

Abstract

This experiment was conducted to evaluate the effect of adding the Eucalyptus essential oil to diet on immune response, egg quality and serum metabolites during laying of the Japanese quails. In this experiment, 80 60-days quails were divided in four experimental groups (control, 20, 40, and 60 mg/kg diet) with five replicates. The experimental groups did not have a significant effect on feed intake at weeks 2, 3 and 4 ($P>0.05$). However, in the first week, the birds fed with 40 mg/kg essential oil showed higher feed intake compared to the control group ($P<0.05$). The effect of experimental groups on the rate of feed conversion and egg indices was not significant ($P>0.05$). The highest antibody level produced against Sheep Red Blood Cells was related to control treatment and there was no significant difference between control treatment and groups receiving 20 and 60 mg/kg Eucalyptus essence ($P<0.05$). The highest amount of glucose, phosphorus and total protein in control treatment and the lowest amount of total protein were obtained from experimental treatments containing 40 mg/kg Eucalyptus essential oil ($P<0.05$). The highest level of calcium was observed in the treatment containing 60 mg/kg Eucalyptus essential oils ($P<0.05$). The highest amount of AST was related to the treatment containing 20 mg/kg Eucalyptus essential oil ($P<0.05$). Also, the highest amount of ALT was related to the treatment containing 40 mg/kg Eucalyptus essential oil ($P<0.05$) and the lowest amount of ALT was observed in control treatment ($P<0.05$). Furthermore, the highest amount of the albumin was related to the treatment containing 40 mg/kg Eucalyptus essential oil ($P<0.05$). This study shows that the use of Eucalyptus essential oil in Japanese quail diet improves blood parameters.

Keywords: Eucalyptus, Quail, Immune response, Egg shell, Feed conversion ratio, Cholesterol



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**Effect of adding Eucalyptus essential oil to diet on
performance, immune response, egg quality and serum
metabolites during laying period in Japanese quail**

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