Identification of a feed supplement that ameliorates the effects of high-S water would benefit ruminant livestock producers in those regions. The objective of this study was to determine if supplementing Mo, a metallic trace element known to interact with S, improves health and performance of forage-fed steers administered high-S drinking water. Yearling steers (n = 96) were randomly assigned to 1 of 3 treatment groups for a 56 d trial: low-S water (LS; 375 mg SO4 ·L−1), high-S water (HS; 2,218 mg SO4 ·L−1), or high-S water plus Mo (HSMO; 2,218 mg SO4 ·L−1; 100 mg Mo-kg−1 ·DM). All treatments were supplemented with 10 mg Cu-kg−1 ·DM. Body weight and ruminal H2S gas concentration were collected on d -1, 29, and 57. Animals were monitored ≥ 3 times daily for general health and signs of sPEM. One case of sPEM was confirmed in the HS treatment group. Feed intake was lower in HSMO steers than HS (P = 0.018) and LS (P = 0.002) steers. No intake differences were observed between LS and HS steers. Average daily gain was lower (P < 0.001) in HSMO steers than LS and HS steers, with HS steers being intermediate to the other two treatments. No differences (P > 0.05) in water intake were observed. There was no effect of treatment on initial or mid-trial ruminal H2S gas concentrations. Final day ruminal H2S gas concentration was greater in HSMO steers compared to LS (P = 0.006) and HS (P = 0.013) steers; no differences were observed between LS and HS steers. These results indicate that a Mo supplement is not beneficial in counteracting the effects of high-S water consumption, and may exacerbate the effects associated with high dietary S.

Key Words: sulfur, molybdenum, polioencephalomalacia

Graduate Student Poster Competition-Ph.D.


Poor performance and S-induced polioencephalomalacia (sPEM) have been observed in regions with high-S livestock drinking water.


A total of 1,080 pigs (PIC 337 × 1050; 35.1 kg) were used in a 99-d experiment to evaluate the effect of conventional dry (CD) and wet-dry (WD) feeder designs, gender (barrow or gilt), and dried distillers grains with solubles (DDGS) level (20 or 60%) on finishing pig performance. There were 5 pens per treatment for the 8 treatments, and 20 pens for the main effects. Pigs were sorted by gender into groups of 27, weighed, and allotted to pens. Diets were fed in 3 phases to d 78. On d 78, 2 pigs/pen were weighed and removed for harvest. Remaining pigs were fed a common diet containing 20% DDGS and 5 ppm Paylean until carcass harvest. Pen were weighed and removed for harvest. Remaining pigs were fed a common diet containing 20% DDGS and 5 ppm Paylean until carcass harvest. For the main effects, pigs were fed a common diet containing 20% DDGS and 5 ppm Paylean until carcass harvest. Here we report the effects of feeding, diet quality, and DDGS level on pig performance, carcass characteristics, and economic returns.

Key Words: dried distillers with solubles, tallow, pork quality


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Key Words: dried distillers with solubles, tallow, pork quality

110 Mannan oligosaccharides (MOS) modulate gene expression profile in pigs experimentally infected with porcine reproductive and respiratory syndrome virus (PRRSV). T. M. Che*, R. W. Johnson, K. W. Kelley, W. G. Van Alstine, K. A. Dawson, and C. A. Moran, University of Illinois, Department of Animal Sciences, Urbana, Purdue University, Animal Disease and Diagnostic Laboratory, West Lafayette, IN, Alltech North American Bioscience Center, Nicholasville, KY.

This study characterized gene expression in peripheral blood mononuclear cells (PBMC) and bronchoalveolar lavage fluid (BALF) cells from control-or MOS (Bio-Mos)-fed pigs with or without PRRSV at d 7 postinfection (PI). Weaned pigs (3 wk old) fed 0% or 0.2% MOS diets were intranasally inoculated with PRRSV or medium at 5 wk old. Total RNA (3 pigs/treatment) was extracted from cells. Double-stranded cDNA was amplified, labeled, and further hybridized to the Affyme-