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Paper: Effect Of Savory And Ajwain Essential Oils On Performance And Egg Quality In Laying Hens Challenged With Salmonella Enteritidis

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Abstract:

In order to investigate the effect of Savory and Ajwain essential oils on performance and the quality of produced eggs in the challenged hens with Salmonella Enteritidis, 100 Hy-Line W-36 laying hens with 44-week-olds, in a randomized complete block design were studied for 13 weeks. Treatments included negative control, positive control, antibiotic: 0.15g oxyvet per kilogram of basal diet, Savory essential oil, and Ajwain essential oil ((1g per kilogram of the basal diet). All experimental groups except negative control were challenged with 1 mL of suspension solution containing 1×10^7 CFU/mL Salmonella Enteritidis bacteria by oral gavage in the ninth week. Quantitative and qualitative parameters were evaluated at the end of each week, and before and after the challenge, respectively. Challenge with Salmonella Enteritidis had no significant effect on laying hen performance and egg quality. Before the challenge, antibiotic and essential oils of two medicinal plants reduced feed intake and egg weight compared to the control group; and reduced feed intake and feed conversion ratio after the challenge ($P < 0.05$). In the pre-challenge period, all three treatments, especially the essential oil of Ajwain, reduced the albumen Haugh unit ($P < 0.05$). After the challenge, Savory essential oil reduced yolk cholesterol content; and essential oils of two medicinal plants decreased yolk lipid oxidation in both pre-and post-challenge periods ($P < 0.05$). The results of this study showed that the essential oils of two medicinal plants increase the quality of produced eggs by reducing egg yolk MDA and cholesterol levels.

Keyword(s):

Feed conversion ratio, Haugh unit, Malondialdehyde, yolk cholesterol, yolk lipid oxidation

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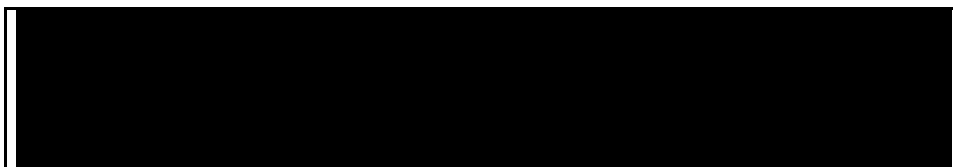


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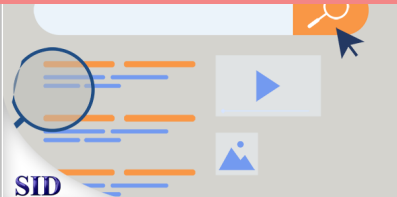


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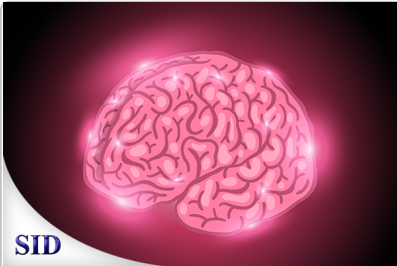


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