

Evaluation of egg production and egg quality factors when supplementing with Mintrex P on post prime aged egg layers.

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Trace minerals play a critical role in enzyme activities responsible for maintaining egg shell formation which can decrease as a hen ages. The risk of a trace mineral deficiency can lead to poor egg shell quality. Broiler breeder hens supplemented with MINTREX have previously been shown to have an improvement in shell breaking strength and an increase in the total number of eggs laid per hen. The objective of this study was to determine how supplementing post prime age laying hens with Mintrex would affect egg quality and production. Dietary treatments included: control standard layer diet (CON), control diet with Mintrex added at recommended level (M1: 20 ppm Mintrex Zn, 10 ppm Mintrex Cu, 20 ppm Mintrex Mn), control diet with Mintrex added at twice the recommended level (M2: 40 ppm Mintrex Zn, 20 ppm Mintrex Cu, 40 ppm Mintrex Mn). Each treatment consisted of 24 cages with 3 hens per cage. Hens were fed each diet starting at 50 weeks of age and continuing for 180 d. Eggshell breaking strength, Eggshell puncture strength, shell thickness, haugh unit score, feed conversion was recorded monthly. Egg production and egg weights were recorded daily. No statistical differences were observed in haugh unit, shell breaking strength, shell puncture strength, or shell thickness ($P > 0.05$); however, between 61 and 71 weeks of age M1 (78.8%, $P = 0.003$) hens had a higher percentage of hens in lay than CON hens (75.0%). The M2 hens showed trend (77.2%, $P = 0.08$) for higher percentage of hens in lay during that time period than CON hens. No difference in egg weights or feed conversion was observed ($P > 0.05$). These results indicate that supplementation of feed with Mintrex in post prime age laying hens may not improve egg quality but does improve egg production in the late lay period.

Key Words: egg quality, egg production, mineral, laying hen