

The 21-d experiment employed weanling pigs with an average initial weight of 6.5 kg. There was no effect of diet on average daily gain or average daily feed. However, during the first week of the experiment, CY increased feed conversion compared with NC and PC ( $P < 0.05$ ). PC reduced feed conversion (0.73) compared with NC (0.77), FSM (0.80), CY (0.82) and FSM and CY (0.79;  $P < 0.05$ ). Over the 21-d experiment, CY increased feed conversion (0.69) compared with NC (0.66), PC (0.65) and FSM plus CY (0.66;  $P < 0.05$ ). There was no difference between CY and FSM (0.67;  $P > 0.05$ ). In conclusion, FSM replaced fish meal or part of the soybean meal with no loss in performance, while the use of CY improved feed efficiency.

**Key Words:** swine, weanlings, fermented soybean meal, candida utilis yeast

**204 The influence of the mannan oligosaccharide Bio-Mos® on sow and piglet performance.** W. H. Close<sup>1</sup>, J. A. Pickard<sup>2</sup>, and K. A. Jacques<sup>\*3</sup>, <sup>1</sup>Close Consultancy, Wokingham, Berkshire, United Kingdom, <sup>2</sup>Alltech Inc., Dunboyne, Co. Meath, Ireland, <sup>3</sup>Alltech Inc., Nicholasville, KY.

A review of 12 studies has been carried out and a summary prepared on the effects of Bio-Mos® in sow diets on both sow and piglet performance. Bio-Mos® had been included at 1 kg/ton during both gestation and lactation, or 2 kg during late gestation and lactation. The number of sows on the various commercial and university trials in several countries was 2,996 and varied between 24 and 1,028 sows over a range of parities in the different trials. Data were analyzed with Bio-Mos® inclusion as the main effect to determine its impact on sow and pre-weaning piglet performance. Including Bio-Mos® in the diet of the sow did not influence the number of piglets born alive (11.24 vs 11.14) ( $P > 0.05$ ), but the number of piglets weaned was numerically higher in all studies: 10.11 ( $\pm 1.09$ ) vs 9.67 ( $\pm 0.74$ ) ( $P > 0.05$ ). This increase resulted from a 21.0% decrease in pre-weaning mortality, from 11.56 ( $\pm 1.85$ ) to 9.13 ( $\pm 1.60$ )%, respectively ( $P < 0.05$ ). The birth weight of the piglets from sows fed Bio-Mos® was similar to that from control fed sows, but weaning weight was increased from 6.87 to 7.17 kg ( $P > 0.05$ ). However, the difference was significant ( $P < 0.05$ ) in 4 of the studies. Colostrum samples were collected in 5 of the studies and Ig concentrations measured. The concentration of IgA, IgM and IgG (mg/dl) was considerably increased when Bio-Mos® was included in the diet of the sow and in several studies the difference was significant ( $P < 0.05$ ). In 2 studies, piglet growth rate was measured during the first 24 h of life and was increased from 83 to 123 g/day and 138 to 164 g/day, respectively ( $P < 0.05$ ), when Bio-Mos® was included in the diet. The responses to Bio-Mos® in sow diets are therefore consistent, with considerable benefits for both sow and piglet productivity.

**Key Words:** mannan oligosaccharide, pre-weaning mortality, piglets, sows

**205 The effects of Biomin Product A and vomitoxin on growth performance of nursery pigs.** H. L. Frobose<sup>\*1</sup>, M. D. Tokach<sup>1</sup>, K. Soltwedel<sup>2</sup>, J. M. DeRouchey<sup>1</sup>, S. S. Dritz<sup>1</sup>, R. D. Goodband<sup>1</sup>, and J. L. Nelssen<sup>1</sup>, <sup>1</sup>Kansas State University, Manhattan, <sup>2</sup>Biomin USA, San Antonio, TX.

A total of 340 barrows (initially 11.6 kg BW and 35 d of age) were used in a 28-d growth trial examining the effects of adding Biomin Product A (Biomin; Herzogenburg, Austria) to diets contaminated with vomitoxin on nursery pig growth performance. Also, 5% water was

added in a diet with Product A as a means of potentially enhancing the activity of the product. Pigs were allotted to pens by weight, and pens were assigned to 1 of 8 treatments in a randomized complete block design. There were 9 pens per treatment and 4 to 5 pigs per pen. Based on initial mycotoxin analysis, dietary treatments were formulated to contain: (1) no vomitoxin or Product A, (2) 1.5 mg/kg vomitoxin and no Product A, (3) 1.5 mg/kg vomitoxin and 0.15% Product A, (4) 1.5 mg/kg vomitoxin and 0.30% Product A, (5) 3.0 mg/kg vomitoxin and no Product A, (6) 3.0 mg/kg vomitoxin and 0.30% Product A, (7) 3.0 mg/kg and 0.45% Product A, and (8) 3.0 mg/kg vomitoxin and 0.45% Product A with 5% water added to the diet. Corn dried distillers grains with solubles containing vomitoxin were used to increase vomitoxin concentrations in the treatment diets. After feed manufacturing, ingredients and diets were analyzed at 2 separate labs. Vomitoxin levels for the low- (1.5 mg/kg) and high- (3.0 mg/kg) vomitoxin diets were determined to average 2.5 and 5.2 mg/kg, respectively. Experimental diets were fed in meal form from d 0 to 21. Overall (d 0 to 21), pigs fed high-vomitoxin diets had decreased ( $P < 0.01$ ) ADG (518 vs 565 g) and ADFI (838 vs 913 g) compared with pigs fed diets lower in vomitoxin concentration. Adding Biomin Product A to vomitoxin diets had no effect ( $P \geq 0.24$ ) on ADG; however, adding Product A to low-vomitoxin diets increased (quadratic,  $P < 0.01$ ) ADFI, resulting in poorer (quadratic,  $P < 0.01$ ) G:F. Furthermore, there were no differences ( $P \geq 0.38$ ) in performance or feed efficiency when 5% water was added. In conclusion, adding Biomin Product A to the diet did not improve nursery pig performance during the 3-week period during which diets containing low or high concentrations of vomitoxin were fed.

**Key Words:** mycotoxin, nursery, vomitoxin

**206 The effects of feed budgeting, complete diet blending, and corn supplement blending on finishing pig growth performance in a commercial environment.** H. L. Frobose<sup>\*1</sup>, J. M. DeRouchey<sup>1</sup>, D. Ryder<sup>2</sup>, M. D. Tokach<sup>1</sup>, S. S. Dritz<sup>1</sup>, R. D. Goodband<sup>1</sup>, and J. L. Nelssen<sup>1</sup>, <sup>1</sup>Kansas State University, Manhattan, <sup>2</sup>Feedlogic Corp., Willmar, MN.

A total of 808 pigs (initial BW = 35.6 kg) were used to compare feed-blending strategies for finishing pigs using the FEEDPro system (Feedlogic Corp., Willmar, MN). FEEDPro is a feed dispensing system that can deliver and blend 2 diets while dispensing. There were 10 pens/treatment and 26 to 27 pigs per pen in a completely randomized design. There were 3 experimental treatments: (1) standard 4-phase complete feed program (Phase), (2) blending a high- and low-lysine complete diet (Curve; daily blending of the 2 complete diets to meet the estimated daily SID lys requirement from d 0 to d 88), and (3) blending ground corn and a supplement to mimic diets fed in 4 phases in treatment 1 (Blend). Experimental diets were fed from d 0 to 88 (~35 to 108 kg BW) with a common diet containing ractopamine HCl fed from d 88 to 110 (~108 to 127 kg BW). Overall (d 0 to 110), pigs phase-fed had greater ( $P < 0.04$ ) ADG than pigs fed the curve or the blend. Pigs fed the curve had lower ( $P < 0.05$ ) ADFI than pigs phase-fed or fed the blend. However, pigs fed the curve had improved ( $P < 0.04$ ) G:F compared with the blend. Pigs phase-fed had heavier (95.3 vs. 92.5 kg;  $P < 0.03$ ) HCW than pigs fed the blend and tended to have heavier (95.3 vs. 93.3 kg;  $P < 0.07$ ) HCW than curve pigs. However, there were no differences ( $P \geq 0.11$ ) in percentage yield, percentage lean, fat depth, or loin depth. There were no differences ( $P \geq 0.11$ ) in total revenue or income over feed costs (IOFC). In conclusion, finishing pigs fed the various feeding strategies had differences in growth performance, however revenue and profitability as measured by IOFC was not affected.