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Effect of Long Term Feeding of Raw and Sun-Dried Garlic (*Allium sativum*) on Performance and Lipid Metabolism of Broiler Chicks

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Abstract

The effects of garlic on performance and lipid metabolism were examined in Anak breed broiler chicks. A total of 147 day-old chicks were randomly distributed into 7 dietary treatments, each treatment consisting of 3 replicates of 7 birds. Treatments 2, 3 and 4 contained 1%, 2%, and 3% of sun-dried garlic while treatments 5, 6 and 7 contained 1%, 2%, and 3% of raw garlic. Treatment 1 was the control and contained 0% garlic. The duration of the experiment was 56 days. Feed intake and weight gain were measured weekly while analysis of blood samples was carried out on the 2nd, 4th, 6th and 8th weeks of the experimental period. The birds were sacrificed at the end of the 8th week. Samples of the liver were taken and analysed for hepatic cholesterol while the weight of abdominal fat deposit was obtained. Both raw and sun-dried garlic had a reducing ($p < 0.05$) effect on serum triglycerides, total cholesterol and low density lipoprotein. The highest hypocholesterolemic effect of garlic was observed in birds fed 2% raw garlic for which total serum cholesterol was 96.1 mg dl⁻¹ compared to 116.5 mg dl⁻¹ for the control diet. High density lipoprotein was significantly ($p < 0.05$) increased in response to feeding of sun-dried and raw garlic. The inclusion of garlic in the diet also significantly ($p < 0.05$) reduced both liver cholesterol and abdominal fat deposition in chicks. Feed intake, weight gain and feed conversion ratio were not significantly ($p > 0.05$) affected. Haematological parameters also showed no significant differences ($p > 0.05$). The results confirm that both raw and sun-dried garlic exert hypocholesterolemic effect in broiler chicks but have no negative effect on the performance

Keywords: Broiler chicks, cholesterol, garlic, lipid metabolism