Inclusion levels of corn distillers grains with solubles and poultry byproduct meal in market turkey diets.

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Alternative feed ingredients allow flexibility in formulation relative to diet cost. In the Midwestern United States, animal protein and corn derived distillers grains with solubles (DDGS) are often priced favorably to enter diets at levels considered “excessive”. A feeding trial was conducted to examine different inclusion levels of poultry byproduct meal (PBM) and DDGS and their combined effect on market tom performance during 5-19 wks of age. Large White male turkey poults (Nicholas strain) were randomly assigned to pens (10/pen) at 5 wks age and fed one of the following diet treatments (T): 1. Corn and soybean meal control; 2. As T1 with PBM (8%); 3. As T1 with PBM (12%); 4. As T1 with DDGS (10%); 5. As T1 with DDGS (20%); 6. As T 2 and T4; 7. As T2 and T5; 8. As T3 and T4; and, 9. As T3 and T5. Diets were formulated using digestible amino acids. Diet protein level was established by using intact protein to meet the digestible NRC thr at 100% of the NRC recommendation (thr). All diets were supplemented as needed with lysine and methionine to meet the specific NRC recommendations for these amino acids. The ratio of calcium: phosphorus was maintained at 2:1 to accommodate the higher levels of phosphorus in the diets containing high levels of PBM and DDGS. Each diet was fed to 10 replicate pens. The experimental design was a completely randomized block design with a factorial arrangement of PBM and DDGS inclusion levels. At 19 wks of age, dietary treatment significantly affected 19-wk body weight and feed efficiency (5-19 wks) ($P<.001$). The body weight of the corn-soy control diet (T1) averaged 20.18 kg. Diets containing PBM (8 or 12%) or DDGS (10 or 20%) were not significantly different from the control. BW of turkeys fed diets containing PBM (8 or 12%) in combination with 20% DDGS was less than that of the control by 3.3%. A significant interaction existed for inclusion of PBM and DDGS ($P<.02$) for feed efficiency. Feed/gain of turkeys fed diets containing PBM (8 or 12%) or DDGS (10 or 20%) were not significantly different from the control. However, the feed/gain increased for turkeys fed diets containing PBM (8 or 12%) in combination with 20% DDGS, which were significantly different from the control by 5 to 6 points. In summary, performance of turkeys fed 20% DDGS diets was not different from the control except when used in combination with high levels of PBM.

Key Words: turkey, distillers grains, poultry byproduct

Presented at the 2006 Poultry Science Association Annual Meeting
http://www.poultryscience.org/psa06/abstracts/psabs106.pdf