Table 309.

Diet type:	30% DDGS		No DDGS		Probability, $P <$[1]		
Added fat, %:	0	5	0	5	Diet × Fat	Diet	Fat
ADG, kg	0.93	1.01	0.99	1.01	0.05	0.06	0.01
ADFI, kg	3.14	3.08	3.21	3.19	0.47	0.01	0.18
G:F	0.297	0.328	0.308	0.317	0.01	0.90	0.01
Final BW, kg	124.4	125.8	125.4	125.8	0.34	0.40	0.14
HCW, kg	90.7	91.6	91.9	92.3	0.56	0.03	0.12
Carcass yield, %	72.75	72.67	73.05	73.24	0.29	0.01	0.63
Jowl IV, g/100g	73.02	73.48	71.49	72.28	0.42	0.01	0.01

[1]SEM for ADG, ADFI, G:F, Final BW, HCW, carcass yield, and jowl IV were 0.014, 0.029, 0.004, 0.75, 1.22, 0.55, 0.132, and 0.210, respectively.

308 **Effects of wheat source and particle size in pelleted diets on finishing pig growth performance and caloric efficiency.** J. A. De Jong*, J. M. DeRouchey, M. D. Tokach, R. D. Goodband, S. S. Dritz, C. B. Paulk, J. C. Woodworth, C. K. Jones, C. R. Stark, *Kansas State University, Manhattan*

A total of 576 pigs (PIC 327 × 1050; initial BW = 43.6 kg) were used to determine the effects of wheat source and particle size on finishing pig growth performance and caloric efficiency (CE). The same wheat-soybean meal–based formulation was used for all treatments. Pigs were allotted to 1 of 6 dietary treatments (12 pens/treatment with 8 pigs/pen) which included either hard red or soft white winter wheat at three different mean particle sizes (245, 465, 693; and 258, 402, 710 µ, respectively). All diets were fed in pelleted form (4 mm diameter pellets). Pellet durability was improved at the lowest particle sizes for both hard red (88.5, 81.2, 74.2%) and soft white (54.5, 50.9, 48.7%) winter wheat. Percentage fines were similar across wheat sources (24.0, 22.9, 26.9 vs 22.2, 27.2, 24.1%). There was a tendency ($P < 0.07$) for a quadratic particle size × wheat source interaction for ADG (1.03, 1.01, 1.03 vs 0.97, 1.00, 0.99: SEM = 0.01), ADFI (2.66, 2.59, 2.67 vs. 2.54, 2.58, 2.56; SEM = 0.03), and both DM (87.7, 87.0, 88.0 vs. 85.8, 87.7, 85.1; SEM = 0.80) and GE (68.3, 64.5, 66.3 vs. 62.3, 67.5, 64.9; SEM = 1.94) digestibility because the lowest ADG, ADFI, and both DM and GE digestibility values were for 400-µ hard red winter wheat, and the highest were for 400-µ soft white winter wheat. Despite this trend for interaction, overall, feeding hard red winter wheat improved ($P < 0.05$) ADG (1.02 vs. 0.99 kg; SEM = 0.008), ADFI (2.64 vs. 2.56 kg; SEM = 0.02), and CE on both an ME (8.13 vs. 8.50 Mcal/kg; SEM = 0.17) and NE (4.63 vs. 4.77 Mcal/kg; SEM = 0.25) basis compared with soft white winter wheat. There were no main effects ($P > 0.10$) of particle size or particle size within wheat source. In summary, fine grinding wheat from ~700 to 250 µ in pelleted diets had no effect on growth or carcass traits, and feeding hard red winter wheat improved ADG, ADFI, and caloric efficiency (ME and NE basis) compared with feeding soft white winter wheat.

Key Words: finishing pig, particle size, pellet, wheat

309 **Effects of 30% dried distillers grains with solubles and 5% added fat prior to slaughter on growth performance and carcass characteristics of finishing pigs.** K. F. Coble*, J. M. DeRouchey, M. D. Tokach, R. D. Goodband, J. C. Woodworth, S. S. Dritz, *Kansas State University, Manhattan*

A total of 1,258 pigs in two groups (initially 105.8 kg; PIC 337 (group 1) or 327 (group 2) × 1050) were used in a 20-d experiment to determine the interactive effects of 30% dried distillers grains with solubles (DDGS) and 5% added fat prior to slaughter on growth performance and carcass characteristics of finishing pigs. All pigs were fed a common diet with 30% DDGS until 20 d prior to slaughter. Then all pens were weighed and allotted to treatments with 20 replicate pens per treatment. Dietary treatments were arranged in a 2 × 2 factorial with 2 diet types (corn-soybean meal–based diet with or without 30% DDGS) and added fat (0 or 5%; group 1 = tallow; group 2 = choice white grease). There were no treatment × group interactions as the responses to dietary treatment were similar across groups, regardless of fat source or DDGS level. Overall, there were diet type × added fat interactions for ADG ($P < 0.10$) and G:F ($P < 0.05$) with pigs fed the diet containing 30% DDGS having greater ADG and G:F improvements when fat was added compared with those fed the corn-soybean meal–based diet without DDGS. Although diet type did not affect final BW, pigs fed the diet containing DDGS had decreased HCW ($P < 0.05$), which was the result of decreased carcass yield ($P < 0.05$). Adding 5% fat did not affect carcass yield. Jowl fat iodine value was increased by added fat ($P < 0.05$) and feeding DDGS ($P < 0.05$). In conclusion, adding 5% fat to finishing pig diets containing 30% DDGS approximately 20 d prior to slaughter improved ADG and G:F but did not overcome the reduction in carcass yield from feeding DDGS.

Key Words: fat, fiber, finishing pig, withdrawal