

lower scores than pigs fed CHLOR ($P < 0.05$). Thus, in this model of enteric disease challenge in weaned pigs, the presence of dietary CHLOR altered the pattern of fecal shedding of Salmonella.

Key Words: Mannanoligosaccharide, Sodium Chlorate, Bacterial Shedding

154 Effects of Ractopamine HCl (Paylean) on Finishing Pig Growth and Variation. M. R. Barker*, S. S. Dritz, R. D. Goodband, M. D. Tokach, C. N. Groesbeck, S. M. Hanni, C. W. Hastad, T. P. Keegan, K. R. Lawrence, and M. G. Young, *Kansas State University, Manhattan*.

A total of 336 pigs were used in a 21-d study to determine the effect of Ractopamine HCl (Paylean, 10 mg/kg) on finishing pig growth and variation. Pigs (168 barrows and 168 gilts) were weighed and allotted to treatments in a completely random design so that within sex, each pen had the same mean BW and degree of BW variation among pigs in each pen. Fourteen pens (7 of barrows, 7 of gilts) were assigned to each treatment. Diets were a sorghum-soybean meal-based and formulated to contain 1.00% total Lys with or without 10 mg Paylean/kg. Pigs were weighed and feed intake was determined every 7 d during the 21 d experiment. Average daily gain, ADFI, feed efficiency (G/F), and pen CV were determined. Pigs fed Paylean had greater ADG and improved feed conversion compared to control pigs ($P < 0.05$; 0.939 kg/d and 0.327 vs 0.798 kg/d and 0.276, respectively). Feed intake was not affected ($P > 0.90$) by dietary treatment (2.76 vs 2.77 kg/d, respectively). Pigs fed Paylean were heavier ($P < 0.05$) at the end of the 21 d trial (120 vs 116 kg), due to higher ADG than the pigs fed the control diet. Initial pen CV was 9.2% and 8.7% for the pigs on control and Paylean diets, respectively. At the end of the 21 d study, no differences were observed in pen BW variation among dietary treatments ($P > 0.70$). Control pigs averaged a pen CV of 7.71% with 68% of the pigs between 107.4 and 125.3 kg, or a range of 8.97 kg. Pigs fed Paylean had a CV of 8.15% with 68% of the pigs between 110.1 and 129.6 kg, or a range of 9.75 kg. These findings suggest that Paylean (Ractopamine HCl) improves growth performance and feed efficiency of finishing pigs, but does not impact variation of growth.

Key Words: Ractopamine, Pigs, Variation

155 Growth performance and carcass characteristics of pigs fed diets containing a corn germ-corn bran product compared to diets composed of corn, soybean meal, and tallow. S. J. Kitt*, P. S. Miller, R. L. Fischer, and D. E. Reese, *University of Nebraska, Lincoln*.

A total of 240 mixed-sex, growing-finishing pigs were used to evaluate the feeding value of a corn germ-corn bran by-product. Pigs were blocked by weight (initial BW = 32.2 kg) and randomly assigned to one of four dietary treatments and allotted to pen ($n = 24$). Pigs and feeders were weighed biweekly to determine ADG, ADFI, and ADG/ADFI. Treatments were diets containing corn-soybean meal (CON), corn-soybean meal-4% tallow (TAL), corn-soybean meal-8% corn germ-corn bran (8% GERM), and corn-soybean meal-16% corn germ-corn bran (16% GERM). All diets met or exceeded the 1998 NRC requirements. During the 102-d trial, there were no differences among treatments for ADG ($P \geq 0.10$). Pigs fed TAL had a 5.3% decrease in ADFI ($P \leq 0.007$) and 8.7% improvement in feed efficiency (ADG/ADFI; $P \leq 0.005$) compared to all other treatments. Ultrasound scans revealed no differences ($P \geq 0.10$) in longissimus muscle area among treatments and an increased (2.57 vs 2.31 cm; $P \leq 0.02$) backfat depth for pigs fed TAL compared to other treatments. Calculated (NPPC, 1991) carcass lean percentage of pigs fed TAL was less (48.09 vs 49.02; $P \leq 0.06$) than the other treatments. Dressing percentage was greater ($P \leq 0.05$) for pigs fed diets containing TAL compared to pigs fed 8% GERM or 16% GERM. Pigs fed CON had greater ($P \leq 0.02$) subjective marbling score than pigs fed TAL and 16% GERM. Longissimus muscle pH of pigs fed CON tended to be greater (5.67 vs 5.60 vs 5.61, respectively; $P \leq 0.08$) than pigs fed TAL or 8% GERM. Subjective muscle firmness tended to be greater ($P \leq 0.09$) for pigs fed CON compared to all other treatments. Pigs fed TAL had greater ($P \leq 0.01$) longissimus muscle Minolta a^* color score than other treatments. These data suggest that the feeding value of corn germ-corn bran is lower than that predicted from its chemical composition.

Key Words: Pigs, Corn Germ, Corn Bran

156 The effect of body composition on dietary protein selection in finishing gilts. S. A. Meers*, R. Jones, T. D. Pringle, and M. J. Azain, *University of Georgia, Athens*.

The objective of this study was to determine if pigs of similar BW, but differing in tenth rib fat thickness, differ in their selection for dietary protein. The study was designed in a 2×2 factorial arrangement with main effects of body fat (Lean vs Fat) and diet (single vs choice). Crossbred gilts ($n = 32$) with an initial BW of 80 kg were sorted into high and low backfat groups based on real-time ultrasound scans at the 10th rib. Gilts in the low (Lean) and high fat (Fat) groups had 1.5 and 2.2 cm of 10th rib fat ($P < 0.001$) and 27.7 and 30.9 cm² loin area ($P < 0.05$), respectively, at the start of the study. Diets were: 1) a low-protein, corn-based diet that was supplemented with essential amino acids (EAA) such that all EAA were at, or above, the level suggested for an ideal pattern (8.5% CP, 0.58% Lys) and 2) a high protein, corn-soybean meal-based diet that was supplemented with Lys and Met such that it also had all EAA at or above an ideal pattern (22.7% CP, 1.275% Lys). During the first week, all pigs were fed a 50/50 mix of diets 1 and 2 (15.3% CP, 0.93% Lys). From d 7 to 28, one-half of the pigs in the Lean and Fat groups were given a choice of diets 1 and 2 in separate feeders. The position of the diets was rotated daily. The other pigs continued to be fed a 50/50 blend (single diet). Average daily gain (1.06 kg/d) and total intake (2.64 kg/d) were not different between treatment groups. However, the pattern of selection was different in the choice groups. Lean pigs consumed more (64.4%) of the high protein diet than did Fat pigs (35.6%, $P < 0.002$), resulting in a difference in the percent protein consumed. Lean pigs selected a 16.7% CP diet while Fat pigs selected a 12.6% CP ($P < 0.01$) diet. Thus, body composition influences diet selection. While allowing pigs to self select did not alter performance parameters, the results suggest that allowing individual animals to self-select may decrease the nitrogen intake and thus, cost of production. The implication of this work is that diet selection can be used to allow pigs to more closely meet their individual nutrient requirements.

Key Words: Diet Selection, Body Composition, Protein Intake

157 Effect of soy isoflavones on growth, carcass composition, pork quality, and plasma metabolites of growing-finishing barrows. R. L. Payne*, T. D. Bidner, and L. L. Southern, *Louisiana State University Agricultural Center, Baton Rouge*.

An experiment was conducted with 80 barrows to evaluate the effects of soy isoflavones (ISF) on growth, carcass composition, pork quality, and plasma metabolites. Average initial and final BW were 32.3 and 111.7 kg, respectively. The four diets were: 1) corn-soybean meal diet (C-SBM); 2) C-SBM + two times ISF content of C-SBM (2x ISF); 3) corn-soy protein concentrate diet (C-SPC, void of ISF); 4) C-SPC + ISF equal to ISF level in C-SBM (C-SPC+ISF). Each treatment was replicated five times with four barrows each in a randomized complete block design. Growth performance, carcass composition, and plasma metabolites were not affected ($P > 0.10$) in pigs fed 2x ISF diet compared with those fed C-SBM. However, b^* color score was increased ($P < 0.10$) in pigs fed 2x ISF compared with those fed C-SBM. Overall ADG was decreased ($P < 0.10$) in pigs fed C-SPC diet compared to pigs fed C-SBM or 2x ISF, but the addition of ISF to the C-SPC returned ADG to a level similar to pigs fed C-SBM. Otherwise, growth of pigs fed C-SPC or C-SPC+ISF was not affected ($P > 0.10$) by diet. Average backfat was decreased ($P < 0.10$) in pigs fed C-SPC compared to those fed C-SBM. Pigs fed C-SPC+ISF had increased ($P < 0.10$) ultrasound and carcass measurements of 10th rib backfat thickness, average backfat, leaf fat, total fat, percentage fat, lean:fat, total ham fat, percentage ham fat, and butt fat thickness compared to those fed C-SPC. Percentage carcass lean and percentage ham lean were decreased ($P < 0.10$) in pigs fed C-SPC+ISF compared to pigs fed C-SPC. Pigs fed C-SPC+ISF had a higher ($P < 0.10$) 45-min pH compared to those fed C-SPC. Drip loss was decreased ($P < 0.10$) in pigs fed C-SPC+ISF compared to those fed C-SPC. Pigs fed C-SPC or C-SPC+ISF diets had a decreased ($P < 0.10$) insulin:glucose ratio compared to those fed C-SBM. The effects of isoflavones were variable, but they had little effect on growth, carcass composition, pork quality, or plasma metabolites of growing-finishing pigs.

Key Words: Soy Isoflavone, Pigs, Pork Quality