

Effects supplementation of zinc and Vit E on antioxidant enzyme, sexual hormone and some biochemical parameters in breeder flock of Japanese Quails

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Abstract

This study was conducted to investigate the effects of feeding with zinc (zinc oxide) and vit E (α -tocopherol acetate) on antioxidant enzyme, sexual hormone and some biochemical parameters of Japanese quails. A total of 960 Japanese quails (*Coturnix coturnix japonica*) 70 d of age were housed in cages and randomly allocated to 10 treatments. Each treatment comprised 4 replicates of 24 birds (sixteen females and eight males). A 5×2 factorial arrangement with five levels of Zn include: 0, 40, 80, 120 and 160 mg /kg of diet and two levels of dietary Vit E (0 and 40 IU/kg of diet) was used in a completely randomized block design, by using a corn- soybean meal basal diet. Water and feed were supplied on an ad libitum basis during the 10 –wk trial. Results indicated that zinc supplementation significantly increased the activities of superoxide dismutase and glutathione peroxides. The activity glutathione, glutathione peroxidase and total antioxidant capacity were increased after addition of Vit E but superoxide dismutase didn't influence. Levels of testosterone and estrogen significantly increased by Zn supplementation. Level of cholesterol after addition of Zn and levels of triglyceride and cholesterol after Vit E supplementation were decreased. Results of this experiment indicated that supplementation of zinc and Vit E was effective on change of antioxidant enzymes, sexual hormones and some biochemical parameters.

Key words: Zinc, Vit E, Antioxidant enzyme, Sexual hormone, Japanese quails

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