

P077 Grain distillers dry yeast on nursery pig performance. V. Perez^{1,*}, J. Less², T. Radke¹, D. Holzgraefe¹, ¹ADM Alliance Nutrition, Quincy, IL, ²ADM, Specialty Feed Ingredients, Decatur, IL.

A total of 192 newly weaned pigs (5.8±0.2 kg BW and ~21 d of age) were used to measure the effect of increasing the concentration of a dietary grain distillers dry yeast (DY) on their performance. The DY is a *Saccharomyces cerevisiae* used in corn ethanol production. The experiment had a randomized complete block design; blocks were 4 BW categories × 2 nursery rooms. The experimental unit was a pen with 2 barrows and 2 gilts. Each treatment had 8 block replicates. Dietary treatments were the inclusion of DY at 0, 0.5, 1, 2, 4, and 8% of the diet. As the dietary inclusion of DY increased across treatments from 0 to 8% DY, fish meal was gradually replaced from 3.85 to 0% in diets for d 0 to 7, and from 2.5 to 0% in diets for d 7 to 14. Dietary treatments were fed from d 0 to 42, and then a common diet without DY was fed to all pigs from d 42 to 56. All diets were formulated to provide the same energy and nutrient concentrations among treatments. Amino acids were provided on a standardized ileal digestibility basis. The ADG and ADFI were calculated per pen on a pig-day basis. Data were analyzed using the MIXED procedures of SAS; block was used as a random effect in the model. Linear and quadratic polynomials were estimated for the inclusion of DY. No differences were detected in ADG and ADFI among treatments. During d 0 to 14, G:F in pigs fed 0.5% DY was lower ($P < 0.05$) than that in pigs fed 1 or 8% DY (Table 1). The reason for that effect is unknown. The G:F from d 0 to 56 increased as more DY was included in the diet (DY linear effect, $P = 0.060$). In conclusion, DY replaced fish meal without affecting pig performance. Adding up to 8% DY in the diet during the first 6 wk post-weaning was not detrimental for pig performance. Overall, feed efficiency improved with increasing levels of DY.

Table 1. Increasing concentrations of dietary grain distillers dry yeast (DY) on nursery pig performance.

Response	DY 0%	DY 0.5%	DY 1%	DY 2%	DY 4%	DY 8%	SEM
ADG d 0-14, g/d	321	313	306	316	308	312	14
G:F d 0-14, g/kg	920	883	946	901	896	948	22
ADG d 0-42, g/d	560	562	543	551	539	544	14
G:F d 0-42, g/kg	693	695	700	680	688	700	10
ADG d 0-56, g/d	653	656	631	635	637	653	14
G:F d 0-56, g/kg*	640	647	645	631	653	660	9

* Linear effect, $P = 0.060$.

Key Words: nursery, pigs, yeast

P078 Inclusion of fermented soybean meal, chicken meal, or poultry by-product meal in phase 1, phase 2, and phase 3 diets fed to weanling pigs. O. J. Rojas Martinez^{*}, H. H. Stein, *Animal Sciences, University of Illinois, Urbana.*

Three experiments were conducted to test the hypothesis that fermented soybean meal (FSBM), chicken meal (CM), or poultry by-product meal (PBM) can replace fish meal (FM) in diets fed to weanling pigs during the initial 28 d post-weaning. In all experiments, newly weaned pigs (21 d) were randomly allotted to a randomized complete block design. In Exp 1, 192 pigs (initial BW: 6.88 ± 2.48 kg) were allotted to 4 dietary treatments with 2 phases. In phase 1, a positive control diet contained FM, whey powder (WP), and protein plasma (PP). A negative control diet (without animal protein) and 2 additional diets in which FSBM replaced FM or FM and PP were also formulated. In phase 2 diets, a positive control, a negative control diet, and 2 diets in which FSBM replaced FM or FM and WP were formulated. In Exp 2, 175 pigs (initial BW: 6.86 ± 2.86

kg) were allotted to 5 dietary treatments with 3 phases. The positive control diet contained FM, WP, and PP in phase 1 and 2, and FM and WP in phase 3, but no animal ingredients were included in the negative control diets. Three additional diets were formulated within each phase in which FSBM replaced FM, FM and PP, or FM, PP, and WP. In Exp. 3, 175 pigs (initial BW: 6.97 ± 2.1 kg) were allotted to 5 dietary treatments with 3 phases. The positive control diets contained FM, whereas no FM was included in the negative control diets. Three additional diets were formulated within each phase in which FM was replaced by CM, PBM, or FSBM. The final BW of the pigs in each experiment was not different among treatments. Likewise, the G:F ratio for the overall experiment were not different among treatments in Exp. 1 and Exp. 2. However, in Exp. 3, G:F was greater for pigs fed the positive control diets than for pigs on the other treatments, but it was not different among pigs fed CM, PBM, and FSBM. In conclusion, FSBM may replace FM, CM, and PBM in diets fed to pigs during the initial 28 d post-weaning without affecting pig growth performance except that G:F may be reduced.

Key Words: Fermented soybean meal, chicken meal, poultry by-product meal, pigs

P079 Effects of feeding low or high peroxidized distillers dried grains with solubles (DDGS) to sows and their progeny on growth performance and carcass characteristics of progeny. X. Li¹, G. C. Shurson¹, S. K. Baidoo², D. D. Gallaher³, J. E. Anderson⁴, L. J. Johnston^{5,*}, ¹Department of Animal Science, University of Minnesota, Saint Paul, ²Southern Research and Outreach Center, University of Minnesota, Waseca, ³Department of Food Science and Nutrition, University of Minnesota, Saint Paul, ⁴Division of Science and Math, ⁵West Central Research and Outreach Center, University of Minnesota, Morris.

An experiment was conducted to evaluate the effects of feeding sows (gestation = 40%; lactation = 20%) and progeny (nursery and growing-finishing = 30%) DDGS containing low (LOD) or high (HOD) peroxidized lipid on growth performance and carcass characteristics of progeny. Mixed parity sows (n = 48; mean parity = 3.2) were assigned to 1 of 3 dietary treatments [corn-soybean meal control diets (CON), LOD, or HOD] in a completely randomized design. Concentrations of ME and AA were similar between diets within phase and exceeded NRC (1998) recommendations. Malondialdehyde (MDA) concentrations in gestation and lactation diets were: 2.32, 3.70, 4.08, 2.89, 3.24, and 3.36 ng/mg oil, respectively. Pre-suckling pigs were sorted by individual birth weight into Small (≥ one SD below avg birth weight of the litter) and Large (≥ one SD above avg birth weight of the litter). At weaning, 182 mixed sex piglets (2 to 3 from each birth weight group) were allotted to 1 of 6 treatments (3 diets with 2 birth weight groups nested in each diet). Each pen housed 7 or 8 pigs and there were 4 pens per treatment. Pigs were assigned to diets from weaning to harvest that contained the same sources of DDGS as their dams consumed. Pigs fed LOD or HOD had lighter ($P < 0.05$) final BW than pigs fed CON (114.8 or 113.7 vs. 118.4 kg; SE = 1.12). Pigs fed LOD had lower ADFI than pigs fed CON or HOD from weaning to harvest (1.79 vs. 1.90 or 1.94 kg; SE = 2.01). Feeding LOD tended to improve ($P = 0.08$) G:F compared with feeding CON or HOD throughout the study (0.52 vs. 0.50 or 0.49; SE = 0.01). Large pigs fed HOD had greater ($P < 0.05$) ADG and ADFI compared with Small pigs fed the same diet. Feeding HOD decreased ($P < 0.05$) backfat depth (26.8 vs. 28.4 mm; SE = 1.24) and loin eye area at the 10th rib (43.9 vs. 40.4 cm²; SE = 1.28) compared with feeding CON. Small pigs fed LOD or CON