

**778 Effects of adding an enhanced flavor to the creep feed on the proportion of piglets consuming creep feed and pre-weaning performance.** R. C. Sulabo\*<sup>1</sup>, J. M. DeRouchey<sup>1</sup>, M. D. Tokach<sup>1</sup>, C. D. Riskey<sup>2</sup>, R. D. Goodband<sup>1</sup>, S. S. Dritz<sup>1</sup>, and J. L. Nelssen<sup>1</sup>, <sup>1</sup>Kansas State University, Manhattan, <sup>2</sup>Lucta USA Inc., Northbrook, IL.

A total of 50 sows (PIC Line 1050) were used in the study to determine the effects of adding an enhanced flavor to the diet on the proportion of piglets consuming creep feed within litters and pre-weaning performance. Sows were blocked according to parity and date of farrowing and were allotted to two experimental treatments using a randomized complete block design. Treatment 1 was a creep diet with no flavor (Control) and Treatment 2 was the Control diet with the enhanced flavor (Luctarom<sup>®</sup>) included at 1500 ppm. Both creep diets contained 1.0% chromic oxide and were offered *ad libitum* from d 18 until weaning (d 21) using a rotary creep feeder with hopper. A single lactation diet (3,503 kcal ME/kg, 0.97% TID Lys) was used, and sows were allowed free access to feed throughout lactation. Fecal samples from all piglets were taken twice using sterile swabs between 3 and 12 h before weaning. Piglets were categorized as 'eaters' when the fecal sample was colored green at least once on any of the two samplings. Litter weaning weights (66.7 vs. 66.5 kg;  $P > 0.94$ ), total gain (8.9 vs. 8.8 kg;  $P > 0.77$ ), and daily gain (3.0 vs. 2.9 kg;  $P > 0.77$ ) were not different between litters fed creep with and without the enhanced flavor. For individual pigs, weaning weight (6.5 vs. 6.6 kg;  $P > 0.53$ ), total gain (0.87 vs. 0.88 kg;  $P > 0.89$ ), and average daily gain (0.29 vs. 0.29 kg;  $P > 0.89$ ) between the two treatments also were not different. Flavor added to the creep feed did not influence both total (0.60 vs. 0.63 kg;  $P > 0.66$ ) and daily (202 vs. 211 g;  $P > 0.66$ ) creep feed intake of litters and the proportion of creep feed eaters (73 vs. 69%;  $P > 0.41$ ) in whole litters. When creep was provided for 3 d before weaning, adding the enhanced flavor to the creep feed did not affect litter creep feed intake, the proportion of piglets consuming creep feed, and pre-weaning performance.

**Key Words:** Flavor, Creep Feed, Piglet

**779 Diet preference and growth performance in weanling pigs fed diets with *Morinda citrifolia* (noni).** C. Feoli\*<sup>1</sup>, J. D. Hancock<sup>1</sup>, K. C. Behnke<sup>1</sup>, and R. G. Godbee<sup>2</sup>, <sup>1</sup>Kansas State University, Manhattan, <sup>2</sup>*Morinda Agricultural Products, Orem, UT.*

Two experiments were conducted to determine the effects of adding 5% *Morinda citrifolia* (Tahitian Noni International, Orem, UT) to diets for weanling pigs. In the first experiment, 48 pigs (average initial BW of 4.2 kg) were used in a 29-d preference study. There were six pigs/pen and eight pens total. The pens were equipped with two identical feeders (for diets without and with noni puree) and each afternoon position of the feeders was switched to prevent feeder location from affecting diet consumption. The diets were corn-soy-based, pelleted, and had 1.8% Lys for d 0 to 5, 1.6% Lys for d 5 to 15, and 1.4% Lys for d 15 to 29. Feed and water were consumed on an *ad libitum* basis. No differences were noted among diets without and with noni for pelleting ease and/or pellet durability index. Feed intake was increased for d 0 to 5 (50 vs 102 g/d,  $P < 0.05$ ) and d 0 to 15 (66 vs 167 g/d,  $P < 0.006$ ) when noni was added to the diets. However, this effect disappeared for d 15 to 29 so that overall feed intake was not different (183 vs 227 g/d,  $P > 0.39$ ) for d 0 to 29. In a second experiment, 96 pigs (average initial BW of 6.7 kg) were used in a 29-d growth assay. There were six pigs/pen and eight pens/treatment. The diets were the same as those used in the first experiment. Results indicated no differences ( $P > 0.16$ ) in ADG, ADFI, and G:F for d 0 to 5

and 0 to 15 among pigs fed diets without and with noni. However, for d 15 to 29 and overall (d 0 to 29) ADG and ADFI were decreased ( $P < 0.04$ ) for pigs fed diets with noni compared to the control. In conclusion, there was a preference for diets with noni for the first 15 d of the preference study. In the growth assay, prolonged feeding of diets with noni resulted in reduced feed intake and, ultimately, decreased rate of gain. Thus, it seems likely that any advantages to inclusion of noni will be in the early portions of the nursery phase.

**Key Words:** Pig, *Morinda citrifolia*, Noni

**780 Effects of *Morinda citrifolia* (noni) and diet complexity on growth performance in weanling pigs.** C. Feoli\*<sup>1</sup>, J. D. Hancock<sup>1</sup>, K. C. Behnke<sup>1</sup>, and R. G. Godbee<sup>2</sup>, <sup>1</sup>Kansas State University, Manhattan, <sup>2</sup>*Morinda Agricultural Products, Orem, UT.*

Two experiments were conducted to determine the effects of concentration (none, 0.75, 1.5, 3.0, and 6.0%) of *Morinda citrifolia* (Tahitian Noni International, Orem, UT) and diet complexity in weanling pigs. In Exp. 1, 210 pigs (average initial BW of 6.1 kg) were used. There were seven pigs/pen and six pens/treatment during the 35-d growth assay. Diets were corn-soy-based and had 20% whey, 10% lactose, and 5% plasma protein for d 0 to 7 and 15% whey and 2.5% plasma protein for d 7 to 21. Lysine concentrations were 1.8% for d 0 to 7, 1.6% for d 7 to 21, and 1.4% for d 21 to 35 with feed and water consumed on an *ad libitum* basis. Average daily gain (quadratic effect,  $P < 0.03$ ) and G:F (quadratic effect,  $P < 0.08$ ) for d 0 to 7 and G:F for d 0 to 21 (quartic effect,  $P < 0.03$ ) increased as noni concentration in the diet was increased from none to 0.75%. However, no treatment effects were observed overall (d 0 to 35). For Exp. 2, 168 pigs (average initial BW of 6.3 kg) were used. There were six pigs/pen and seven pens/treatment in the 35-d growth assay. Treatments were arranged as a 2 x 2 factorial with main effects of diet formulation (simple vs complex) and noni addition (none vs 3%). Complex diets were those used in Exp. 1. Simple diets had the same minimum nutrient specifications as complex diets but had no added lactose or plasma protein for d 0 to 7 and only 10% added whey for d 7 to 21. Pigs fed simple diets had lower ADG and G:F ( $P < 0.07$ ) for d 0 to 7 and lower ADG and ADFI ( $P < 0.06$ ) for d 0 to 21 than pigs fed complex diets. During d 0 to 35 for ADG and d 0 to 21 for G:F, addition of noni to the simple diets had negative effects and addition of noni to the complex diets had positive effects (diet complexity x noni interaction,  $P < 0.02$ ). In conclusion of the two experiments, noni tended to improve growth performance early in the nursery phase but those positive responses were observed only with complex diet formulations.

**Key Words:** Pig, *Morinda citrifolia*, Noni

**781 Cloning of Ningxiang porcine growth hormone gene and its construction respectively of prokaryotic and eukaryotic expression vector.** W. C. Wang<sup>1</sup>, W. Y. Chu<sup>1</sup>, W. T. Gu<sup>1</sup>, M. M. Geng<sup>1</sup>, T. J. Li<sup>1</sup>, Y. L. Yin\*<sup>1</sup>, and G. Y. Wu<sup>1,2</sup>, <sup>1</sup>The Chinese Academy of Sciences, Changsha, Hunan, P. R. China, <sup>2</sup>Texas A&M University, College Station.

The Ningxiang pig (a Chinese swine breed) has a relatively small body size but its meat has a special flavor of economic importance. To elucidate the mechanisms responsible for the slow rate of growth in this swine breed, we decided to clone the Ningxiang porcine growth hormone