224P Effects of pelleting sodium metabisulfite ($Na_2S_2O_5$) or pelleting diets or dried distillers grains with solubles (DDGS) contaminated with deoxynivalenol, on nursery pig performance. H. L. Frobose*[1], E. D. Fruge[2], M. D. Tokach[1], E. L. Hansen[2], J. M. DeRouchey[1], S. S. Dritz[1], R. D. Goodband[1], and J. L. Nelssen[1], *[1]Kansas State University, Manhattan, [2]Hubbard Feeds, Mankato, MN.*

A total of 1,180 mixed sex pigs (initial BW 11.1 kg and 35 d of age) were used in a 21–d growth trial evaluating the effects of pelleting, pelleting DDGS, and the influence of sodium metabisulfite (SMB) in naturally deoxynivalenol (DON)–contaminated diets on nursery pig performance. The study was conducted concurrently under university (7 pigs/pen) and commercial (28 pigs/pen) conditions. At weaning, pigs were weighed and allotted to one of 7 treatments (5 replicate pens at each location) in a 2 × 3+1 factorial with factors being 1) Diet form: meal or pellet, 2) DDGS source: positive control (PC; < 0.5 ppm DON), negative control (NC; 5.5 ppm DON), or NC DDGS pelleted and crumbled before mixing into the final diet. A seventh treatment (5.5 ppm DON), in meal form, included 2.5% SMB before pelleting DDGS (0.77% SMB in final diet). All diets contained 30% DDGS. Pelleting the final diet improved ($P \leq 0.001$) ADG and G:F, but did not alter ADFI. Feeding high DON reduced ($P \leq 0.001$) ADG and ADFI, but did not influence G:F. Pelleting the high DON DDGS alone had no effect on ADG or ADFI; however, there was an interaction ($P \leq 0.04$) for G:F where G:F was improved when high–DON DDGS were pelleted before adding to a meal diet, but not when added to a pelleted diet. Adding SMB to DDGS before pelleting and crumbling into a meal diet improved ($P \leq 0.01$) ADG and ADFI, however, G:F was not affected. These results suggest that when feeding diets containing DON, pelleting diets may be able to help mitigate DON–associated reductions in performance. Although pelleting the DDGS before presenting in the final diet had minimal effect, adding SMB before pelleting appears to impact DON concentrations in the final diet and may offset performance losses associated with DON diets.

Table 1. Effects of pelleting DDGS (PDDGS), pelleting and SMB on performance of pigs fed high-DON diets

		Treatment				P <			
Item	Form[1]	PC	NC[2]	NC + PDDGS[2]	NC + PDDGS/ SMB[2]	DON	Pellet vs Meal	Pellet × DDGS	SMB
ADG, g	M	584	520	543	577	0.001	0.001	0.001	0.005
	P	628	582	581					
ADFI, g	M	881	791	799	848	0.001	0.68	0.94	0.01
	P	875	801	807					
G:F	M	0.66	0.66	0.68	0.68	0.45	0.001	0.04	0.95
	P	0.72	0.73	0.72					
Analyzed DON, ppm[3]	M	<0.5	4.1	4.0	2.2				
	P	<0.5	3.9	4.1					

[1]Diet form: meal (M) or pellet (P).
[2]Formulated to 5.5ppm DON.
[3]Combination of DON and Acetyl-DON.
SEM was 10.5, 18.0 and 0.68 for ADG, ADFI, and G:F.

Key Words: deoxynivalenol, nursery pig, pelleting, sodium metabisulfite

225P Feedlot performance of steers fed distillers grains containing 10 to 12% fat. J. L. Veracini*[1], P. M. Walker[1], R. E. Hall[2], M. J. Faulkner[1], R. L. Atkinson[3], and B. R. Wiegand[4], *[1]Illinois State University, Normal, [2]Cooperative Research Farms, Richmond, VA, [3]Southern Illinois University, Carbondale, [4]University of Missouri, Columbia.*

Modified wet distillers grains (DGS) have become a common replacement for shelled corn. Previous studies have evaluated DGS inclusion into feedlot diets but little information exists regarding the effect of DGS crude fat concentration on performance and carcass characteristics. The objective of this study was to evaluate performance of steers fed DGS containing 10–12% fat at 0, 25, 40, and 70% of the diet DM. Two hundred 40 Angus cross steers (335 ± 55 kg) were blocked by source and stratified within block (3 blocks) by BW to 32 treatment pens containing either 6 or 10 steers/pen. Pens were randomly assigned to one of 4 diets containing 15% corn silage: 1) 80% shelled corn/ 5% soybean meal (CON); 2) 25% DGS/ 60% shelled corn (25 DGS); 3) 40% DGS/ 45% shelled corn (40 DGS); 4) 70% DGS/ 15% shelled corn (70 DGS). Target BW at harvest was 641 kg, with 121 steers harvested on d 161 and 117 steers on d 224. Hot carcass weight and liver abscess scores were recorded on d of harvest. Longissimus muscle area, rib fat thickness, marbling score, and KPH fat were measured after a 20 4 h chill. Marbling score was estimated by a trained USDA grader. Yield grade was determined by formula calculation. No significant differences were observed between treatments regarding ADG or G:F. Steers fed CON had significantly lower ADFI than steers fed DGS. Steers fed 70 DGS had lower ($P \leq 0.05$) DMI compared with steers fed lower DGS concentrations. No significant differences in any of the carcass parameters evaluated were observed. Mean quality grade was average choice. Mean yield grade was 3.0. There was a non-significant ($P = 0.10$) trend for steers fed 70 DGS to have smaller rib eye areas and lower quality grades than steers fed lower DGS inclusion rates. Overall DGS with higher fat concentration (10.4%) can be fed up to 70% of diet DM without compromising feedlot performance or carcass characteristics.

Key Words: distillers grains, steer, performance, carcass

226P Evaluation of replacing corn and soybean meal in lactating dairy cow diets with field peas (*Pisum sativum*) on ruminal pH, ammonia and volatile fatty acid (VFA). J. J. Albrecht*, K. F. Kalscheur, A. R. Hippen, and D. J. Schingoethe, *South Dakota State University, Brookings.*

Four ruminally cannulated lactating Holstein cows in a 4 × 4 Latin square design were used to evaluate the effect of replacing corn and soybean meal with field peas (FP) on rumen characteristics. Cows were 170 ± 46 DIM, produced 35.1 ± 2.5 kg of milk, weighed 727 ± 54 kg at the start of the study. All 4 diets contained 37.5% corn silage and 12.5% alfalfa hay (50:50 forage to concentrate) and were formulated to replace corn and soybean meal with FP at 0 (FP0), 12 (FP12), 24 (FP24) and 36% (FP36) (DM basis) of the diet. Periods were 28 d with rumen fluid collected on d 26. Rumen fluid was sampled with a strainer and syringe from 3 locations within the rumen at 0, 2, 4, 6, 8, 12, 16, and 24 h relative to feeding. Treatment × h interactions were not observed. Ruminal pH (6.38, 6.15, 6.11, and 6.21 with SEM = 0.13 for diets FP0, FP12, FP24, and FP36, respectively) responded quadratically ($P = 0.02$). Ruminal ammonia (7.99, 8.36, 11.57, and 8.64 mg/dl with SEM = 1.43) had a cubic response ($P < 0.01$). Rumi-