
PSI-2 Effect of Gruel Feeding and Oral Dextrose on the Survivability of Pigs After Weaning.

Andrew W. Boschert¹, Madie R. Wensley², Mike D. Tokach², Robert D. Goodband², Jordan T. Gebhardt², Jason C. Woodworth², Joel M. DeRouchey², Ethan Stephenson³, ¹*Iowa State University*, ²*Kansas State University*, ³*Pillen Family Farms*

Abstract: Two experiments were conducted using 3,087 (Exp. 1) and 988 (Exp. 2) pigs to determine the effect of gruel feeding (Exp. 1) and oral glucose (Exp. 2) on pig survivability after weaning. Upon arrival to the nursery, the smallest 10% of pigs were selected and randomly placed in designated pens with 61 to 108 pigs/pen. Pens of small pigs were assigned to 1 of 2 treatments in a completely randomized design. Treatment consisted of gruel feeding 2 or 4 times/day for 14-d post-placement. At each gruel feeding, approximately 1.13 kg of solid feed was added to a round Rotecna bowl (Rotecna S.A., Agramunt, Spain) located at the front of the pen. Water was added at a decreasing rate over time. From d 0 to 5, 6 to 10, and 11 to 14 the ratio of water to feed was 3:1, 1:1, and 1:3, respectively. In Exp. 2, every other pig removed from general population or pens of small pigs for welfare considerations received a single 10 mL oral dose of a 50% dextrose solution and were placed in sick/fallback pens. All removed pigs were tagged and blood glucose measured prior to and 30 min after entering sick/fallback pens. Overall, gruel feeding small pigs 2 or 4 times/day for 14-d post-placement did not influence ($P > 0.10$) mortality from weaning to the end of gruel feeding (3.78 vs 4.25%, respectively). Likewise, dextrose administration did not influence ($P > 0.10$) pig mortality after removal to approximately d 38 after weaning (21.4 vs 23.4% respectively), even though blood glucose increased ($P < 0.001$) in those administered dextrose (11.4 vs 19.1 mg/dL). In summary, gruel feeding 4 times/d or providing sick/fallback pigs glucose supplementation does not improve survivability of pigs after weaning. More research is needed using alternative protocols to understand the value of gruel feeding on pig survival post-weaning.

Keywords: glucose, gruel, pig, weaning

PSI-4 Effects of Sorghum Inclusion in Lamb Diets on Apparent Total Tract Digestibility.

Tiffany A. Oberdorf¹, Zachary T. Buessing¹, Skyler S. Scotten¹, Charles A. Zumbaugh¹, Cassandra K. Jones¹, ¹*Kansas State University*

Abstract: The objective of this experiment was to evaluate the effect of grain sorghum inclusion on the apparent total tract digestibility of lamb diets. This experiment utilized 24 Rambouillet lambs (46.1 ± 3.90 kg) that were previously used in a growth experiment. Animals were housed in 1 of 24 pens with 1 lamb per pen and 6 pens per treatment. Lambs were randomly assigned 1 of the 4 treatment diets prior to the growth experiment and remained on the same treatment for over the 10-d experimental period. Treatments included 1) Control (0% sorghum inclusion); 2) Sorg10 (10% corn substituted for sorghum); 3) Sorg20 (20% corn substituted for sorghum); and 4) Sorg30 (30% corn substituted for corn). Diets were ground using hammermill and titanium dioxide was added to the ground diet at 0.4% as an indigestible marker. Lambs were fed these diets for 7-d prior to fecal sample collection to allow for steady-state marker concentrations. Fecal grab samples were collected every 6 hours over the final 3 d and were composited by animal to represent each 2-hour period of a 24-hour cycle. Feed and composited fecal samples were analyzed for crude fat, crude protein, ADF, NDF, and ash. Data were analyzed using the LM function in R with a fixed effect of treatment. Significance was defined at $P < 0.05$ and means were separated using Tukey's HSD where appropriate. Sorghum inclusion did not affect ($P > 0.16$) crude protein, crude fat, or acid detergent fiber digestibility. Neutral detergent fiber digestibility was reduced ($P = 0.02$) for animals consuming Sorg20 and Sorg30 compared with the control, and Sorg10 was intermediate. Organic matter digestibility tended to decrease ($P = 0.08$) with increasing sorghum inclusion. In conclusion, replacing corn with sorghum at levels up to 30% had minimal impact on nutrient digestibility in growing lambs.

Keywords: digestibility, lamb, sorghum