Abstract

Two bioassays were conducted to determine the ideal ratio of threonine (Thr) relative to lysine (Lys) in growing Japanese quails from 7 to 21 d of age. The quails were fed corn-soybean meal based diet for sufficient amounts of all of the nutrients with the exception of Lys (In the first experiment) and Thr (In the second experiment). Both male and female birds were randomized across 40 floor pens (4 replicate pens, and 10 birds per pen) and fed one of the five levels of each of the test amino acid. Body weight gain (BWG), feed intake (FI) and feed conversion ratio (FCR) responded non-linearly to graded levels of Thr (0.6–1%) and Lys (0.8-1.4%). Lys requirements for BWG, breast meat yield (BMY), leg meat yield (LMY), and FCR were estimated at 1.06%, 1.03%, 1.12% and 1.06%, of diet by the use of linear broken-line model. Using quadratic broken-line model, the corresponding values were estimated at 1.13%, 1.13%, 1.28% and 1.19%, of diet, respectively. Thr requirements for BWG, bursa and FCR were estimated at 0.9%, 0.8%, and 0.9%, of diet using linear broken-line model. Using quadratic broken-line model, the corresponding values were estimated at 0.85% and 0.98% of diet, respectively. Considering BWG as the response criterion, the ideal ratios of Thr: Lys was 0.76 for growing Japanese quails.

Key words: Japanese quail, Lysine, Threonine, Ideal ratio
Determination of the ideal ratio of threonine to lysine in growing Japanese quails

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