

Evaluation of quality protein corn on egg production performance and egg quality of native chicken hens ⁽¹⁾

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Abstract

The purpose of this experiment was to evaluate the effects of quality protein corn on the egg production performance of native chicken hens. Eighty LRI female native chickens were used as experimental animals and divided into two groups at 16 weeks of age. Each group had 40 birds and each bird was caged individually. For statistics, each group was separated as four sub groups. The birds were fed the same practical diet till 19 weeks of age. The experiment started at 20 weeks of age. The control group fed with corn-soybean layer diet; the corn was imported common corn. The treatment group used the same formula but the corn was quality protein corn produced by Agriculture Research Institute. The duration of experiment was 12 weeks. Water and feed were provided ad libitum. General composition and essential amino acid content of both corns were chemically analyzed and compared. Egg production, feed intake and egg quality were recorded, determined and compared. Crude protein and crude fat of quality protein corn were higher than those of common corn (8.62% vs. 7.31%; 3.68% vs. 3.40%). For essential amino acid composition, methionine content of quality protein corn was lower than common corn (0.10% vs. 0.12%), but cysteine of quality protein corn was higher (0.14% vs. 0.08%). Lysine and arginine contents of quality protein corn were higher than common corn (0.30% vs. 0.20%; 0.44% vs. 0.31%). The results of feeding experiment indicated that quality protein corn had no significant effect on average egg weight, feed intake and hen-day egg production. Quality protein corn had better feed conversion ratio. It can save 0.19 kg feed for production of 1 kg of egg. However no significant difference was found. For egg quality, thick albumin and Haugh unit had no significant difference between two groups. For egg yolk color, quality protein corn fed group was significantly darker than common corn since the 2nd week ($P < 0.05$). For egg shell strength, both groups had no significant difference except that common corn was higher than quality protein corn at the 6th week ($P < 0.05$). The results indicated that crude protein, crude fat and lysine contents of quality protein corn were higher than those of common corn. However, methionine of quality protein corn was lower. Quality protein corn can make egg yolk color dark quickly. However, under practical formulation of layer diets, no significant improvement of egg production performance of quality protein corn was found. It indicated that common corn can meet the requirement of egg production under practical formulation.

Key words: Quality protein corn, Native chicken, Egg production.

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