).

Results: According to the results, performance traits (including feed intake, gain and feed intake) immune indices (including burse and spleen weight) and carcass traits (including carcass parts such as breast, leg and carcass percentage) in herbal medicine and enzyme supplementation diets were improved significantly than control diet ($P < 0.05$). Internal organs such as abdominal fat and liver weight as indicators of lipogenesis rate were decreased in herbal medicine diets than control or enzyme supplemented diet significantly ($P < 0.05$). Immune organs such as burse and spleen weight as indicators of immune situation were increased in mixed herbal medicine diet than other treatments significantly ($P < 0.05$).

Conclusions: These findings indicated that thyme and licorice singly or in combination as organic herbal medicine can affect performance, carcass and immune characteristics. These effects are positive and improved the efficiency of feed intake and growth, also increased the carcass part weights and decreased the abdominal fat pad weight in companion with reduced the liver weight that indicated the decreased lipogenesis rate in liver and uptake the fat by this organ. Also an improved immune organ such as burse or spleen in this study indicates that this herbal medicine can promote the immune situation and efficacy of health and livability. Increase in immune organs affected by herbal medicine metabolites such as phenolic and glycyrrhiznic acid compounds in thyme and licorice respectively, which produce promotion effects on gastrointestinal tract and immune system to improve growth and health characteristics of birds. All of data comprised simultaneously with a strong common feed additive to test and screen the results with a good criterion as positive control in addition to negative control (corn-soy based diet without any additive).

Key words: Broiler, Enzyme, Licorice, Thyme.