

Public Abstract

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Title:Effects of reduced protein diets using the Missouri Ideal Turkey Protein on male turkeys from 0 to 21 weeks of age

Protein is one of the major cost components in turkey diets. When diets are formulated on an ideal protein basis, the levels of crude protein decrease with the use of amino acids (AA); performance is maintained and feed costs are decreased. Thus, with the use of the Missouri Ideal Turkey Protein, there is potential for a significant protein reduction with the addition of synthetic AA sources. This experiment was conducted to determine if protein can be further reduced and replaced with synthetic AA (methionine, lysine, threonine, tryptophan, valine). The experimental objectives were to determine if reduced protein turkey rations can successfully provide matching performance to an industry standard through additions of these available AA. The experiment was designed as a randomized complete block with 450 toms assigned to one of five treatment groups. Each treatment group consisted of 8 replicates with 10 toms per replicate. The five treatments consisted of an industry standard control (PC), an ideal protein based diet (IP), and a 3% (IP3), 6% (IP6) and 9% (IP9) crude protein (CP) reduction from the ideal protein based diet. Amino acids were balanced based on our determined ideal protein in turkeys and additional synthetic amino acid sources made up for the reduced protein level. Weight gain and feed intake were recorded at 3 week intervals. Body composition was taken at the conclusion of the trial (21 weeks). Birds fed the IP diets showed similar growth to that of the PC. Birds fed the IP3 diets also showed similar growth to that of the PC. Birds fed the IP6 diets showed a 6% reduction in growth from the PC. Birds fed the IP9 diets showed a 9% reduction in growth from the PC. Further, there was no effect of dietary treatments on feed to gain or carcass composition. These results suggest that with the addition of synthetic amino acids, CP can be reduced by 3% in turkey rations without affecting performance.