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ABSTRACT ([Poult. Sci. 94 \(E-Suppl. 1\)](#)):

91 The effect of supplementing a heat-stable xylanase in cornsoy based broiler diets in various dietary phases. I. B. Barasch*¹,

J. L. Grimes¹, J. D. Garlich¹, J. Tyus², and J. J. Wang², ¹North Carolina State University, Raleigh, NC, ²BioResource International, Inc., Durham, NC.

Carbohydrases, investigated as a way to improve nutrient utilization from poultry diets by improving AME allow for a reduction in dietary fat, an important, but costly ingredient. A study was conducted to evaluate the efficacy of a heat-stable xylanase (Xyl) in broiler diets when supplemented during different dietary phases. Corn-soy diets were fed to Ross 344 × 708 male chicks from hatch to 42d. There were 2 formulated energy levels, PC (breeder recommendations) and NC (200 kcal/kg ME reduction) achieved by removing fat from the formulation. Treatments (T, 8) used: (1) PC, (2) PC + Xyl, (3) NC, (4) NC + Xyl, (5) Xyl in starter phase (0–14d), (6) Xyl in starter and grower phases (0–28d), (7) Xyl in grower and finisher phases (14–42d), and (8) Xyl in finisher phase only (28–42d). For treatments 5–8, during phases receiving Xyl supplementation (20,000 XU/kg of feed; Xylamax, BioResource International, Inc.), enzyme was included in NC energy level and PC diets were fed during remaining phases. Birds were housed in 96 floor pens with each T replicated 12 times with 12 birds per pen in a curtain-sided house. Bird and feeder weights were collected at 14, 28, and 42d to obtain BW gain (BWG), feed intake (FI), and FCR. Data were analyzed using JMP 10 with T means separated by LSMeans; T effects were considered significant at $P < 0.05$. Xyl addition during the first 14d increased BWG and improved FCR when compared with unsupplemented controls at the PC energy level. However, for the remainder of the study no T effects were observed on BWG. Cumulative FCR (0–42d) was improved in the PC diet over the NC diet (1.70 vs 1.74), however the T receiving Xyl in the starter (1.71) or finisher (1.71) phases only, had similar FCR to those receiving PC throughout the study. In this study, the greatest advantage in performance was observed during the starter phase when Xyl was supplemented in PC energy level diets. Based on results, it may be possible to reduce dietary fat and include Xyl in the finisher phase without negatively affecting overall performance. This regimen may also provide significant saving in dietary energy costs.

Key Words: xylanase, enzyme, broiler, heat-stable, energy