

the two dietary treatments. This study showed corn that contains the *E. coli* gene for glutamate dehydrogenase was nutritionally equivalent to the non-altered variety.

Key Words: Maize, Transgenics, Pigs

913 The digestive fate of the *gdhA* transgene in corn diets fed to weanling swine. J. M. Beagle*¹, G. A. Appgar¹, K. L. Jones¹, K. E. Griswold², X. Qui¹, and M. P. Martin¹, ¹*Southern Illinois University, Carbondale*, ²*Penn State Extension, Lancaster*.

A transgenic corn containing *E. coli* glutamate dehydrogenase (*gdhA*) was used in diets fed to weanling swine and the digestive fate of the *gdhA* transgene was traced. Eight groups of 8 pigs were fed a commercially available (non-*gdhA*) starter feed for 2 wk. One pig was randomly selected from each pen, sacrificed, and negative control samples were collected. The remaining 56 pigs were fed a diet containing 57.97% *gdhA* corn for 2 wk. All pigs were then sacrificed and treatment samples were collected. Samples from both control and treatment pigs included digesta from the stomach, distal ileum, and distal colon, liver, 10th rib muscle, and white blood cells and plasma from the hepatic portal vein. Total genomic DNA was extracted and concentration determined via spectrophotometry. Polymerase chain reaction (PCR) was performed with primers designed to amplify a 456 bp region of the *gdhA* gene, and PCR products were analyzed using gel electrophoresis. DNA extracted from the *gdhA* positive corn acted as a positive control for the PCR and gel electrophoresis while DNA extracted from a commercially available non-*gdhA* corn and an equivalent volume of distilled water acted as negative controls. DNA extracted from the *gdhA* positive diet ensured the transgene was detectable in the diet. The level of detection allowed as little as 0.3 ng transgenic corn DNA per each 20 ul reaction to be detected even when confounded with 6.4 ug of SBM or 1.5 ug non-*gdhA* corn. The 456 bp region of the *gdhA* transgene was detected in 71% of the stomach digesta samples from treatment animals, but was not detected in the small and large intestine, WBC, plasma, liver, or muscle samples. No transgenic DNA was detected in any sample from control animals. These data suggest that degradation of this transgene began in the stomach and that the transgene was degraded beyond detection by the time the digesta reached the distal ileum.

Key Words: Glutamate Dehydrogenase, Transgenic, Corn

914 Effects of increasing pantothenic acid on growth performance and carcass characteristics of finishing pigs reared in a commercial environment. C. N. Groesbeck*, R. D. Goodband, M. D. Tokach, S. S. Dritz, J. L. Nelssen, and J. M. DeRouchey, *Kansas State University, Manhattan*.

An experiment using 1,080 pigs (PIC, initially 40.3 kg) was conducted to evaluate added pantothenic acid (PA) on growth performance and carcass characteristics. Pigs were blocked by weight and gender, and were randomly allotted to one of four dietary treatments. There were 10 pens per treatment with a mean of 27 pigs per pen. Pigs were fed the experimental corn-soybean meal, 5% added fat diets in four phases. Pigs were fed the control diet (no added PA) or the control diet with 22.5, 45 or 90 ppm of added PA from d-calcium pantothenate. Pigs were fed the assigned dietary treatments from 40.3 to 123.6 kg (d 0 to 98), and transported to a commercial packing facility to collect carcass measurements. Pigs were weighed and feed intake was determined every 14 d. There were no PA gender interactions ($P > 0.05$) observed. Increasing dietary PA had no effect ($P > 0.05$) on ADG, ADFI, or feed efficiency (G/F) from d 0 to 98. Barrows had greater ($P < 0.01$) ADG and ADFI than gilts. Increasing pantothenic acid has no effect ($P > 0.05$) on hot carcass weight, dressing percent, fat free lean index (FFLI), average backfat, and loin depth. Gilts had less ($P < 0.001$) backfat and a greater ($P < 0.001$) FFLI than barrows. There were no ($P > 0.05$) gender differences in dressing percent or loin depth. Increasing dietary pantothenic acid during the grow-finish phase does not appear to provide any advantage in growth performance or carcass composition of commercially reared finishing pigs.

Item ^a	0.0	22.5	45.0	90.0	SE
Average wt, d 98	123.11	123.12	122.36	123.76	1.05
ADG, kg	0.85	0.84	0.85	0.87	0.01
Gain/Feed	0.37	0.36	0.36	0.37	0.01
Fat free lean index	50.42	50.36	50.05	50.29	0.19
Average backfat, mm	17.22	17.12	17.65	17.50	0.40

^aNo differences ($P > 0.05$)

Key Words: Pigs, Growth, Pantothenic Acid

915 Effects of reduced crude protein and fiber supplementation on nitrogen and phosphorus digestibility and manure generation. D. M. Sholly*, S. L. Hankins, M. C. Walsh, A. L. Sutton, and B. T. Richert, *Purdue University, West Lafayette, IN*.

Sixteen crossbred barrows (avg initial BW = 32.6 kg) were allotted by weight to 4 experimental diets (4 pigs/diet) in a 2 x 2 factorial design comparing two crude protein (CP) levels and 0 or 10% wheat bran (WB). Dietary trts were: 1) Control (CTL), 17.7% CP; 2) CTL + 10% WB; 3) Low Nutrient Excretion diet (LNE), 13.9% CP, HAP corn, phytase, and synthetic amino acids; and 4) LNE + 10% WB. A 28 d experiment included a 5 d adjustment period to metabolism pens, a 20 d collection of total feces and urine (3 times/wk) for storage in 16 individual PVC columns (122 x 38 cm), and a 3 d total collection to determine nutrient digestibility. There were no differences in initial and final BW among dietary trts. Inclusion of WB decreased ADFI (4.00 vs. 3.66 kg/d; $P < .007$) by 8.5%. Manure generation (as-is basis) was not different among dietary trts. LNE diets reduced manure DM (kg/d) ($P < .004$) by 18.2%, however, WB inclusion increased manure DM (kg/d) by 12.5% ($P < .02$). Manure pH (avg 6.91) was not affected by dietary CP or WB. LNE diets tended to decrease total N (TN) concentration (as-is basis) in the stored manure by 20% ($P < .09$). Manure TN concentration (DMB) was decreased ($P < .0001$) by 14.6% and 21% for the LNE diets and 10% WB inclusion, respectively. Manure ammonium N (AmmN; DMB) concentration was decreased by 22.4% with WB ($P < .003$). The LNE diets decreased ($P < .003$) stored manure total P (TP) concentration (as-is basis) by 38% and TP excreted by 48.2% (4.25 vs. 2.2 g/d; $P < .0001$) when compared to CTL diets. Dietary trts did not affect N and P digestibility. LNE diets reduced total AmmN excreted by 35.5% (3.03 vs. 1.96 g/d; $P < .002$), fecal TP (5.61 vs. 3.67 g/d; $P < .002$) by 34.6%, and total WSP (3.76 vs. 1.74 g/d; $P < .0005$) by 54%. The use of reduced dietary CP and P diets can significantly reduce the amount of N and P excreted by growing pigs. The inclusion of 10% WB did decrease N and AmmN excretion, but also decreased pig ADFI which may hinder growth performance.

Key Words: Pigs, Crude Protein, Fiber

916 Comparison of models fitted to electronically recorded swine growth data over a limited test period. G. Vander Voort* and C. F. M de Lange, *University of Guelph, Guelph, ON, Canada*.

The evaluation of alternative management, marketing and breeding strategies in pork production systems requires knowledge of variation in pig growth patterns. The objective of this research was to evaluate alternative mathematical functions and statistical procedures to represent growth patterns (BW vs time) of individual pigs between about 25 to 120 kg BW. Electronically recorded daily BW data from an 84 d period for 40 group-housed pigs was analyzed. Data was filtered to identify and edit outliers. Three functions (modified Bridges, Gompertz, and exponential second order polynomial) were fit for each individual pig using the non-linear procedure of SAS. A second order polynomial was also fit for each individual pig using a random regression procedure. Least square means of residuals (RESls) for daily BW were calculated for each function and 21 d interval of the test period. Across intervals, the smallest RESls were observed for the random regression derived second order polynomial (-0.16 to -0.01 kg; SE 0.11), these values did not differ from zero and across 21 d interval ($P > 0.10$). For the other functions, RESls differed from zero ($P < 0.05$) for at least one 21 day interval. For the Gompertz function and d 63 to 84 of the test period, the absolute RESls was largest (-1.04 kg; SE 0.12), indicating a systematic bias in the prediction of BW during the last 21 d of the