

TH313 Effects of inclusion of spray-dried porcine plasma in lactation diets on sow and litter performance. S. D. Carter^{*1,6}, L. I. Chiba^{2,6}, M. D. Lindemann^{3,6}, M. J. Estienne^{4,6}, and G. J. M. M. Lima^{5,6}, ¹Oklahoma State University, Stillwater, ²Auburn University, Auburn, AL, ³University of Kentucky, Lexington, ⁴Virginia Tech University, Blacksburg, ⁵Embrapa Swine and Poultry, Concordia, SC, Brazil, ⁶S-1044 Committee on Nutritional Systems for Swine to Increase Reproductive Efficiency.

A cooperative study, utilizing 404 primi- and multi-parous crossbred sows from 5 experiment stations (AL, KY, OK, VA, and Brazil), was conducted to determine the effects of inclusion of 0.50% spray-dried porcine plasma (Appetein, APC Inc., Ankeny, IA) in corn-soybean meal diets on sow and litter performance. Crossbred sows were fed corn soybean meal-based diets containing a minimum of 0.50% SID lysine during gestation. Sows were allotted at farrowing, based on body weight and parity, to 2 dietary treatments. The control (C) diet was a fortified corn soybean meal diet. Appetein (App) was added to the control diet at 0.50% at the expense of soybean meal to formulate the test diet. Both diets were formulated to 0.90% SID lysine and 3,414 kcal/kg ME. A common trace mineral and vitamin premix was used at all stations with the exception of Brazil. Chromium picolinate was added to each diet to provide 200 ppb Cr. Sows were allowed ad libitum access to feed. Sows were weighed within 24 h after farrowing, and all litters were adjusted to >10 pigs/litter by d 2 following farrowing. Average sow parity, number of pigs on d 2, and lactation length for the C and App treatments were, respectively: 2.5 and 2.3; 11.0 and 10.7; and 23 and 23 d. The ADFI during lactation for C and App diets were similar (5.65 kg/d; $P > 0.10$). Sow weight after farrowing averaged 217 kg ($P > 0.10$). The number of pigs weaned (9.9 vs. 9.7), litter weaning weights (68.4 vs. 69.1 kg), litter weight gains (51.6 vs. 52.2), sow weight change during lactation (-6.0 vs. -8.3 kg), and return-to-estrus interval (7.5 vs. 7.2 d) were not affected ($P > 0.10$) by dietary treatment. There were no station \times treatment interactions ($P > 0.10$). Additionally, the data were sorted by parity (<3 vs. 3 and greater), ambient temperature (hot vs. thermoneutral), and season (summer vs. winter). No differences between treatments were observed within any data set. These results indicate no benefit of inclusion of spray-dried porcine plasma in lactation diets for sows nursing > 10 pigs and consuming a corn-soybean meal diet containing 0.90% SID lysine.

Key Words: sow, spray-dried porcine plasma, lactation

TH314 Effects of spray-dried plasma replacement for soy protein concentrate on growth performance of weaned pigs. M. Q. Resende*, A. G. Mascarenhas, R. C. Nunes, E. Arnhold, K. A. Teixeira, K. M. Borges, L. V. G. C. Mota, and H. H. C. Mello, *Universidade Federal de Goiás, Goiânia, GO, Brazil.*

Some research demonstrate improvement on piglets growth performance (GP) by including soy protein concentrate (SPC) on post weaning diets, due to reduction of the hypersensitivity to soy allergens. The aim of this work was to assess the spray dried plasma (SDP) replacement for SPC over GP, small intestine histology and blood leucocytes and lymphocytes of post weaned pigs. A total of 54 pigs, weaned at 21 ± 2 d (initial BW: 6.96 ± 0.80 kg), were randomly assigned to 3 diets, 6 replicate pens per diet, and 3 pigs per pen in a randomized block design by initial BW. Corn-soybean mash diets were isonitrogenous and isocaloric: T1) 0% SPD + 5% SPC; T2) 2.5% SPD + 2.5% SPC; T3) 5% SPD + 0% SPC. Experimental diets were fed in 2 dietary phases (0 – 11 d and 11 – 20 d post weaning), and a common diet were fed through 20 – 45 d post weaning. Pigs were allowed ad libitum access to feed and water throughout the 45 d experimental period. The minimum and maximum ambient

temperature was 18°C and 32°C. Animals were weighed at d 0, 11, 20 and 45. Feed intake was recorded at d 11, 20 and 45 post weaning. A pig per pen was euthanized on d 11 to collect small intestine and blood samples. Data were analyzed by ANOVA using the GLM procedure of SAS, and the means of the treatments were compared by Duncan test. T2 showed greater final body weight (9.606, 9.254, 8.659 kg), ADFI (0.324, 0.268, 0.253 g) and ADG (0.212, 0.172, 0.124 g) during 0 – 11 d period, compared with T1 and T3. However there were no statistical differences in GP during 45 d experimental period among treatments. On d 11 no difference were observed in villus height, crypt depth and villus:crypt ratio of duodenum, jejunum and ileum. Related to blood cells, T1 showed fewer leucocytes ($13.501, 16.350, 19.638 \times 10^3/\mu\text{L}$) and lymphocytes ($6.869, 9.164, 10.123 \times 10^3/\mu\text{L}$) counts in blood compared with T2 and T3. This confirms the SDP potential to improve immunity of post weaned pigs, which was not promoted by SPC. We conclude that SDP should not be totally replaced from SPC in piglet diets during the first 11 d after weaning, but the use of both can be recommended.

Key Words: intestinal morphology, lymphocyte, nursery diet

TH315 Growth performance, carcass characteristics and meat quality of pigs fed crude glycerin. C. A. Ordonez-Gomez^{*1,3}, S. Castaneda¹, H. Florez¹, G. Afanador², and C. Ariza-Nieto¹, ¹CORPOICA, Bogota, Colombia, ²Universidad Nacional de Colombia, Bogota, Colombia, ³Universidad Francisco de Paula Santander Ocana, Ocana, Colombia.

The aim of this study was to evaluate the effect of the inclusion level of crude glycerin in the diet of growing pigs on growth performance, carcass characteristics and meat quality. The crude glycerin presented the following composition: 3696 kcal GE/kg, 3579 kcal ME/kg, 8.29% moisture, 82.0% glycerol, 0.79% crude fat, 1.21% sodium and 16 ppm of methanol. Diets were formulated as isocaloric and isoprotein (3200 kcal ME/kg in all phases, 19.1% CP, 0.879% digestible lysine from 20 to 30 kg BW; 17.7% CP, 0.806% digestible lysine from 30 to 50 kg BW; 16.8% CP, 0.747% digestible lysine from 50 to 70 kg BW; 15.5% CP, 0.663% digestible lysine from 70 to 100 kg BW). A total of 36 pigs (average BW 23.05 ± 2.86 kg) were randomly assigned to one of the 3 treatments: 1) control without crude glycerin; 2) 5% crude glycerin; 3) 10% crude glycerin. Pigs were housed in 12 pens; 4 replicates (pens), 3 pigs/replicate. During the study, pigs in each pen were weighed weekly and feed residuals were used to calculate daily feed intake and feed conversion. At the time of slaughter (100 kg BW), one pig per replicate was selected and slaughtered to determine carcass weight (CW), backfat thickness (BF), loin eye area at the last rib on the right side (LA), and lean meat yield (LMY). Loin samples were cut into chops to determine quality attributes such as color, pH, water retention capacity (WRC), and shear force (SF). Data were analyzed using PROC GLM of SAS (Ver. 9.0, SAS Institute, Cary, NC) as a completely randomized block design. Results showed that crude glycerin inclusion did not affect ($P > 0.05$) growth performance (ADG 848 ± 42 g; ADFI 2361 ± 139 g; feed conversion 2.79 ± 0.2 g/g), carcass characteristics (CW 82 ± 8.5 kg; LWY 37.2 ± 7.5 kg) and meat quality (WRC 6.4 ± 2.1 mm²/mm²; SF 5.7 ± 1.5 kg). It can be concluded that crude glycerin inclusion can be used up to 10%, without adversely affecting the performance of growing pigs.

Key Words: crude glycerin, growth performance, pork quality

TH316 Energy concentrations in distillers dried grains with solubles containing different fat concentrations and the effect of corn oil addition on energy concentrations in diets fed to growing pigs. D. Y. Kil¹, J. W. Lee², D. M. D. L. Navarro^{*2}, and H. H.