Table 402.

	Control		DON Contaminated				Probability, $P <$[1]
Item AMMC:	---	0.50%	---	0.25%	0.50%	SEM	DON
Analyzed DON, mg/kg	<0.5	<0.5	6.6	6.7	6.4		
d 0 to 28							
ADG, g	533	516	420	403	421	14.2	0.001
ADFI, g	782	784	686	693	726	23.2	0.003
G:F	0.683	0.658	0.614	0.585	0.583	0.021	0.002
CV, d 28 BW	0.136	0.121	0.166	0.152	0.147	0.015	0.05

[1] No effects observed for AMMC ($P > 0.20$).

402 **Effects of an algae-modified montmorillonite clay and deoxynivalenol on nursery pig performance.** J. A. Erceg*, H. L. Frobose, M. D. Tokach, J. M. DeRouchey, S. S. Dritz, R. D. Goodband, J. L. Nelssen, *Kansas State University, Manhattan.*

A total of 280 barrows and gilts (PIC 327 × 1,050; initially 9.9 ± 1.5 kg) were used in a 28-d growth study to evaluate the effects of an algae-modified montmorillonite clay (AMMC; Olmix S.A., Brehan, France) on the growth performance of nursery pigs fed diets contaminated with deoxynivalenol (DON). Pigs were allotted to 1 of 5 treatments by initial weight, gender, and weaning age in a completely randomized design in a 2 × 2 + 1 factorial arrangement. There were 8 replicate pens per treatment and 7 pigs per pen. Naturally DON-contaminated wheat (10.7 mg/kg) replaced non-contaminated wheat to incorporate DON into test diets. Basal ingredients were tested for mycotoxin and amino acid content prior to diet manufacturing. The 5 experimental diets, fed in pellet form, included a control (<0.5 ppm DON) without or with 0.50% AMMC and a DON contaminated diet (5 ppm DON) without or with 0.25 or 0.50% AMMC. Following diet manufacturing, analyzed DON averaged <0.5 mg/kg for control diets and 6.6 mg/kg for DON contaminated diets. Data were analyzed using mixed model. There were no interactions between DON and AMMC ($P > 0.10$). Overall (d 0 to 28), pigs fed diets containing DON had reduced ($P < 0.01$) ADG (411 vs. 524 g), ADFI (689 vs. 783 g) and G:F (0.600 vs. 0.671) and increased ($P < 0.05$) variation in final BW (15.9 vs. 12.8%) compared with pigs fed diets without DON. The addition of AMMC had no effect ($P > 0.10$) on growth performance. In conclusion, dietary DON reduced pig performance as expected; however, adding AMMC (0.25 or 0.50%) did not mitigate the negative effect.

Key Words: deoxynivalenol. mycotoxin, nursery pig

403 **The effects of an algae-modified montmorillonite clay on nursery pig growth performance in diets contaminated with deoxynivalenol.** S. Q. Fowler*, H. L. Frobose, R. D. Goodband, S. S. Dritz, J. C. Woodworth, J. M. DeRouchey, M. D. Tokach, *Kansas State University, Manhattan.*

A total of 360 barrows (PIC 1,050; initially 11.4 kg and 45 d of age) were used in a 21-d growth experiment evaluating the effects of an algae-modified montmorillonite clay (AMMC; Olmix S.A., Brehan, France) in nursery pig diets naturally-contaminated with deoxynivalenol (DON). Pigs were allotted to pens by BW, and randomly assigned to 1 of 9 dietary treatments in a 3 × 3 factorial arrangement with dietary DON levels (0, 1.5, and 3 mg/kg) and AMMC inclusion (0, 0.15, and 0.50%) as main effects. There were 8 replicate pens per treatment and 5 pigs per pen. Mycotoxin analyses were conducted on the main ingredients at LDA Labs (Ploufragan, France) and the NDSU Veterinary Diagnostic Laboratory (Fargo, ND). Naturally contaminated wheat (6 mg/kg DON) replaced non-contaminated wheat in diets to achieve desired dietary DON levels. All diets were fed in meal form and pig BW and feed disappearance were measured weekly. Analyzed dietary DON concentrations generally matched formulated levels (1.7 and 3.2 mg/kg DON, respectively). No DON × AMMC interactions were detected ($P > 0.09$) for nursery pig growth or BW. As dietary DON level increased, ADG (555, 500, and 484 g/d) and final BW (23.1, 21.9, and 21.6 kg) decreased (quadratic, $P < 0.05$), driven by poorer (quadratic, $P < 0.01$) ADFI (829, 749, and 685 g/d) and feed efficiency (0.674, 0.670, and 0.616). At both 1.5 and 3 mg/kg DON, reductions in ADG were most severe during d 0 to 7 (15 and 22%, respectively), lessening over time to only 6 and 4% during the final period. The addition of AMMC to diets with or without DON had no effect ($P > 0.12$) on nursery pig growth with ADG of 520, 507, 513 g/d and G:F of 0.662, 0.655, and 0.643 for pigs fed 0, 0.15, and 0.50% AMMC, respectively. The results of this study suggest that even at low dietary concentrations, DON reduces performance, and the inclusion of AMMC in diets did not alleviate DON-associated effects on nursery pig growth.

Key Words: deoxynivalenol, mycotoxin, nursery pig

404 **Immune system stimulation by repeated lipopolysaccharide injection alters liver cytoplasmic protein profile in pigs.** A. C. Outhouse*[1], J. K. Grubbs[1], C. K. Tuggle[2], N. K. Gabler[1], A. Rakhshandeh[3], S. M. Lonergan[1], *[1]Iowa State University, Ames, [2]Bioinformatics and Computational Biology Program, Department of Animal Science, Iowa State University, Ames, [3]Texas Tech University, Lubbock.*

Defining the changes in the liver protein profile of pigs in response to immune system stimulation (ISS) will provide insight into how animals handle immunological stress. Therefore, the purpose of this study was to investigate and define the effects of ISS and selection for residual feed intake (RFI) on the liver protein profile of pigs. Pigs divergently selected for low RFI (10 generations) are more efficient than their high RFI contemporaries (5 generations), providing a model to study the biology underpinning feed efficiency. Six (3/line) of 12 gilts