

**P073 Table**

Item	Bakery meal,%				SEM	Item	Bakery meal,%			
	0	7.5	15	SEM			0	7.5	15	SEM
ADG, g	933	916	928	7	HCW, kg	97.0	96.3	96.8	0.7	
G:F	0.381	0.374	0.371	0.003	Yield, %	75.6	75.8	75.4	0.2	
Caloric efficiency, mcal/kg					Backfat thickness, mm <sup>1</sup>	15.8	15.9	15.6	0.2	
ME	8.93	9.17	9.30	0.08	Loin depth, mm <sup>1</sup>	70.6	70.6	70.8	0.4	
NE	6.70	6.79	6.81	0.06	Lean, % <sup>1</sup>	51.4	51.3	51.5	0.1	
Final BW, kg	128.4	127.0	128.4	1.0	Belly IV					
					d 84	78.7	78.6	80.2	0.6	
					d 102	75.2	76.0	81.1	1.0	

<sup>1</sup>Adjusted to a common HCW.

pigs from each pen (determined visually) were sold. On d 102, the remaining pigs were sent to harvest for carcass data collection. On d 84 and d 102, the median weight market pig from every pen was selected (determined visually) for collection of carcass quality measurements. Pigs fed diets containing 7.5% bakery meal tended to have the lowest (quadratic,  $P<0.07$ ) ADG. Increasing bakery meal worsened (linear,  $P<0.02$ ) G:F and caloric efficiency on a ME basis. This suggests that ME values overestimated the energy value of bakery meal (3,700 ME kcal/kg; 2,415 NE kcal/kg). There were no differences ( $P>0.21$ ) in carcass weight, yield, backfat, or loin depth. For pigs subsampled on d 84, belly fat iodine value (IV) tended to increase (linear,  $P<0.09$ ) as bakery meal increased. Pigs subsampled on d 102 had decreased (linear,  $P<0.04$ ) middle and edge belly thickness, increased (linear,  $P<0.001$ ) belly IV, and tended to lower (linear,  $P<0.09$ ) belly weight with increased bakery meal. In conclusion, adding this bakery meal source negatively affected growth performance and carcass fat quality with most of the negative effects on fat IV when feeding 15% bakery meal. (See table above.)

**Key Words:** bakery meal, carcass quality, growing-finishing pigs

**P073 The effects of soybean hulls and their particle size on growth performance and carcass characteristics of finishing pigs.** D. Goehring<sup>\*</sup>, J. M. DeRouchey, S. S. Dritz, M. D. Tokach, R. D. Goodband, J. L. Nelssen, *Kansas State University, Manhattan.*

A total of 1,215 pigs (initial BW 31.1 kg) were used in a 118-d study to determine the effects of 7.5 and 15% soybean hulls (unground or ground) on growth performance and carcass characteristics of finishing pigs raised in a commercial environment. Pens were balanced by initial BW and gender (28 pigs/pen) with 9 replications per treatment. Treatments were arranged in a 2 × 2 + 1 factorial with main effects of soybean hull particle size (unground or ground, 787 and 370 μ, respectively) and soybean hull level (7.5 or 15%) in corn-soybean meal-based diets. The fifth treatment was a positive control, corn-soybean meal-based diet. All diets were fed in meal form. No particle size × soybean hull interactions ( $P>0.18$ ) were observed. Increasing soybean hulls, regardless of particle size, did not affect ADG but numerically increased ( $P=0.11$ ) ADFI, resulting in poorer (linear,  $P<0.02$ ) G:F. Increasing soybean hulls improved (linear,  $P<0.002$ ) caloric efficiency on an ME and NE basis, indicating published energy values undervalue the energy content of soybean hulls. Grinding soybean hulls to a fine particle size worsened G:F ( $P<0.05$ ) and caloric efficiencies ( $P<0.03$ ). Carcass yield and HCW decreased (linear,  $P<0.03$ ) with increasing soybean hulls. Increasing soybean hulls decreased (linear,  $P<0.001$ ) backfat depth and increased ( $P<0.01$ ) percentage lean. Grinding soybean hulls

to a fine particle size prior to diet manufacturing increased backfat depth ( $P<0.002$ ) and decreased ( $P<0.004$ ) percent lean and FFLI. In summary, increasing dietary soybean hulls to 7.5 or 15% did not affect ADG, ADFI, or final BW in growing and finishing pigs; however, G:F became poorer and carcass yield and HCW decreased.

Item	Soybean hulls, %:		7.5		15		SEM
	0	7.5	Ground	Unground	Ground	Unground	
ADG, g	835	841	837	820	843	9.8	
G:F	0.391	0.381	0.387	0.375	0.384	0.004	
Caloric efficiency, Mcal/kg							
ME	8.54	8.49	8.32	8.29	8.08	0.09	
NE	6.33	6.20	6.07	5.95	5.80	0.06	
Final BW, kg	128.3	128.8	127.7	126.5	128.9	1.39	
Carcass yield, %	76.6	75.2	75.4	75.2	75.0	0.36	
Lean, % <sup>a</sup>	57.4	57.5	58.1	57.8	58.4	0.19	
Loin depth, mm <sup>a</sup>	66.7	65.0	66.1	66.2	65.4	0.67	
Backfat depth, mm <sup>a</sup>	15.4	14.9	14.3	14.7	13.7	0.26	

<sup>a</sup> HCW used as covariate

**Key Words:** finishing pig, particle size, soybean hulls

**P074 Effect of replacing soybean meal with low oligosaccharide soybean meal in the diets of early weaned pigs.** D. Pangeni<sup>1,\*</sup>, J. A. Jendza<sup>2</sup>, L. Anil<sup>2</sup>, S. K. Baidoo<sup>2</sup>, <sup>1</sup>*Department of Animal Science, University of Minnesota, Saint Paul,* <sup>2</sup>*Southern Research and Outreach Center, University of Minnesota, Waseca.*

An experiment was conducted to determine the effect of replacing conventional soybean meal (cSBM, 46.55 % CP) with low oligosaccharide soybean meal (LOSBM, 53.16 % CP) on growth performance, blood urea nitrogen (BUN), intestinal morphology and digesta viscosity of early-weaned pigs. Thirty-two 19-d old pigs (6.9 ± 0.4 kg BW) were assigned to individual pens based on a randomized complete block design, with 8 blocks (wt. group) of 4 dietary treatments. Four iso-nitrogenous nursery diets were formulated and used in 2 × 2 factorial arrangement with factors consisting of soybean meal type (cSBM vs. LOSBM) and FM/SDPP (with or without). Pigs were fed ad libitum through the entire experimental period of 14 d. Pigs were weighed; blood was collected via jugular vena puncture and were euthanized by overdose of sodium pentobarbital for organ (intestine, pancreas, liver, heart, kidney and spleen) harvest. No interaction of FM/SDPP and the source of soybean meal were observed for the response criteria studied. Average daily gain and average daily feed intake were not affected by dietary treatments. However, inclusion of FM/SDPP improved ( $P = 0.03$ ) gain to feed ratio. Treatments had no effect on organ weights and intestinal length. No effect of dietary treatment was observed for