



Xylamax[®]

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ABSTRACT ([J. Anim. Sci. Vol. 93, Suppl. s3/J. Dairy Sci. Vol. 98, Suppl. 2](#)):

115 Effects of supplemental xylanase on growth, gut health, and ileal nutrient digestibility in nursery pigs fed corn-soybean meal-based diets with two dietary energy levels.

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This study was conducted to determine the effects of supplemental xylanase (Xylamax, BioResource International, Inc., Durham, NC) on growth performance, gut health, and ileal nutrient digestibility in nursery pigs fed corn-soybean meal based diets with 2 dietary energy levels. Pigs (60 barrows and 60 gilts weaned at 21 d of age) had a 4-d adaptation period after weaning. On 25 d of age (7.77 ± 0.63 kg BW), pigs were allotted to 4 treatments (2×2 factorials arrangement: 3,427 or 3,323 kcal ME/kg of feed and 0 or 1,400 U of enzyme/kg feed) with 10 pens (5 barrow and 5 gilt pens, and 3 pigs per pen) per treatment in a randomized complete block design, and the feeding period lasted for 3 wks. Growth performance was measured weekly. Titanium dioxide (0.3%) was added to diets from d17 to 21 as an indigestible marker. Blood samples were taken on d 20 to measure tumor necrosis factor- α (TNF- α) and malondialdehyde (MDA). On d 21, 24 pigs (1 from each pen and 6 pens per treatment) were euthanized to obtain the duodenal and jejunal mucosa to measure TNF- α and MDA. Jejunal and ileal digesta were collected to measure viscosity and ileal nutrient digestibility. Data were analyzed using the Mixed procedure in SAS with pen as the experimental unit using treatments and sex as fixed effects and initial BW as a random effect. The G:F was improved ($P < 0.05$) by increasing dietary ME (0.774 to 0.800) and xylanase supplementation (0.775 to 0.799), respectively. Dietary energy levels and xylanase supplementation did not affect viscosity and ileal nutrient digestibility. High ME diet increased ($P < 0.05$) the concentrations of MDA in jejunal mucosa (0.74 to 1.25 nmol/mg protein) and plasma (16.89 to 23.79 μ M). Supplemental xylanase decreased ($P < 0.05$) MDA (1.02 to 0.88 nmol/mg protein) and TNF- α (3.03 to 2.50 pg/mg protein) concentrations in duodenal mucosa. Collectively, supplemental xylanase (1,400 U of enzyme/kg feed) in corn-soybean meal based pig diets enhances growth performance and gut health of nursery pigs as indicated by increased feed efficiency and reduced MDA and TNF- α concentrations in duodenal mucosa, respectively.

Key Words: growth performance, gut health, xylanase