

Dietary Effect of Selenium-Enriched Radish Sprouts, Vitamin E and Rhodobacter capsulatus on Hypcholesterolemia and Immunity of Broiler

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Abstract : The study was designed to investigate the effects of dietary Selenium-enriched radish sprouts (Se-RS), Vitamin E (Vit E) and Rhodobacter capsulatus (RC) on broiler's immunity, cholesterol concentration and fatty acid composition in broiler meat. A total of 100 two-week-old male broiler chicks were randomly assigned into 5 dietary groups, such as i) Control; ii) Se-RS (5 µg/kg Se-RS); iii) Se-RS+RC (5 µg/kg Se-RS + 0.2 g/kg RC); iv) Se-RS+Vit E (5 µg/kg Se-RS + 50 mg/kg Vit E) and v) Se-RS+RC+Vit E (5 µg/kg Se-RS + 0.2 g/kg RC + 50 mg/kg Vit E). The broilers were offered ad libitum specific diets and clean drinking water. After the end of 3-wk of feeding period, serum cholesterol and triglycerides concentrations were decreased ($p<0.05$) specially, in the broilers fed Se-RS+RC+Vit E supplemented diet compared to the broilers fed control diet. At the end of the 6-wk feeding period, Se-RS+RC+Vit E supplemented diet significantly ($p<0.05$) reduced cholesterol and triglycerides concentrations, and improved the ratio of unsaturated fatty acids (UFA) to saturated fatty acids (SFA) in broiler meat. The highest ($p<0.05$) number of leukocytes was observed in the broilers fed Se-RS+RC+Vit E supplemented diet than that of the broilers fed control diet. Spleen, bursa and thymus weight were significantly ($p<0.05$) increased by Se-RS+RC+Vit E supplemented diet than the control diet. Compared to the control diet, Se-RS+RC+Vit E supplemented diet significantly ($p<0.05$) increased foot web index. Moreover, there was no mortality in all groups of broilers during the experimental period. Therefore, the study may conclude that there are dual benefits of Se-RS+RC+Vit E supplementation in broiler diet improved immunity and meat quality for health conscious consumers.

Keywords : hypocholesterolemia, immunity of broiler, rhodobacter capsulatus, selenium-enriched radish sprouts, vitamin E

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