# Effects of dietary replacement of corn with Taichung Sen 17 brown rice on laying performance and egg quality of Leghorn layers [1]

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## Abstract

Experiment was conducted to study the effects of dietary replacement of corn with Taichung Sen 17 brown rice on laying performance and egg quality of Leghorn layers. A total of 200 twenty-three weeks old layers were randomly assigned into five treatments. Each treatment had 40 birds. A corn-soybean basal diet was offered in the control group and Taichung Sen 17 brown rice was used to replace 50%, 75% or 100% of the corn in control diets. The fifth treatment was replacement of 100% corn with the brown rice and adding 15 mg/kg of natural xanthophyll. Feed and water were offered *ad libitum* during the trial period. The laying performance and egg quality were measured during the 12 weeks experiment. Results indicated that the daily feed intake, egg production, egg mass and feed conversion ratio were significantly ($P < 0.05$) decreased when layers were fed the diet with 100% substitution of corn irrespective of xanthophyll supplementation. Furthermore, the a value (redness) and b value (yellowness) of yolk color were significantly ($P < 0.05$) decreased as the supplementation of brown rice increased. Supplementation of xanthophyll increased the yolk color of eggs from layer fed the rice substituted diet. The hen fed with both control diet or 100% brown rice added 5 mg/kg xanthophyll had higher ($P < 0.05$) percentage on score of acceptability in panel test. In conclusion, we suggest that the amount of substitution of corn by feed graded rice for layer was 50% or lower.

Key words: Egg quality, Layer, Laying performances, Taichung Sen 17 brown rice.

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