Market tom turkey response to protein and threonine

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A study was designed to examine performance of market turkeys to dietary protein and threonine in two types of diets: a) corn-soy-poultry by product meal and b) with distiller dried grains with solubles (DDGs). At 8 wks of age, 960 male turkeys (Large White, Nicholas) were randomized into 96 pens. Each treatment was fed to 8 pens of turkeys. The factorial study consisted of diet protein (P) (100, 95 and 90% of NRC thr), supplemental thr (T) (none, 10% NRC thr), and diet series (D) (without and with DDGs). Ingredients were analyzed for nutrient content and digestible amino acids using cecectomized roosters prior to the start of the trial. Diet protein was set by formulating to the estimated digestible thr requirement without the use of supplemental thr. Supplements of lysine and methionine were used as needed to meet those requirements. BW was measured at 3-wk intervals corresponding to diet changes. Parts and breast meat yield was determined at 19wk-1d. BW to 17 wks, parts as % of carcass weight (breast meat, thigh, drumstick, skin) and amount of breast meat were affected by P ($P<.05$) with 90% NRC thr resulting in depressed performance in comparison to 95 and 100% NRC thr. Decline in response to lowered protein was similar for D. Three-way interactions for most measurements indicated the response to supplemental thr was dependent on D and P. For the corn-soy-poultry meal diet, gain (8-19 and 17-19 wks) and breast meat yield was improved in the 90% NRC thr diet with supplemental thr ($P<.05$) to the level of the control (100% NRC thr). For DDGs series, gain (8-11 and 11-14 wks) was improved in the 95% NRC thr diet with thr ($P<.10$) to the level of the control (100% NRC thr). Turkeys responded to declines in diet protein with decreased weight and breast meat yield. The inclusion of DDGs resulted in similar performance to the corn-soy-poultry meal diet series. However, the response to supplemental thr was dependent on diet protein and composition.

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