

pens were assigned randomly to one of three dietary treatments in a 4-phase feeding program (24 pens, 9 pigs/pen). Diets were formulated on a SID amino acid basis following NRC (1998) nutrient requirements for pigs gaining 350 g/d of lean tissue. Diets included a corn-soybean meal control (C); C containing 20% LS-DDG (L); and C containing 20% distiller's dried grains with solubles (D). Crude fat content of LS-DDG (7.95%) was lower than typical distiller's dried grains with solubles (8.87%). Hot carcass weight did not differ among treatments but dressing percentage was lower ($P < 0.01$) for pigs fed L and D compared to C (C = 73.8%; L = 72.8%; D = 72.8%; SEM = 0.22). Pigs fed L displayed reduced ($P = 0.02$) 10th-rib backfat depth (C = 15.5 mm; L = 14.2 mm; D = 16.0 mm; SEM = 0.47) and increased ($P = 0.02$) carcass lean (C = 54.1%; L = 54.8%; D = 53.4%; SEM = 0.33) compared to pigs fed D, but similar to pigs fed C. The belly flop test revealed that bellies from pigs fed D were softer ($P < 0.01$) than those from pigs fed C (C = 17.7°; L = 14.1°; D = 12.9°; SEM = 1.07). However, only a tendency ($P = 0.07$) for softer bellies was observed when pigs received L compared to C. The PUFA content of belly fat was reduced ($P < 0.01$) by L compared with D but was still elevated compared to pigs fed C (C = 9.4%; L = 14.0%; D = 15.4%; SEM = 0.34). Thus, pigs fed L tended ($P = 0.06$) to have lower iodine value of belly fat compared to pigs fed D (C = 57.8; L = 63.1; D = 65.0; SEM = 0.53). Gilts fed L had lower ($P = 0.02$) PUFA (13.4%) in belly fat than gilts fed D (15.9%) while there was no difference among barrows (L = 14.6%; D = 15.0%, SEM = 0.50). In summary, inclusion of 20% LS-DDG in diets for growing-finishing swine can lessen the negative impacts of DDGS on pork fat quality; and pork fat of gilts may be more sensitive to dietary LS-DDG than that of barrows.

Key Words: carcass, fat quality, low-solubles distiller's dried grains

110 Effects of crude glycerol and ractopamine HCl on growth performance, carcass characteristics, and loin quality of finishing pigs. A. W. Duttlinger^{*1}, J. M. DeRouchey¹, M. D. Tokach¹, S. S. Dritz¹, J. L. Nelssen¹, R. D. Goodband¹, T. A. Houser¹, K. J. Prusa², and L. Huskey³, ¹Kansas State University, Manhattan, ²Iowa State University, Ames, ³JBS Swift & Company, Greeley, CO.

A total of 1,054 pigs (94.3 kg BW) were used in a 28-d study. Pigs were blocked by BW and randomly allotted to 1 of 4 dietary treatments with 10 pens per treatment. Treatments were arranged in a 2x2 factorial with main effects of glycerol (0 or 5%) and ractopamine HCl (RAC; 0 or 7.5 ppm) added to corn-soybean meal-based diets. There were no glycerol x RAC interactions ($P > 0.16$) for growth performance. Glycerol tended to improve ($P < 0.07$) G:F, but did not influence ($P > 0.36$) ADG or ADFI. Feeding RAC increased ($P < 0.01$) ADG and G:F. For carcass characteristics, there were glycerol x RAC interactions ($P < 0.05$) for percent yield. Adding either RAC or glycerol to the diet increased yield; however, the effects were not additive. Pigs fed RAC had increased ($P < 0.04$) hot carcass weight, yield, loin depth, and FFLI. Loin chop drip loss worsened when glycerol and RAC were added separately to the diet; however, drip loss decreased when the combination of glycerol and RAC were fed (interaction $P < 0.01$). Glycerol did not affect ($P > 0.22$) loin characteristics. Feeding RAC tended to improve ($P < 0.08$) sirloin chop a* color. Neither RAC nor glycerol influenced ($P > 0.17$) iodine value of belly, jowl, or back fat. In conclusion, feeding pigs 5% glycerol improved G:F, while pigs fed RAC had improved growth and carcass characteristics and a tendency for improved a* color.

Table 1.

Item	RAC, ppm		0		7.5		SE
	Glycerol, %		0	5	0	5	
ADG, kg			0.88	0.88	0.98	0.99	0.92
G:F			0.30	0.30	0.34	0.35	0.01
Carcass wt, kg			85.9	87.1	90.5	89.8	0.94
Yield, %			74.63	75.85	76.26	75.91	0.37
Backfat, mm			17.95	17.65	16.92	17.58	0.34
Loin depth, mm			57.68	58.64	61.28	61.46	1.01
Lean, %			54.59	54.62	54.99	55.05	0.42
Loin chop drip loss, %			1.89	2.61	2.47	2.03	0.18
Iodine value, g/100 g							
Jowl fat			69.6	68.9	69.7	70.7	0.70
Belly fat			68.6	70.0	69.6	69.7	1.49
Backfat			69.0	67.8	67.8	68.3	0.70

Key Words: glycerol, finishing pig, ractopamine HCL

111 Effects of distillers grain supplementation on dystocia and beef cow performance. J. M. Carmack^{*1}, P. M. Walker¹, R. L. Atkinson², K. L. Jones², and S. W. Reader², ¹Illinois State University, Normal, ²Southern Illinois University, Carbondale.

Little information has been reported regarding high dietary inclusion levels of high moisture corn distillers grains with solubles (DGS) on beef cow performance. The objective of this 2 year study is to determine the optimum inclusion rate for DGS in late gestation and early lactation beef cow diets and the effect of including high dietary levels of DGS on dystocia, postpartum conception rate and other measures of performance. During year one, ninety-six multiparous cows and thirty-two, 2-yr old heifers at the start of the third trimester were assigned to 16 pens by BW and BCS, and fed for 163 d until a timed-A.I. Control cows were fed corn silage-shelled corn-soybean meal based diets (CNTL) to provide 12% CP. In treatment diets DGS replaced shelled corn and soybean meal to provide 12% (T1), 16% (T2) or 20% (T3) CP. Analyzed dietary values for CP intakes were 12.0, 12.5, 15.7 and 19.0 for CNTL, T1, T2 and T3, respectively. Mean ADFI was 18.8 kg ± 1.73, 19.4 kg ± 2.05, 20.0 kg ± 2.45 and 19.3 kg ± 2.04 for CNTL, T1, T2 and T3, respectively. Mean DMI was 9.4 kg ± 1.91, 9.4 kg ± 1.00, 10.3 kg ± 1.27 and 10.4 ± 1.11 for CNTL, T1, T2 and T3, respectively with DGS representing 21, 36 and 55% of DMI for T1, T2 and T3, respectively. No differences ($P > 0.05$) between treatments were observed for cow BW, BCS, conception rate, calving ease score and calf BW. Calf weight at A.I. was greater for T2 than T1 ($P < 0.05$). Conception rates to a timed-A.I. were higher ($P < 0.05$) for T1 than T2. No differences ($P > 0.05$) between treatments were observed, except percent bred tended higher ($P < 0.08$) for T3 (93%) than CNTL, T1 or T2 (mean = 88%). Milk production was higher ($P < 0.05$) for T2 than CNTL, T1 or T2. The data of year one (year two is in progress) suggest that late gestation and early lactation diets containing up to 55% DGS (DM basis) can be successfully fed without decreased performance.

Key Words: distillers grains, high dietary levels, beef cows