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The effects of propolis and royal jelly supplementation in diet on performance, egg characterizations, lipid peroxidation, antioxidant enzyme activity and mineral levels in Japanese quails

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This study was conducted to determine the effects of Propolis (P) and Royal Jelly (RJ) supplementation in diet on performance, egg characterizations, lipid peroxidation, antioxidant enzyme activity and mineral levels in Japanese quails (*Coturnix coturnix japonica*). For this aim, a total of 216 Japanese quails of 43 days of age were used. The experimental groups as follows: group1 (Control) was feed a basal diet, group2 (propolis) was feed a basal diet supplemented with 4 gr propolis/kg diet, group 3 (royal jelly) was feed a basal diet and 500 mg/kg bw royal jelly given orally. The effect of royal jelly on the final body weight was found to be significant ($P < 0.05$). Feed conversion rate (FCR) was significantly improved in the propolis group as compared with royal jelly group ($P < 0.05$). Egg characteristics were found highest in the propolis group in terms of shell weight ($P < 0.01$), shell thickness ($P < 0.05$) and shell rate ($P < 0.05$) as compared with other groups. Malondialdehyde levels in liver of all groups similar found ($P > 0.05$). Liver superoxide dismutase and catalase enzyme activities of propolis group were found significantly ($P < 0.05$) higher than those of other groups where as reduced glutathione and glutathione peroxidase activities were found higher in royal jelly group ($P < 0.05$). Significantly higher levels of Ca ($P < 0.05$) were found in serum of the propolis group where as those of Cu, Zn, Mg levels were similar in all groups. The results of the current study showed that propolis supplementation to 4 gr propolis/kg in quails diet the more improved to FCR, serum Ca level and antioxidant status than those of royal jelly supplementation 500 mg/kg bw quail.

Biography

Pinar Tatli Seven has completed her PhD (Animal Nutrition and Nutritional Disease) from Firat University. She is a Professor and Faculty of Veterinary, Department of Animal Nutrition and Nutritional Diseases University of Firat, Elazig, Turkey. She is also a member in Animal Nutrition Science Society in Veterinary Society.

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