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Effect of Synthetic L-Lysine and DL-Methionine Amino Acids on Performance of Broiler Chickens

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Abstract : Reduction of feed cost for broiler production is at most importance in decreasing the cost of production. The objectives of this study were to evaluate the use of synthetic amino acids (L-lysine – DL-methionine) instead of super concentrate and groundnut cake versus meat powder as protein sources. A total of 180 male broiler chicks (Cobb – strain) at 15 day of age (DOA) were selected according to their average body weight (380 g) from a broiler chicks flock at Elbashair Farm. The chicks were randomly divided into six groups of 30 chicks. Each group was further sub divided into three replicates with 10 birds. Six experimental diets were formulated. The first diet contained groundnut cake and super concentrate as the control (GNC + C); in the second diet, meat powder and super concentrate (MP + C) were used. The third diet contained groundnut cake and amino acids (GNC + AA); the forth diet contained meat powder and amino acids (MP + AA). The fifth diet contained groundnut cake, meat powder and super concentrate (GNC + MP + C) and the sixth diet contained groundnut cake, meat powder and amino acids (GNC + MP + AA). The formulated rations were randomly assigned for the different sub groups in a completely randomized design of six treatments and three replicates. Weekly feed intake, body weight and mortality were recorded and body weight gain and feed conversion ratio were calculated. At the end of the experiment (49 DOA), nine birds from each treatment were slaughtered. Live body weight, carcass weight, head, shank, and some internal organs (gizzard, heart, liver, small intestine, and abdominal fat pad) weights were taken. For the overall experimental period the (GNC + C +MP) consumed significantly (P≤0.01) the highest cumulative feed while the (MP + AA) group consumed the lowest amount of feed. The (GNC + C) and the (GNC + AA) groups had the heaviest live body weight while (MP + AA) had the lowest live body weight. The overall FCR was significantly (P≤0.01) the best for (GNC + AA) group while the (MP + AA) reported the worst FCR. However, the (GNC + AA) had significantly (P≤0.01) the lowest AFP. The (GNC + MP + Con) group had the highest dressing % while the (MP + AA) group had the lowest dressing %. It is concluded that amino acids can be used instead of super concentrate in broiler feeding with perfect performance and less cost and that meat powder is not advisable to be used with amino acids.

Keywords : broiler chickens, DL-lysine, methionine, performance
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