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البحث السابع

عنوان البحث باللغة الانجليزية :

Reda, F. M., Alagawany, M., Mahmoud, H. K., Mahgoub, S. A., & **Elnesr, S. S.** (**2019**). Use of red pepper oil in quail diets and its effect on performance, carcass measurements, intestinal microbiota, antioxidant indices, immunity and blood constituents.

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ABSTRACT

Plant-derived additives are used to maintain the health and growth performance of livestock. The use of red pepper oil (RPO) has recently attracted considerable scientific interest mainly due to its potential benefits for animals and humans. The present study was conducted to evaluate the effect of dietary supplementation with RPO on growth performance, carcass measurements, antioxidant status and immunity of growing quails between 1 and 5 weeks of age. A total of 240 growing quails (1-week old) were distributed into 5 equal groups consisting of 48 birds (4 replicates of 12 birds each). The first group was fed a basal diet without RPO (0 g/kg diet), and the second, third, fourth and fifth groups received diets containing RPO (0.4, 0.8, 1.2, 1.6 g/kg diet, respectively). The experiment lasted for 5 weeks. At age of 5 weeks, quails were slaughtered for carcass examinations, microbiological analysis of intestine and to determine blood constituents. Data were statistically analyzed by one-way ANOVA. Quails fed with 0.8 g RPO/kg diet showed 12.14%, 14.4% and 15% improvement in live BW, body weight gain and feed conversion ratio, respectively, compared with the control group. Quails that received diets with 1.2 g RPO consumed more feed than the others during the total period (1 to 5 weeks). Plasma globulin levels were significantly decreased ($P = 0.0102$), but albumin/globulin ratio was significantly increased ($P = 0.0009$) in birds fed diets containing RPO (0.4 and 1.2 g/kg) compared with those in the control group. Activity of liver enzymes in the plasma was nonsignificantly decreased in quails supplemented with 0.8 g RPO/kg diet compared with those in the control group. Activities of antioxidant enzymes (glutathione and catalase) in the group fed on diets supplemented with RPO (0.8 g/kg) were significantly higher than those in the control group. The inclusion of RPO (0.8 g/kg diet) in quail diets improved ($P < 0.05$) plasma lipid profile and also decreased pH of the caecal content ($P = 0.0280$) compared with those in the control group. The caecal bacterial population, Salmonella spp., coliform and Escherichia coli, were lowered ($P < 0.05$) in the groups treated with RPO (0.8, 1.2 and 1.6 g/kg) compared with those in the control group. In conclusion, dietary supplementation of RPO (0.8 g/kg) can enhance the performance and antioxidant indices and decrease intestinal pathogens and thus improve the health status of Japanese quail.