

Abstract

This study was examined the effect of different levels of *Heracleum perdicum* essential oil on performance, egg quality, immune response and some blood parameters in Japanese quails. 96 Japanese quails at 60 days of age were chosen randomly, and divided into 4 treatments and each treatment contained 4 replications and each replication contained 6 birds. During 28 days, by using levels of *Heracleum perdicum* essential oil (0, 20, 40, 60 mg/kg). In the first to fourth weeks of the production period, different levels of treatments did not have a significant effect on feed intake (FI) ($p > 0.05$), but during the first, second and third weeks of the production period the amount of FI in all levels of treatments was numerically more than the control group. During the first, second, third, and fourth weeks of production, dietary feed conversion ratio (FCR) was not affected by treatments, and there was no significant difference between treatments. ($p > 0.05$). The findings of the effects of different levels of *Heracleum perdicum* on SRBC in Japanese quail showed that *Heracleum perdicum* had a significant effect on antibody response against SRBC, so that levels of *Heracleum perdicum* had less antibody than the control group. Blood biochemical parameters (glucose, cholesterol, triglyceride, Calcium, Phosphorus, albumin, ALT, AST, total Protein) were significantly affected by experimental treatments ($p < 0.05$), so that glucose in the 60 mg/kg treatment had the least numerical value compared to the control group. Also according to the results all of the other parameters except triglyceride, ALT, AST, in all levels of treatments, had the least numerical value compared to the control group. According to the results, weight of egg, length of egg, width of egg, weight of albumen and yolk, height of albumen, weight of yolk, weight of egg shell and thickness of the bottom of eggshell were not affected by experimental treatments ($p > 0.05$). According to results, diameter of yolk, and thickness of the tip of eggshell and thickness of the middle of egg shell were affected by experimental treatments.

Keywords: *Heracleum perdicum*, Japanese quail, Performance, Blood parameters.



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metabolites during laying period of Japanese quail**

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