0, 1, 2, 3, 4, 5, 6, 12 and 24 h post injection and blood samples were collected at 0, 2, 6 and 12 h for cytokine analysis (IL-1β, IL-6, Il-8, TNFα). Area under the curve (AUC) was calculated for time course data and analyzed using PROC MIXED in SAS. Baseline temps and cytokines were similar between treatments ($P > 0.10$). The LPS elicited a pro-inflammatory response as evidenced by reduced ADG and ADFI, increased temp (39.4 vs 41.2°C) and increased plasma cytokine production ($P < 0.05$) for the 24 h challenge period. Rectal temp and IL-1β were unaffected by dietary treatment ($P > 0.10$). Pigs consuming the 5:1 ratio diet had a 2-fold increase in the AUC for IL-6 ($P < 0.01$) and tended to have increased IL-8 ($P < 0.1$) and TNFα ($P = 0.1$). Area under the curve for IL-6 was increased in the 5:1 LPS pigs (diet × challenge, $P < 0.01$) relative to saline and LPS pigs consuming the other diets. Pigs consuming a diet with an intermediate n-6:n-3 FA ratio of 5:1 had increased production of pro-inflammatory cytokines relative to pigs consuming the high and low n-6:n-3 ratio diets.

**Key Words:** piglet, n-3, cytokine, lipopolysaccharide

**279P Effects of dietary distillers dried grains with solubles (DDGS) on growth performance and nutrient excretion of finishing pigs.** H. J. Kim*, S. D. Carter, M. R. Bible, K. F. Coble, and T. M. Walraven, *Oklahoma State University, Stillwater.*

Eighty crossbred pigs were used to determine the effects of DDGS on growth performance and nutrient excretion during the finishing phase (39 to 124 kg). Pigs were housed in an environmentally controlled building with 4 identical rooms (20 pigs/room), each with a shallow pit, pull-plug system. Pigs were stratified by sex, BW, and ancestry, and randomly assigned to one of 4 rooms. Rooms were randomly allotted to one of 2 dietary treatments. The 2 dietary treatments included a fortified corn-soybean meal (control) diet and the control plus 25% DDGS (87% DM, 30.2% NDF, 28.6% CP, 0.80% P, and 0.50% S), which replaced corn, soybean meal, and dicalcium phosphate in the control diet. Digestible P of the control diet decreased by phase; however, digestible P in the DDGS diet was similar across all phases. Crystalline L-Lys, L-Trp and L-Thr were used to equalize CP content in the diets. At the end of each phase, feed intake was recorded and slurry samples were collected. There was no difference ($P > 0.10$) in growth performance between dietary treatments. Slurry pH (7.34 vs. 6.96) was decreased ($P = 0.02$), but slurry temperature and volume were not affected ($P > 0.10$) by DDGS. Intakes of DM (2,196 vs. 2,180 g/d) and N (63.06 vs.62.03 g/d) were not affected by DDGS. However, DDGS in the diet increased S intake (5.21 vs. 6.92 g/d; $P = 0.02$) by 33%. The daily excretion of DM (339 vs. 421 g/d; $P < 0.06$) and S (2.27 vs. 3.86 g/d; $P = 0.01$) was increased by 24% and 70%, respectively, for pigs fed DDGS. However, N and P excretion were not affected ($P > 0.10$) by DDGS in the diet. In addition, DDGS increased ($P < 0.06$) the cumulative excretion of S (218 vs. 370 g) and DM (339 vs. 421 kg) per pig for the entire finishing period, but the cumulative excretion of N and P was not affected ($P > 0.10$). In conclusion, 25% DDGS in the diet increases the intake and excretion of S, and increases DM excretion. Furthermore, N excretion can be limited for pigs fed DDGS with the use of crystalline amino acids. This work was partially funded by the National Pork Board.

**Key Words:** pigs, DDGS, nutrient excretion

**280P The effects of pelleting, dried distillers drains with solubles source (DDGS), and supplementing sodium metabisulfite ($Na_2S_2O_5$) in nursery pig diets contaminated with deoxynivalenol.** H. L. Frobose*[1], 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.*

In a pilot study, adding sodium metabisulfite (SMB) during pelleting decreased (quadratic; $P \leq 0.001$) analyzed deoxynivalenol (DON) in naturally contaminated corn distillers dried grains with solubles (DDGS). Next, 360 barrows (PIC 1050, 11.2 ± 0.1 kg, 35 d of age) were used in a 21-d experiment examining the effects of pelleting the final diet, pelleting DDGS before final diet manufacturing, and including SMB in high-DON diets on nursery pig performance. Pigs were allotted to pens by BW, with pens assigned to 10 treatments in a randomized complete block design with 7 replicate pens and 5 pigs/pen. The 5 experimental diets were fed in meal or pellet form: 1) positive control (PC); 2) negative control (NC, 5.3 ppm DON); 3) NC with 0.5% SMB; 4) DDGS pelleted and reground (5.3 ppm DON); and 5) DDGS pelleted with 2.5% SMB and reground (final diet 0.5% SMB). All diets contained 20% DDGS (PC: 26.3% CP, 0.6 ppm DON; NC: 26.4% CP, 26.5 ppm DON). Final diets were lower in DON than predicted from ingredient analysis. No 2- or 3-way interactions were found. High-DON concentrations decreased ($P \leq 0.001$) ADFI and tended ($P \leq 0.06$) to decrease ADG. Pelleting PC and NC diets decreased ADFI ($P \leq 0.001$) and improved ($P \leq 0.02$) G:F. Within high-DON diets, pelleting tended to decrease ($P \leq 0.06$) ADFI and improved ($P \leq 0.001$) G:F; however, pelleting DDGS before manufacturing final diets did not influence growth performance. Supplementing SMB tended ($P \leq 0.08$) to decrease ADFI, but had no effect on ADG or G:F. Pelleting high-DON nursery pig diets can recover some reduction in ADFI by improving G:F. Pelleting DDGS and supplementing SMB did not improve performance in DON-contaminated diets in this study.

**Table 1.**

| | | | | | | $P \leq$ | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Treatment | | | | | PC vs. NC | | High-DON diets[3] | |
| Item | PC | NC[2] | NC+ SMB[2] | Pelleted DDGS[2] | Pelleted DDGS+ SMB[2] | DON | M vs. P[1] | M vs. P | SMB |
| ADG, g (M) | 617 | 587 | 573 | 591 | 576 | 0.06 | 0.30 | 0.44 | 0.54 |
| ADG, g (P) | 600 | 567 | 586 | 600 | 595 | | | | |
| ADFI, g (M) | 963 | 891 | 852 | 901 | 879 | 0.001 | 0.001 | 0.06 | 0.08 |
| ADFI, g (P) | 891 | 858 | 836 | 882 | 856 | | | | |
| G:F (M) | 0.64 | 0.66 | 0.67 | 0.66 | 0.66 | 0.45 | 0.02 | 0.001 | 0.12 |
| G:F (P) | 0.67 | 0.66 | 0.70 | 0.68 | 0.70 | | | | |
| DON, ppm[3] (M) | <0.5 | 3.2 | 3.3 | 3.0 | 2.8 | | | | |
| DON, ppm[3] (P) | 0.5 | 3.2 | 0.7 | 1.9 | 0.5 | | | | |

[1]Meal or pellet.
[2]Formulated to 5.3 ppm DON.
[3]Sum of analyzed DON and Acetyl-DON.
SEM was 15.1, 18.9, and 0.010 for ADG, ADFI, and G:F.

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