

The Effects of Supplementation of Bergamot Oil (Citrus bergamia) on Egg Production, Egg Quality, Fatty Acid Composition of Egg yolk in Laying Hens

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Abstract :

This research was conducted to determine effects of dietary bergamot oil levels (0, 0.25, 0.50, 0.75m/kg) on performance, egg quality, blood metabolic profile and fatty acid composition of egg yolk in laying hens. Sixty four of 67 weeks old white Lohman LSL laying hens were randomly assigned to four groups equally ($n=16$). Each treatment was replicated four times. Dietary supplementation of bergamot oil had no significant effect on feed conversion ratio, egg weight, and egg production, shell thickness, ratio of albumen and shell. But, supplementation of bergamot oil decreased feed intake. The addition of 0.50m/kg bergamot oil to the laying hens feed led to a significant increase in the yolk ratio. It was also observed that egg shell ratio, serum cholesterol and calcium concentration reduced significantly with supplementation of bergamot oil in laying hens diets. The highest IgG concentration was obtained from hens fed 0.25m/kg bergamot oil. Addition of bergamot oil to feeds significantly increased eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA) and n-3 concentration and decreased n-6/n-3 ratio in egg yolk.

The results of this research indicated that the addition of bergamot oil to the laying hens feed led to a significant decrease in the feed intake and concentrations of serum cholesterol. It was also concluded that dietary supplementation of bergamot oil significantly increased egg shell strength and, the EPA, DHA and n-3 ratio of the egg yolk.

Key Word :

bergamot oil, cholesterol, egg production, fatty acid, laying hen