hot carcass weight was 93, 90, 91, and 90 kg, dressing percentage was 72, 70, 71, and 70%, backfat thickness was 20, 18, 18, and 18 mm, and IV was 67, 73, 74, and 73, respectively. Adding sources of saturated fat to diets with DDGS improved efficiency of growth but resulted in less saturated carcass fat.

Key Words: Distillers dried grains, Palm oil, Pig

163 Effects of adding stearic acid and coconut oil to diets with sorghum-based distillers dried grains with solubles on growth performance and carcass characteristics in finishing pigs. C. Feoli*[1], J. D. Hancock[1], D. H. Kropf[1], S. Issa[1], T. L. Gugle[1], and S. D. Carter[2], [1]*Kansas State University, Manhattan,* [2]*Oklahoma State University, Stillwater*.

A total of 112 barrows (seven pigs/pen and four pens/treatment with an avg BW of 68 kg) was used in a 67-d growth assay to determine the effects of adding sources of saturated fatty acids to diets with sorghum-based distillers dried grains with solubles (DDGS). Treatments were a corn-soybean meal-based control and diets having 40% DDGS (US Energy Partners, Russell, KS) without and with 5% added stearic acid and coconut oil. Feed and water were consumed on an ad libitum basis until the pigs were slaughtered (avg BW of 123 kg) to allow collection of carcass data. Fatty acid composition of jowl samples was used to calculate iodine value (IV) and bellies were scored for firmness (scale of 1 = very soft to 10 = very firm). The corn-soy control tended to support greater ADG ($P < 0.09$) with no difference in ADFI and G:F ($P > 0.13$) compared to the DDGS treatments. Adding coconut oil to diets with DDGS improved G:F ($P < 0.001$) compared to the stearic acid treatment. As for carcass data, pigs fed the control diet had greater ($P < 0.05$) hot carcass weights than pigs fed the DDGS treatments. However, those differences disappeared ($P > 0.11$) when final BW was used as a covariate. Pigs fed the diet with coconut oil had lower IV and firmer bellies compared to pigs fed the diet with stearic acid ($P < 0.001$). For the control, DDGS, DDGS + stearic acid, and DDGS + coconut oil treatments, ADG was 816, 766, 780, and 794 g/d, ADFI was 2.9, 2.8, 2.9, and 2.6 kg/d, G:F was 281, 274, 269, and 305 g/kg, hot carcass weight was 88, 86, 86, and 88 kg, dressing percentage was 72, 70, 70, and 72%, backfat thickness was 17, 16, 16, and 18 mm, IV was 67, 72, 71, and 67, and firmness score was 6, 4, 5, and 6, respectively. Adding 5% coconut oil to diets with DDGS increased efficiency of growth, reduced iodine value of jowl fat, and improved scores for belly firmness compared to diets with 5% stearic acid.

Key Words: Distillers dried grains, Coconut oil, Pig

164 Standardized ileal digestibility of reactive lysine in distillers dried grains with solubles (DDGS) fed to growing pigs. A. A. Pahm*[1], C. Pedersen[2], and H. H. Stein[1], [1]*University of Illinois, Urbana,* [2]*DANISCO Animal Nutrition, Wiltshire, UK*.

Distillers dried grains with solubles (DDGS) are produced by drying a mixture of wet distillers grains and condensed solubles. During this process, some of the epsilon-NH2 groups in Lys may be bound to reducing sugars through the Maillard reaction. This Lys is called unreactive Lys, whereas Lys that is not bound to reducing sugars is called reactive Lys. It has been suggested that the conventional procedure to measure standardized ileal digestibility (SID) of Lys in DDGS may over-estimate the amount of digestible Lys in DDGS because this procedure does not distinguish between reactive and unreactive Lys, although only the reactive Lys is bioavailable to animals. By measuring the SID of only the reactive Lys, it is expected that the estimation of digestible Lys will be more accurate. The objective of this experiment, therefore, was to test the hypothesis that the SID of reactive Lys is lower than the SID calculated using the conventional procedure.
Ileal cannulated pigs were fed diets containing each of 12 sources of DDGS and the SID for Lys was measured using standard procedures. Diets and ileal digesta samples were also guanidinated with O-Methylisourea and analyzed for the concentration of homoarginine. It was assumed that only the reactive Lys would be transformed to homoarginine, whereas the unreactive Lys would not. This procedure, therefore, allows for a separation of reactive and unreactive Lys, and the SID of reactive Lys could be calculated. Results showed that Lys in DDGS is only 76% reactive. The mean SID of reactive Lys was 66.9%, which is close to the mean SID of total Lys (66.5%). However, the concentration of SID reactive Lys (3.9 g/kg) was lower ($P < 0.05$) than the concentration of SID total Lys (5.1 g/kg). Thus, 24% of the digestible Lys that was calculated using the conventional procedure was unreactive Lys. The implication of this is that the conventional procedure overestimates the concentration of digestible Lys in DDGS, and measurement of reactive Lys may more accurately estimate how much Lys is available too the pig.

Key Words: Amino acids, Digestible reactive Lys, Distillers dried grains with solubles

165 Amino acid digestibility and energy content of corn distillers meal for swine. J. Y. Jacela*[1], J. M. DeRouchey[1], S. S. Dritz[1], M. D. Tokach[1], R. D. Goodband[1], J. L. Nelssen[1], R. C. Sulabo[1], and R. C. Thaler[2], [1]*Kansas State University, Manhattan,* [2]*South Dakota State University, Brookings*.

An experiment was conducted to determine the apparent and standardized ileal digestibility of amino acids and energy of corn distillers meal (CDM) in pigs. Corn distillers meal is distillers grains with the oil partially removed. Five growing barrows (initially 68 kg) were fitted with a T-cannula in the distal ileum and allotted to one of two diets in a crossover design. One diet contained CDM (66.7%) as the sole protein source. The second diet was nitrogen-free to determine basal endogenous AA losses. Each period consists of 7 d with the first 4 d as adaptation period to the diet. On d 5 and 6, feces were collected in the morning and ileal digesta was collected on d 6 and 7 over a 10 h period (between 0600 and 1800 each day). Ileal digesta and fecal samples from each period were analyzed for amino acid and energy contents, respectively. Based on these analyses, apparent ileal digestibility (AID), standardized ileal digestibility (SID), gross energy (GE), digestible energy (DE), metabolizable energy (ME), and net energy (NE) were calculated. The analyzed composition of CDM was 30.8% CP, 4.64% ash, 4.0% EE, 16.1 % ADF, and 34.6% NDF. The GE, DE, ME, and NE values of CDM were 4,090; 2,719; 2,506; and 1,793 kcal/kg on a dry matter basis, respectively. Analyzed amino acids and digestibility values are shown in the table.