181 Evaluation of arabinogalactan (Larafeed® AG) as a neutraceutical growth promoter in starter diets for weanling pigs. J. R. Bergstrom*[1], J. L. Nelssen[1], M. D. Tokach[1], S. S. Dritz[1], and J. C. Woodworth[2], [1]*Kansas State University, Manhattan,* [2]*Lonza, Inc., Allendale, NJ.*

A total of 288 pigs (6.8 kg) were used in a 28-d experiment. Pigs were blocked by weight and randomly allotted to one of 8 dietary treatments. There were 6 replications with 6 pigs per pen. Treatments were arranged in a 2 × 4 factorial of diets without or with a feed-grade antibiotic (154 ppm neomycin and 154 ppm oxytetracycline), and with 4 levels of arabinogalactan (0, 0.05, 0.10, and 0.20%). Arabinogalactan is a water-soluble proteoglycan/polysaccharide, most commonly harvested from the bark of the Western Larch (*Larix occidentalis*) tree. There were no arabinogalactan × antibiotic interactions (P>0.11). From d 0 to 14, ADG (163, 172, 163, and 141 g/d), ADFI (200, 195, 195, and 177 g/d), and d 14 wt (9.1, 9.1, 9.1, and 8.8 kg) decreased (linear, P<0.05) with increasing level of arabinogalactan. Due to the reduction in ADFI at the highest level (0.20%) of arabinogalactan, ADFI (422, 413, 422, and 390 g/d) also decreased (linear, P<0.05) from d 0 to 28 with increasing arabinogalactan. Arabinogalactan did not influence (P>0.10) overall ADG (327, 322, 336, and 304 g/d) or G/F (0.78, 0.78, 0.79, and 0.78). From d 0 to 28, pigs fed diets with antibiotic had greater (P<0.01) ADG (340 vs 304 g/d) and ADFI (431 vs 390 g/d), and were heavier (P<0.05) on d 14 (9.1 vs 8.9 kg) and 28 (16.5 vs 15.3 kg) than pigs fed diets without antibiotic. In conclusion, the addition of neomycin and oxytetracycline to weanling pig diets improved ADG and ADFI; however, the addition of arabinogalactan to weanling pig diets did not improve growth performance.

Key Words: Pig, Antibiotic, Arabinogalactan

182 Evaluation of astaxanthin as a neutraceutical growth promoter in diets for weanling pigs. J. R. Bergstrom*, J. L. Nelssen, M. D. Tokach, S. S. Dritz, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan.*

A total of 210 pigs (initially 5.7 kg) were used in a 28-d experiment to evaluate the effect of increasing dietary astaxanthin (0, 5, 10, and 25 ppm) on weanling pig performance. Pigs were blocked by weight and randomly allotted to one of five dietary treatments. Pigs were fed simple corn-soybean meal-dried whey-based diets from d 0 to 14; and corn-soybean meal diets from d 14 to 28. Treatments consisted of a negative control diet without added feed-grade antibiotic; the negative control with 5, 10, or 25 ppm added astaxanthin; or a positive control with an antibiotic (154 ppm of neomycin and 154 ppm of oxytetracycline). From d 0 to 14, ADG (132, 136, 136, 141 vs 168 g/d) and G/F (0.79, 0.79, 0.78, 0.79 vs 0.86) were improved (P < 0.05) by including an antibiotic in the diet; with pigs fed antibiotic being heavier (P < 0.05) on d 14 than pigs fed 0, 5, or 10 ppm astaxanthin (7.6, 7.6, 7.6 vs 8.1 kg), and tending to be heavier (P < 0.10) than pigs fed 25 ppm astaxanthin (7.6 kg). From d 14 to 28, pigs fed antibiotic had greater (P < 0.05) ADG than pigs fed 0, 5, and 25 ppm astaxanthin (472, 463, 472 vs 513 g/d); with pigs fed 10 ppm astaxanthin having intermediate ADG (481 g/d). Pigs fed antibiotic had greater (P < 0.05) ADFI than pigs fed all other treatments (599, 585, 599, 608 vs 676 g/d). Pigs fed antibiotic had poorer (P < 0.05) G/F than pigs fed 0, 5, or 10 ppm astaxanthin (0.79, 0.79, 0.81 vs 0.76), and pigs fed 25 ppm astaxanthin had poorer (P < 0.05) G/F (0.78) than pigs fed 10 ppm astaxanthin. Overall, ADG (304, 299, 308, 304 vs 340 g/d), ADFI (381, 381, 386, 390 vs 435 g/d), and BW on d 28 (14.2, 14.1, 14.3, 14.2 vs 15.2 kg) were improved (P < 0.05) by including an antibiotic in the diet. Pigs fed 25 ppm astaxanthin had poorer (P < 0.05) G/F (0.78 vs 0.80) than pigs fed 10 ppm astaxanthin. In conclusion, growth performance of pigs receiving astaxanthin was not different than that of pigs fed the negative control diet. However, ADG and ADFI were improved by the feed-grade antibiotic.

Key Words: Pig, Antibiotic, Astaxanthin

183 Supplementation of inorganic acidifier on growth performance nutrient digestibility, intestinal morphology, and microflora in the gastrointestinal tract of weaning pigs. K. W. Kang*, H. B. Lee, H. F. Long, K. H. Kim, H. K. Oh, and Y. Y. Kim, *Sepul National University, Seoul, Korea.*

This study was investigated to evaluate the effect supplementation of inorganic acidifier on growth performance nutrient digestibility, intestinal morphology, and microflora in the GI tract of weaning pigs. HCl was premixed with carrier to addition to the experimental diet. A total of 80 crossbred pigs, averaging 7.57 kg body weight, were allotted to treatments in five replicates with four pigs per pen. Treatments included: 1) Pcon(basal diet ; corn-soy based+avliamycin 0.12%); 2) HCl 0.1%(basal diet+HCl 0.1%), 3) HCl 0.2%(basal diet+HCl 0.2%)4) HCl 0.3%(basal diet+HCl 0.3%). During total experimental period, PCon treatment showed the greatest on body weight gain (16.39, 15.65, 13.87, 15.27, P<0.05 for Pcon, HCl 0.1%, HCl 0.2%, HCl 0.3%, respectively) and average daily gain(252, 229, 180, 220, P<0.05 for Pcon, HCl 0.1%, HCl 0.2%, HCl 0.3%, respectively). Also, the ADG in HCl 0.1% group was significant higher than other groups supplemented HCl. Pigs fed diet of HCl 0.2% had lower body weight and ADG than other treatments. There were no significant differences in ADFI and gain : feed(G/F) among all treatments(P>0.05). The supplementation of inorganic acidifier had no significant difference on the nutrients digestibility and blood urea nitrogen level. During 1~3 weeks, there were significant differences in diarrhea score(1.92, 1.77, 2.32, 2.11, P<0.05 for Pcon, HCl 0.1%, HCl 0.2%, HCl 0.3%, respectively). But during total experimental period, there were no significant differences in diarrhea score and morphology of the small intestine. The count of B. subtilis in ileum(Ct-value;19.13, 20.97, 21.58, 22.34, P<0.05 for Pcon, HCl 0.1%, HCl 0.2%, HCl 0.3%, respectively) were significantly higher than those of other treatments. There were no significant differences on the count of S. bovis, L. plantarum and E.coli K88ac among all treatments. These results may be suggested that the inorganic acidifier(HCl 0.1%) may be used for growth promoters instead of antibiotics in weaning diet.

Key Words: Inorganic, Weaning pigs, Growth performance

184 Effects of feeding Iowa-grown field peas on finishing pig performance. J. G. Njoka*, M. S. Honeyman, and T. Miller, *Iowa State University, Ames.*

The objective of this study was to investigate feeding Iowa-grown field peas to finishing pigs. Field peas (winter, spring, and summer types) grown in southeast Iowa during 2005 and 2006, were sampled and analyzed for nutrient content. The Iowa peas averaged 86% DM, 2% ether extract, 5.6% crude fiber, 3% ash, 20.3% CP, 1.54% lysine, 0.20% methionine, 0.20% tryptophan, and 0.74% threonine. The four diets were: (1) winter pea 30% of the total diet (by weight), (2) summer