World Academy of Science, Engineering and Technology
International Journal of Biomedical and Biological Engineering
Vol:9, No:03, 2015

Impact of Two Herbal Seeds Supplementation on Growth Performance and Some Biochemical Blood and Tissue Parameters of Broiler Chickens

Authors : Hamada A. Ahmed, Kadry M. Sadek, Ayman E. Taha

Abstract : The effects of basil and/or chamomile seed supplementation on the growth of Hubbard broiler chicks were evaluated. The antioxidant effects of these supplements were also assessed. One hundred and twenty 1-day-old broiler chicks were randomly divided into four equal groups. The control group (group 1) was fed a basal diet (BD) without supplementation. Groups 2, 3, and 4 were fed the BD supplemented with 10g basil, 10g chamomile, and 5g basil plus 5g chamomile per kg of food, respectively. Basil supplementation alone or in combination with chamomile non-significantly ($P \geq 0.05$) increased final body weight (3.2% and 0.3%, respectively) and weight gain (3.5% and 3.6%, respectively) over the experimental period. Chamomile supplementation alone non-significantly ($P \geq 0.05$) reduced final body weight and weight gain over the experimental period by 1.7% and 1.7%, respectively. In comparison to the control group, herbal seed supplementation reduced feed intake and improved the feed conversion and protein efficiency ratios. In general, basil seed supplementation stimulated chicken growth and improved the feed efficiency more effectively than chamomile seed supplementation. The antioxidant activities of basil and/or chamomile supplementation were examined in the thymus, bursa, and spleen. In chickens that received supplements, the level of malondialdehyde was significantly decreased, whereas the activities of glutathione, superoxide dismutase, and catalase were significantly increased ($P<0.05$). Supplementation of basil and/or chamomile did not affect blood protein levels, but had lipid-lowering effects as evidenced by reduced serum levels of total lipids, triglycerides, and cholesterol. In conclusion, supplementation of basil and/or chamomile improved growth parameters in broiler chicks and had antioxidant and blood lipid-lowering effects. These beneficial effects of basil and/or chamomile supplementation resulted in economically viable production of high-quality white meat containing no harmful residues.

Keywords : herbal additives, basil, chamomile, broiler, growth performance, antioxidant
Conference Title : ICVBS 2015 : International Conference on Veterinary and Biomedical Sciences
Conference Location : Paris, France
Conference Dates : March 30-31, 2015