

Effect of Replacement Soybean Meal by Cottonseed Meal in Diet Supplemented With Lysine on Broiler Performance

Abstract

The aim of this study was the determination of optimum level of supplemental L-lysine. HCL in starter cottonseed-based diet of broiler chicks. Graduation level of L-Lys. HCL were added to the basal diet of the expense of corn starch (0, 1/0, 2/0, 3/0, 4/0, and 0/5). Soybean meal was replaced with cottonseed meal by 50:50 weight bases. Growth performance and carcass composition were evaluated during the experiment. The results showed that graded level of supplemental Lys significantly affected the body weight gain, feed conversion, feed intake, breast meat yield, thigh yield and economic efficiency ($p < 0/05$). However, treatment effect on carcass percentage and livability were not significant ($p > 0/05$). Either linear broken-line or quadratic broken line model were used to determination break points of optimum levels of supplemental Lys. Based on linear broken line analysis, the break point for body weight gain, feed conversion, breast meat yield and thigh yield were 0/24, 0/26, 0/35 and 0/22 % of diet, respectively. The respected break points were 0/39, 0/15, 0/52, 0/33 % of diet using quadratic broken line. In conclusion, usage of cottonseed meal in starting broiler chicks might increases the importance of supplemental Lys. Although some researchers suggested that inclusion of cottonseed meal in broiler diet should be limited up to 5% of diet, the current study revealed high inclusion (15% of diet) of cottonseed meal in broiler diet with supplemental Lys did not reduce the growth performance. In addition the optimum levels of supplemental Lys in cottonseed-based diet are influenced by response criteria and statistical models.

Key words: broiler, cottonseed meal, lysine, performance, broken line model.



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