The Effect of Different Levels of Supplemented Some Essential Oils and Fruit Peel Powders in Quail Diets on Cholesterol, Vitamin A, E and D in Eggs

Turgay Şengül¹, Bünyamin Söğüt¹, Hakan İnci¹, A. Yusuf Şengül¹, A. Şükrü BENGÜ², Şenol ÇELİK¹

¹Bingöl University Faculty of Agriculture Dept. of Animal Science-BINGOL
²Bingöl University The Vocational School of Health Services - BINGOL

Abstract

This study was conducted to determine the effect of some essential oils and fruit peel powders added to quail rations at different levels on egg cholesterol, vitamin A, vitamin E and vitamin D levels. In the study, the birds were divided into 9 different groups with 3 replicates; control (C), 2-4% orange peel powder (OPP), 2-4% pomegranate peel powder (PPP), 0.5-1% orange peel oil (OPO) and 0.5-1% pomegranate seed oil (PSO). The experiment was lasted for 8 weeks, and the levels of cholesterol, vitamin A, vitamin E and vitamin D levels of the collected eggs were measured. In the experimental groups, the highest cholesterol level was found in the C group (72.01 mg/10g) and the lowest one in the 1% OPO group (54.85 mg/10g); The highest value for vitamin A was in the 0.5% PSO group (60.60 IU/10g), the lowest value in the 2% PSP group (53.10 IU/10g); the highest value for vitamin E in the 4% OSP group (0.55 mg/10g), the lowest value in the 1% PSO group (0.08 mg/10 g); the highest value for vitamin D was in 1% OPO group (5.38 IU/10g) and the lowest value in 2% PSP group (4.79 IU/10g). Levene, ANOVA and Welch tests were used for statistical analysis. As a result, egg cholesterol (F=36.934, P<0.01) and vitamin A levels (F=3.592, P <0.05) were significantly affected from the treatments, however, vitamin D (F=0.718) and vitamin E (FW = 2.362) levels were not.

Keywords: Quail, diet, essential oil, fruit peel powder, cholesterol, vitamin A, vitamin E