Effects of supplementation of Satureja khuzistanica Jamzad essential oils in the drinking water on growth performance, serum metabolites and differential counts of white blood cells in broiler chickens

This study was carried out to evaluate the effects of Satureja khuzistanica essential oils (SKEO) on performance, serum metabolites and differential counts of white blood cells in broiler chickens. A total of 82 one-day-old straight-run Cobb 005 broiler chickens were allocated into seven treatment groups with four replicates of 10 birds each from day 1 to 24 of age. The birds were continuously given drinking water supplemented with 0 (Control−), 0.04, 0.03, 0.02, 0.01 and 0.05 mg/L SKEO or 0.00 mg/L Tween-80 (control+) as seven experimental treatments. During overall period (1 to 24 days) of the study, broilers received water supplemented with 0.04, 0.03 and 0.05 mg/L SKEO consumed less (P < 0.05) feed compared with those given water supplemented with 0.01 mg/L SKEO. However, feed intake for the control broilers was intermediate and was not statistically different (P > 0.05) from either of the groups. Broilers received water supplemented with 0.03 mg/kg SKEO had lower (P < 0.05) weight gain compared with the control broilers, while feed conversion ratio was higher (P < 0.05) in broilers received water supplemented with 0.02 mg/kg SKEO compared with the control broilers. The serum concentrations of glucose, triglycerides, and total cholesterol were not affected (P > 0.05) by treatments at days 12 and 24 of age. Similarly, water supplementation with SKEO had no effect on differential counts of white blood cells and heterophil to lymphocyte (H/L) ratio at days 12 and 24 of age. Overall results of the present study showed that drinking water supplementation with SKEO had no beneficial effect on growth performance, serum metabolite concentrations and differential counts of white blood cells in broiler chickens and water supplementation with 0.04 and 0.05 mg/L SKEO decreased broiler growth performance.

Keywords: Satureja khuzistanica, essential oils, broiler chickens.
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