

The Effects of Dietary Lysine, Crude Protein, Energy and Feed Allocation on Broiler Breeder Hen Performance

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ABSTRACT

This study was conducted to investigate the effects of varying levels of dietary lysine and feed allocation, on the performance of female broiler breeders. In trial 1, 900 Cobb breeders from 26 to 45 weeks of age were used. The first four treatments had a fixed level of lysine throughout the experimental period, with 1200, 1070, 930 and 800 mg Lysine/bird/day and the last two treatments had their levels of lysine changed every two weeks, with treatment five started off with 1200 mg lysine/bird/day followed by a gradual decrease up to 975 mg lysine/bird/day at 45 week old, while treatment six started with the lowest level of lysine, 800 mg/bird/day and at 45 week old the intake was 1025 mg/bird/day. The rations provided 1900KJ ME/ day, the birds received 160 g of feed/day. Dietary lysine did not affect body weight, egg production, or egg composition. There were no significant differences in age at 50%, or peak production. Birds receiving 1070 and 1025 mg lysine/bird.day had a slightly, but not significantly, higher production in the current study. Birds receiving 1200 mg lysine/bird.day had the highest body weight and the lowest egg production. In trial 2, 900 broiler breeder hens were used. Protein intake and feed allocation were changed for each treatment at 26, 38 and 50 weeks and ending at 60 weeks. Birds on T1 were fed a constant CP content (145 g protein/kg) but a decreasing feed allocation (175 to 145 g/d). Those on T2 had a constant feed allocation (160 g/d) and a decreasing CP (166 to 124 g/kg) while those on T3 had varying levels of protein (166, 124 and 166 g/kg) and feed allocation (160, 160, 145 g/d). Mean cumulative protein intakes were 5.2, 5.3 and 4.8 kg/bird and mean energy intakes were 417, 412 and 402 MJ/bird for T1, T2 and T3 respectively. Body weights differed significantly at the end of the trial ($P<0.05$) with T2 showing the highest weight gain. However, egg production, egg weight and egg output were not affected by treatment. These breeders did not benefit from the additional protein and energy provided in the first and second periods by T1 and T2 (*vs.* T3), nor did they benefit from the additional energy provided in the final ten weeks of production by T2.