

absorption period in sows especially when protein requirements are high (i.e., late gestation and lactation). This study also suggests that dietary omega-3-fatty acid supplementation controls insulin release during late gestation and early lactation.

**Key Words:** Insulin, Omega-3-fatty acid, Sows

**197 Effects of lactation feed intake and creep feeding on sow and piglet performance.** R. C. Sulabo\*, M. D. Tokach, J. Y. Jacela, J. L. Nelssen, S. S. Dritz, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan*.

The interaction of lactation feed intake (*ad lib* vs. restricted) and creep feeding (none vs. creep) was evaluated using a total of 84 sows and litters blocked according to day of farrowing and parity. *Ad lib* fed sows were allowed free access to a common lactation diet (3,503 kcal ME/kg, 0.97% TID Lys) while restricted sows were fed 25% less than sows fed *ad lib*. A creep diet (3,495 ME/kg, 1.56% TID Lys) with 1.0% chromic oxide was offered to creep-fed pigs from d 3 to 21. Fecal samples from creep-fed pigs were taken using sterile swabs on d 7, 14, and 21 and color was assessed to categorize pigs as eaters or non-eaters. There was no interaction between lactation feed intake and creep feeding. Total and ADFI of *ad lib*-fed sows (99.4, 4.9 kg) were greater ( $P < 0.01$ ) than limit-fed sows (67.9, 3.6 kg). *Ad lib* feeding of sows reduced BW loss (-15 vs. -24 kg;  $P < 0.01$ ), improved total (46.7 vs. 43.0 kg;  $P < 0.04$ ) and daily (2.56 vs. 2.36 kg;  $P < 0.04$ ) gains of litters, and increased (90 vs. 71%;  $P < 0.03$ ) the percentage of sows returning to estrus by d 14 compared with limit-fed sows. Creep feeding did not affect ( $P > 0.34$ ) sow BW and backfat loss, but increased days to estrus (5.4 vs. 4.9 d;  $P < 0.03$ ). Creep feeding tended to improve litter weaning weights (60.2 vs. 56.7 kg/d;  $P < 0.09$ ) by reducing mortality after cross-fostering (3.9 vs. 7.3%;  $P < 0.06$ ). Weaning weights were similar (5.8, 5.8, and 5.7 kg;  $P > 0.81$ ) between eaters, non-eaters, and no creep pigs. Post-weaning performance of creep-fed pigs were similar ( $P > 0.86$ ) to non-creep fed pigs. Eaters tended to be heavier at d 28 post-weaning (16.7, 16.3, and 16.3 kg;  $P < 0.16$ ) and have greater ( $P < 0.06$ ) ADG (0.39, 0.37 and 0.37) and total gains (11.0, 10.5 and 10.5 kg) than non-eaters or no creep pigs. In conclusion, creep feeding improved survivability, but had no effects on pre-weaning gain and sow performance. Low feed intake during lactation negatively affected sow and litter performance. Creating more eaters may benefit post-weaning performance.

**Key Words:** Creep feeding, Feed management, Lactation

**198 Effects of varying creep feeding duration on pre-weaning performance and the proportion of pigs consuming creep feed.** R. C. Sulabo\*, M. D. Tokach, E. J. Wiedemann, J. Y. Jacela, J. L. Nelssen, S. S. Dritz, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan*.

A total of 54 sows (PIC Line 1050) and their litters were used in this study to determine the effects of varying creep feeding duration on the number of pigs consuming creep feed (eaters) and pre-weaning performance. Two groups of sows were blocked according to parity and date of farrowing and allotted to three experimental treatments using a randomized complete block design. Creep feeding was initiated at d 7, 14, and 18 from birth for durations of 13, 6, and 2 d of creep feeding. A creep diet (3,495 kcal ME/kg, 1.56% TID Lys) with 1.0% chromic

oxide was offered *ad libitum* until weaning (d 20) using a rotary creep feeder with hopper. Sows were allowed free access to a single lactation diet (3,503 kcal ME/kg, 0.97% TID Lys) during lactation. Fecal samples from all piglets were taken twice per day using sterile swabs on d 14, 18, and 20 for Treatment 1, d 18 and 20 for Treatment 2, and d 20 for Treatment 3. Piglets were categorized as eaters when fecal sample was colored green at least once on any of the sampling days. Overall, there were no differences in weaning weights (5.7, 5.6, and 5.6 kg;  $P > 0.61$ ), total gain (3.3, 3.1, and 3.1 kg;  $P > 0.38$ ), and daily gain (0.25, 0.24, and 0.24 kg;  $P > 0.38$ ) among pigs fed creep for 13, 6, or 2 d, respectively. Total creep feed intake of litters fed creep for 13 (0.68 kg) and 6 d (0.74 kg) were greater ( $P < 0.01$ ) than those litters provided creep feed for 2 d (0.35 kg). Litters provided with creep feed for 13 d produced 10% more (80 vs. 70%;  $P < 0.03$ ) eaters than litters fed creep for either 6 or 2 d. There were no differences ( $P > 0.98$ ) in the percentage of eaters between litters fed creep for 6 and 2 d. In conclusion, longer durations of creep feeding did not affect pre-weaning gain and weaning weights but increased the proportion of eaters in whole litters; however, a relatively high percentage of pigs (70%) were classified as eaters by providing creep feed for only 2 d prior to weaning.

**Key Words:** Feed management, Creep feed, Pig

**199 Response of cull sows to *ad libitum* feeding.** M. T. Knauer\*<sup>1</sup>, M. T. See<sup>1</sup>, J. A. Hansen<sup>2</sup>, A. L. P. de Souza<sup>2</sup>, and D. C. Kendall<sup>2</sup>, <sup>1</sup>*North Carolina State University, Raleigh*, <sup>2</sup>*Murphy-Brown LLC*.

The ability to add weight and therefore value to cull sows, depending on input costs, may increase farm net income. Two experiments were conducted to define gain and efficiency response in cull sows. Exp. 1 was a 2x4 factorial arrangement of production stage (Wet vs. Dry) by starting BW block (< 180 kg, 181-220 kg, 221-245 kg, and > 246 kg). Pelleted gestation diets (0.63% lysine and 3358 kcal/kg ME) were provided *ad libitum* for 4 wk. Exp. 2 evaluated the effect of Paylean® on dry sow performance over six BW blocks. Pelleted gestation diets consisted of control (0.63% lysine, 3358 kcal/kg ME) and Paylean® 4.5g/ton (0.94% lysine, 3351 kcal/kg ME) fed *ad libitum* for 4 wk. All sows (n = 190 exp. 1 and n = 192 exp. 2) came from two commercial swine farms and were housed two per pen at the NC Swine Evaluation Station, Clayton. Dry sows had superior ( $P < 0.01$ ) G:F when compared to wet sows throughout the trial (0.26 vs. 0.22). Dry sows had higher ( $P < 0.05$ ) ADG in comparison to wet sows throughout the trial (1.25 vs. 0.98 kg/d). Dry sows had greater ( $P < 0.01$ ) increase in fat depth (9.4 vs. 6.2 mm) and loin muscle area (8.6 vs. 6.4 cm<sup>2</sup>) but did not differ in change in body condition score. For Wk 1 to 4, lighter sows had higher ( $P < 0.05$ ) G:F in comparison to heavier groups (0.29 vs. 0.24, 0.22, and 0.21, respectively). For Wk 1 to 4, the lightest weight group had lower ( $P < 0.05$ ) ADFI compared to the heaviest two weight groups (4.28 vs. 4.79 and 5.04 kg, respectively). Sows did not differ by weight group for changes in fat depth and loin muscle area but sows > 246 kg did have a smaller increase ( $P < 0.01$ ) in body condition score than lighter sows (0.27 vs. 0.76). Cull sows fed Paylean® diet were more efficient (0.29 vs. 0.25;  $P < 0.01$ ), showed a smaller increase in fat depth (7.9 vs. 10.5 mm;  $P < 0.01$ ), greater increase in loin muscle area (10.0 vs. 6.7 cm<sup>2</sup>;  $P < 0.01$ ), greater Wk 1 to 2 ADG (1.54 vs. 1.24 kg;  $P < 0.04$ ), greater Wk 1 to 3 ADG (1.43 vs. 1.20 kg;  $P < 0.03$ ) and tended to grow faster throughout the trial (1.35 vs. 1.21 kg;  $P = 0.11$ ). However, sows fed Paylean® and control diets did not differ in ADFI or change in body condition score.

**Key Words:** Sow, Growth, Efficiency