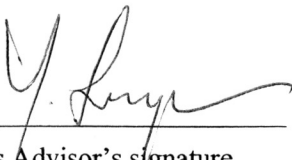


Atchara Niyomdecha 2008: Effects of Organic Zinc Supplementation on Laying Performance and Yolk Zinc Content. Master of Science (Animal Nutrition and Feed Technology), Major Field: Animal Nutrition and Feed Technology, Department of Animal Science. Thesis Advisor: Assistant Professor Yuwares Ruangpanit, Ph.D. 83 pages.

The objective of this study was to determine the effect of organic zinc supplementation on laying performance and yolk zinc content. Three hundred and sixty-Rohmann brown laying hens, approximately 53 weeks of age, were divided into 5 dietary treatments. Each treatment consisted of six replications with twelve laying hens per replication. The dietary treatments were control diet (corn soy based diet, T1), control diet supplemented with 40, 80 and 120 ppm organic zinc (T2, T3 and T4) and control diet supplemented with 120 ppm inorganic zinc (T5). All experimental diets were formulated to be isocaloric and isonitrogenous (2,750 kcal/kg and 17.5% CP). Regardless of sources, hen-day egg production and feed consumed per dozen egg tended to improve with an increase of dietary zinc levels ($P=0.1082$ and 0.1128 , respectively). Similar effects were also observed in albumen high ($P=0.1128$) and haugh unit ($P=0.0620$). However, there were no significant effects on egg weight, feed intake, livability, egg mass, yolk color, shell thickness and specific gravity, yolk zinc content and superoxide dismutase activity among dietary treatments. Regardless of sources birds fed diets containing more than 80 ppm dietary zinc expressed significant higher antibody titer against sheep red blood cell at day seventh than that of the control group ($P<0.05$). The highest expression was observed in the group supplemented with 120 ppm organic zinc. However, there was no significant difference between the group supplemented with 40 ppm organic zinc and the control group.

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Student's signature


Thesis Advisor's signature

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