Performance and Intestinal Microstructure of Broiler Chickens Supplemented with Methionine

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Abstract

This experiment consisting of two studies was conducted to evaluate the effect of supplementing a corn-soya basal diet with 0.05 to 0.15% methionine on the 42-day production performance and intestinal microstructure of broiler chickens. The first study consisted of 160 straight-run day-old Cobb broiler chicks randomly assigned to four treatments replicated four times each following a completely randomized design (CRD). It was found that 0.15% Met supplementation produced the heaviest birds followed by 0.10% or 0.05% Met and the control, respectively. Consequently, the birds fed 0.05% to 0.15% Met diets gained more weight. Feed consumption was also improved in the birds fed the three Met diets ($P<0.05$). Consistently, the Met-fed birds had better feed conversion efficiency compared to the control. Although not subjected to statistical analysis, Income Over Feed and Chick Cost (IOFCC) was higher in the groups fed with Met-supplemented diets. The second study found that the birds fed with Met-supplemented diets have higher duodenum, jejunum, and ileum villus height compared to the control. Duodenal crypt length was markedly increased in the Met-fed birds at days 28 and 42. The birds fed with 0.05% Met had deeper Jejunum crypt length at day 42. On the contrary, it was observed that the control group had higher ileum crypt length than any of the three Met groups. It is therefore concluded that supplementing a corn-soya diet with Met at 0.05% to 0.15% can enhance the growth performance of broiler chicken and did not produce any significant adverse effect on their intestinal microstructure.