

Response of market turkey toms to dietary protein and threonine levels in diets containing corn distillers dried grains.

S.L. Noll* and J. Brannon, *University of Minnesota, St. Paul.*

The response of market turkey toms to diet threonine level was examined during 8 to 19 wks of age. Diets were formulated to contain 90, 94, 100, and 106% NRC digestible thr from intact protein. In addition, supplemental thr was used to reach 100 or 106% NRC thr. Diets were composed primarily of corn, soybean meal, poultry by-product meal (PBM, 10%) and corn distillers dried grains with solubles (DDGS, 20%). Large White male turkey poults (Nicholas strain) were randomly assigned to pens (10/pen) at 8 wks of age. The treatments were (T): 1. Corn soy control, 100% NRC thr; 2. PBM-DDGS 106% NRC thr; 3. As T2, plus 6% NRC thr; 4. As T2, 100% NRC thr; 5. As T4, plus 6% NRC thr; 6. As T4, plus 12% NRC thr; 7. As T2, 94% NRC thr; 8. As T7 plus 6% NRC thr; 9. As T7 plus 12% NRC thr; 10. As T2, 90% NRC thr; 11. As T10 plus 10% NRC thr. All diets were supplemented as needed with lys and met to meet the specific NRC recommendations for these amino acids. The ratio of calcium: inorganic phosphorus was maintained at 2:1. Each diet was fed to 8 replicate pens. The experimental design was a completely randomized block design. Dietary treatment affected body weight at all ages ($P < .0001$). BW at 19 wks of age was similar for T 1, 2, 3 and 4. Decreasing diet NRC thr to 94 and 90% significantly decreased BW while supplementation with thr improved body weight but not to the level of the control at 100% NRC. Increased average daily gain response to supplemental thr (6% NRC thr) was observed for 100, 94, and 90% NRC thr treatment groups during 8-11 and 11-14 wks of age; and, only in the 90% NRC thr treatment during 14-17 and 17-19 wks of age. Improved feed efficiency in response to supplemental thr (6% NRC thr) was observed for the 94% NRC treatment during 8-11 wks; and, for the 90% NRC thr group during 8-11 and 17-19 wks of age. In diets containing a large amount of alternative protein (10% PBM and 20% DDGS), a gain response to supplemental thr was observed when diet thr from intact protein was less than 106% NRC during 8-11 wks, less than 100 % NRC during 11-14 wks, and less than 94% NRC during 14-19 wks of age.

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