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

M130 Effect of a heat-stable xylanase, alone and in combination, with a commercial phytase on broiler performance from day-of-hatch until 42 days of age

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Higher prices and decreased availability of corn have increased an interest in replacing corn with alternatives such as wheat or DDGS. This has also increased the interest and use of exogenous carbohydrases in poultry feed to improve nutrient digestibility from these alternative sources. A study was conducted to evaluate the efficacy of an exogenous, heat-stable xylanase (Xylamax®, BioResource International, Inc.) in broiler chicken diets when supplemented in combination with a commercial phytase (Axtra® PHY TPT, DuPont). Eight wheat-based diets (60%) containing DDGS (10%) were fed to Ross 708 male broiler chicks from hatch until 42 d. The treatments were arranged in a 2x2x2 factorial of energy level (breeder recommended energy level or 200 kcal ME reduction), xylanase inclusion (0 or 20,000 XU/kg of feed), and phytase inclusion (0 or 500 FTU/kg feed). In diets containing phytase, available phosphorus and Ca were reduced 0.1%. Birds were housed in 96 litter-floor pens with each treatment replicated 12 times with 16 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 feed conversion ratio (FCR). Data were analyzed using JMP 10 with treatment means separated by LSMeans; treatment effects were considered significant at P<0.05. Higher (P<0.005) BWG (0-42d) was observed with the addition of xylanase (3233 vs. 3195 g) and phytase (3268 vs. 3161g) when added individually compared to diets containing no enzymes. When xylanase and phytase were added in combination, BWG was higher than birds fed no enzymes or xylanase alone but were not different than the treatments receiving only phytase. FCR was improved (P<0.0001) with the inclusion of xylanase (1.76 vs. 1.81) and phytase (1.75 vs. 1.81) alone compared to the control. When birds were fed a diet containing xylanase and phytase, regardless of energy content, FCR was improved (P<0.001) to 1.73 versus birds receiving no enzymes (1.84). This exogenous xylanase improved broiler performance from hatch until 42d when included in a wheat-based diet alone and additional improvements were observed when added in combination with a commercial phytase.

Key Words: xylanase, enzyme, heat-stable, phytase, broilers