

**195 Relationship of carbohydrate and lipid nutrition to reproduction in sows.** Bas Kemp\* and Henry Van den Brand, *Wageningen University, Wageningen, The Netherlands.*

Due to the high demands for milk production and a low feed intake capacity, sows lose considerable amounts of body reserves during lactation. Especially in the first litter sow this results in an impaired reproductive functioning after lactation. One approach that has been followed to reduce mobilisation of body stores is increasing the dietary fat content. Several reviews state that ME intake can be increased by about 3-32% when using high fat diets. However, fat as an energy source also seems to increase milk fat content. To study the effects of high fat diets on partitioning of energy over sows and piglets our laboratory has conducted several experiments in which fat and carbohydrate rich diets were compared. Generally, it was found that high fat diets increase fat content of the milk, result in fatter piglets at the end of lactation and result in an increased body fat loss in the sows when diets are fed on an isocaloric basis. Fat rich diets may be beneficial in a hot climate since heat production of sows is lower when fat is used for milk production instead of carbohydrates. However the milk fat driving effect of the fat rich diet makes it unlikely that fat rich diets will help the sow to prevent loss of body condition even when the energy intake is higher. It may be that carbohydrate rich diets would positively influence reproductive characteristics of sows during lactation. Carbohydrate rich diets stimulate insulin and IGF-1 production and these hormones are believed to stimulate LH release from the pituitary gland and to stimulate growth of follicles. In the catabolic first litter sow, however, insulin stimulating diets fed during lactation only resulted in small effects on reproductive characteristics like LH release during and after lactation, peri-ovulatory reproductive hormone profiles, ovulation rate and embryonic survival. However, after weaning, feeding of carbohydrate rich diets instead of a fat-rich diet can result in a shorter weaning to estrus interval.

**Key Words:** Nutrition, Reproduction, Sows

**196 Feeding and managing the boar for optimal reproductive capacity.** M. E. Wilson\*, *Minitube of America, Inc.*

Breeding boars and AI boars are a relatively small part of the pig population. Because of this fact, little attention and testing has been done to determine the specific dietary needs of working boars. This paper will review the limited published nutritional data with boars and try to correlate this with field studies on nutrition and management that have been conducted by industry to impact optimal production of the boar. One key to profitability in a boar stud is feeding a diet that allows boars to produce large quantities of high quality semen and maintain respectable body condition and soundness. Restricted feeding programs are used to maintain boars for semen collection over a longer period of time. Since boar turnover in most studs is relatively rapid due to

replacement with higher indexing boars, the restricted feeding program may not provide the best economic return for the boar stud. Increasing feed intake has a positive effect on sperm production while severe restriction adversely affects sperm output and libido of the boar. Boars that gain weight will have higher sperm production than boars maintaining or losing weight. A body condition score of 3 on a scale from 1-5 is desirable. Factors of production such as age, collection frequency, ambient temperature, genetics, and health status all have an important impact on making nutritional decisions regarding the boar diet. It is still important to take care of the basics when evaluating boar nutrition. Further investigation is required regarding the influence of nutrition on sperm production under different environmental conditions. More concerted effort is needed to research techniques to track fertility of semen in relationship to dietary ingredients. The role of fatty acids, such as DHA, appears to have an effect on fecundity in sows when they are inseminated with semen from boars fed specific fatty acid supplements. It is important to find these correlations to fertility to justify costs of specialty ingredients going into boar diets.

**Key Words:** Boar, Nutrition, Sperm Output

**197 Feeding management of the breeding herd: A systems approach.** D. S. Pollmann\*, *Murphy Farms, LLC, Ames, IA.*

Although nutritional concepts that affect sow productivity are commonly researched, the implementation of science-based feeding programs for the breeding herd is a major challenge, especially in large-scale pork production systems. Numerous factors (facility design, feed delivery systems, genetic differences, varying seasonal challenges, program variances and interpretation of the prescribed standard operating procedures) add to the complexity of implementation of well-managed feeding programs. Key performance indicators will be discussed as monitoring tools to ensure that the desired feeding program is effectively implemented. Commonly observed symptoms due to marginal gestation and lactation feeding program implementation will be discussed. Nutritional recommendations will be provided on feeding programs for gilt development, pre-breeding strategies, and ways to enhance feeding during gestation, lactation, and post-weaning. Methods will be reviewed of effective ways to have production personnel understand the science of the nutritional programs and the importance of monitoring and adhering to the prescribed feeding programs. The blending of known nutritional concepts in a labor efficient and easily understood feeding program is of critical nature for successful pork production. The true value of well-conducted research is the ability to enhance productivity and profitability.

**Key Words:** Breeding Herd Nutrition, Sow Productivity, Feeding Program Implementation

## Odor And Nutrient Management

**198 Intrinsic phytase reduces excretion of volatile organic compounds in pigs.** A. Woldeghiebril\*<sup>1</sup>, A Koenigsfeld<sup>1</sup>, and A. Mathew<sup>2</sup>, <sup>1</sup>*Lincoln University, Jefferson City MO*, <sup>2</sup>*University of Tennessee, Knoxville TN.*

A study involving three wk-old pigs (n=84) was conducted to evaluate the efficacy of intrinsic phytase (IP) from wheat middlings (WM) on BW gain of pigs, and ammonia and VFA excretion in feces. IP was provided by substituting 25% of WM for an equal part of corn in the corn-soybean meal based diets. The pigs were housed in pens (7/pen), with diets randomly assigned to pens (3 pens/diet). Diets used were: corn soybean meal-based control diet (D-1), D-1 plus microbial phytase (MP; Natuphos, 1,200 PU/g; D-2), D-1 plus IP (D-3), and D-3 plus MP (D-4). The diets were also designated as either low (D-1 and D-2), or high (D-3 and D-4) fiber diets. Feed was offered once/d on a regular (D-1, D-3) or, phase-fed (D-2, D4) basis with free access to water 24 h/d. Fresh fecal samples collected from pens were used to determine VFA, and ammonia concentrations. Results from the study indicated that pigs fed diets containing MP consumed more feed (P<.05), gained faster (P<.05), and were 14.5% more efficient than D-1 fed pigs. Pigs fed high-fiber diets with/without MP consumed more, and gained faster (P<.05) than D-1 fed pigs. VFA concentration in feces from pigs fed D-1 or D-2 was greater (P < .01) than in pigs fed D-3 or D-4. Also, VFA in feces from pigs fed D-4 was greater (P<.01) than in D-3 fed pigs. The

level of ammonia in feces within each fiber category was not affected by treatment. However, ammonia in feces from pigs fed D-3 or D-4 was greater (P<.05) than from pigs fed D-1 or D-2. In conclusion, addition of MP, or IP to the corn soybean meal-based diet improved feed intake, feed efficiency, and weight gain of pigs, and reduced ammonia and VFA excretion in feces. IP can not substitute MP in a 1:1 ratio however, it is a cheaper but less effective alternative to MP.

**Key Words:** Phytase, VFA, Ammonia

**199 Effects of phytase on nutrient digestibility and amount of odorous compounds in slurries of weaned pigs.** Q.M. Yang\* and S.K. Baidoo, *Southern Research and Outreach Center, University of Minnesota.*

Crossbred weaned pigs (n=216, BW of 5.8kg and 20 d of age) were randomly allotted to 3 dietary treatments with 9 pen replicates per treatment. The dietary treatments were (1) Control: Corn-SBM with 100% dicalcium phosphate; (2) Treatment 1: with 50% dicalcium phosphate + 500 phytase ((Natuphos<sup>#</sup>, BASF) units (PU/kg diet); (3) Treatment 2: without dicalcium phosphate + 500 phytase units/kg diet. The pH, ammonia emission and volatile fatty acids (VFAs) in slurries, and the digestibility of nutrients in the diets were determined. The results indicated that phytase supplementation in diets improved the digestibility

of organic phosphorus (P). Total P and organic P in feces from control diet were higher ( $P < 0.05$ ) than the feces from diets with supplemented phytase, but nitrogen content of feces was not ( $P > 0.05$ ) influenced by dietary treatments. Phytase supplementation had no effect on pH,  $\text{NH}_3$  and VFAs of slurry. The pH of fresh pig feces diluted with water (1:2.5) and urine (1:2.5) were, respectively,  $5.56 \pm 0.28$  and  $7.08 \pm 0.18$ . The pH of feces diluted with urine decreased by 2.8% within 2 days and then increased by 17.1%, the pH of feces diluted with water decreased by 3.7% within 2 days and then increased by 21.2% during 14-d storage. The  $\text{NH}_3$  emission from feces diluted with water was lower ( $P < 0.01$ ) than feces diluted with urine within 14-d storage period. The emission of  $\text{NH}_3$  was correlated ( $r = 0.81$ ) with pH in slurry within a pH range from 5.5 to 8.2.  $\text{NH}_3$  emission and the content of VFAs in slurry increased during the 14-d storage and these increases were dependent on the amount of ammonium in slurry. In summary, phytase supplementation improved the digestibility of organic P and reduced the P content in the feces, but did not decrease the production of ammonia and VFAs of slurry. Urine or ammonium amount in slurry increased its pH and produced more  $\text{NH}_3$ .  $\text{NH}_3$  emission and the content of VFAs in slurry increased during the 14-d storage periods.

**Key Words:** Swine manure, Phytase, Ammonia

**200 Effect of high available phosphorus (HAP) corn and phytase on phosphorus (P) excretion in finishing beef cattle.** S. L. Hankins\*, J. D. Arseneau, S. A. DeCamp, R. P. Lemenager, and A. L. Sutton, *Purdue University, West Lafayette, IN.*

Two trials were conducted to determine the effect of microbial phytase (PHY) and HAP corn substitution for normal corn (NC), on the nutrient digestibility and performance of finishing beef steers. In Exp. 1, four crossbred steers (Initial BW=345 kg) were used in a 4X4 Latin square design and fed four high concentrate diets ad libitum. The diets were: 1) NC/15% corn silage (CS) balanced to NRC (1996) specifications for protein, vitamins and minerals (STD), 2) diet 1 plus 0.10% PHY (STD+PHY), 3) diet 1 with HAP corn replacing NC and 15% CS (HAP), and 4) diet 3 with 0.10% PHY (HAP+PHY). No supplemental P was added to the diets. Steers were adapted to metabolism stalls for five days prior to trial initiation. Total feces and urine were collected following a 9 d diet adaptation and 5 d collection. Exp. 2 utilized 48 crossbred steers (Initial BW=273 kg) individually fed a high concentrate diet with no supplemental P for a 168 d feeding period. Steers were allotted to four TRT including: 1) STD; 2) STD+PHY; 3) STD, limit fed to 85% of ad lib intake (LIM); and 4) STD+PHY, limit fed to 85% of ad lib intake (LIM+PHY). Limit fed steers were increased to ad lib intake starting on d 75. Steer weights were taken at the initiation, every 28 d and at the completion of the trial. Steers were harvested (approx. 567 kg BW) and carcass data were collected after a 48 h chill. Four steers from the STD and STD+PHY diets ( $n=8$ ) were placed in metabolism stalls for collection of urine and feces during the last period. In Exp. 1, total ammonium N was decreased with PHY addition to the normal corn diet, but was increased with PHY addition to HAP corn diets, creating an interaction ( $P < .05$ ). There was a trend towards increased N retention and reduced N excretion with PHY addition. In Exp. 2, addition of PHY increased DMI and ADG, but reduced G:F ( $P < .05$ ). PHY inclusion reduced fecal Cu and S concentrations, but increased fecal propionate. In this study, PHY addition to a beef diet did not affect N or P digestibility. Trends observed in this beef study warrant further investigation with larger numbers of animals, especially in the areas of N retention/excretion and cation balance.

**Key Words:** Cattle, Excretion, Phosphorus

**201 Effects of dietary crude protein reduction on pig performance, manure composition, aerial ammonia, hydrogen sulfide, and odor levels in swine buildings.** B.E. Hill\*<sup>1</sup>, D.C. Kendall<sup>2</sup>, S.L. Hankins<sup>1</sup>, S.A. Trapp<sup>1</sup>, B.T. Richert<sup>1</sup>, D.T. Kelly<sup>1</sup>, A.L. Sutton<sup>1</sup>, G.L. Allee<sup>2</sup>, T.A. van Kempen<sup>3</sup>, and W.J. Powers<sup>4</sup>, <sup>1</sup>Purdue University, W. Lafayette, In, <sup>2</sup>University of Missouri, Columbia, <sup>3</sup>North Carolina State University, Raleigh, <sup>4</sup>Iowa State University, Ames.

An experiment was conducted with grow-finish pigs ( $n=200$ ) to evaluate dietary crude protein reduction of swine diets to reduce aerial pollutants and nutrient excretion. Pigs (initial BW=92.3 kg) were placed in two identical, environmentally controlled rooms (5 pigs/pen, 5 pens/room; 50 pigs/rep) with treatments rotating between rooms. Diets were fed for

4 weeks and consisted of either a control, corn-soybean diet (13.1% CP, .52% true ileal digestible lys (TIDLys) for the barrows and 14.2% CP, .59% TIDLys for the gilts; CONT) or a reduced CP diet with supplemental synthetic amino acids (9.7% CP, .52% TIDLys for the barrows and 10.6% CP, .59% TIDLys for the gilts; LCP). Aerial ammonia concentration (AAC), hydrogen sulfide (HS), and detection threshold of odor (DT) samples were taken at wk 2 and 4 from both room and exhaust air. Ultrasound measurements and manure samples were collected at wk 0 and 4. Pigs fed CONT or LCP diets had similar overall ADG (790 vs. 784 g/d), overall G:F (.304 vs. .297), and ADFI (2601 vs. 2649 g/d). Pigs fed LCP had greater wk 4 loin depth (75 vs. 72 mm;  $P < .019$ ), numerically higher backfat thickness (17.9 vs. 16.9 mm) and greater total loin depth increase (11.9 vs. 9.4 mm;  $P < .003$ ). By wk 4, there was a 60.4% reduction in AAC ( $P < .04$ ) from room air and 52.2% reduction in the exhaust air AAC (13.4 vs 28.1 ppm;  $P < .0003$ ) when pigs were fed LCP diets. At wk 4, the stored manure from pigs fed LCP diets had 29.80% less total-N ( $P < .0001$ ), 30.6% lower ammonium-N ( $P < .0001$ ), 35.8% less total-N accumulation in the manure ( $P < .01$ ), and a lower manure pH (7.25 vs. 7.61;  $P < .0001$ ). The LCP diet was effective at reducing AAC, manure N, and manure pH while increasing final loin depth. In addition, if adequate amino acid levels are included in the diet, growth performance is comparable to a diet without synthetic amino acids.

**Key Words:** Pig, Odor, Manure Composition

**202 Nutrient Composition of Swine Lagoons and Hoop Barn Manure.** J.M. DeRouchey\*, R.D. Goodband, J.L. Nelssen, M.D. Tokach, S.S. Dritz, and J.P. Murphy, *Kansas State University, Manhattan.*

In accordance with state law, Kansas producers had designed nutrient management plans and applied manure to their fields using book values for swine manure composition. Concern was raised that these values are not applicable for all types of operations. This study was designed to determine the impacts of production phase and season of the year on the nutrient levels in swine manure. A total of 236 lagoon and 35 hoop barn manure samples were collected. Starting in February, 2000, lagoon samples were collected and analyzed every two months from five different types of production systems (sow, nursery; wean-to-finish, finish, and farrow-to-finish with a total of 9, 8, 7, 10, and 8 lagoons sampled, respectively). Manure from hoop barns (finishing only) also was collected and analyzed. Sampling technique and time of sampling each month was uniform across all sites. Average concentrations for total N and P were 1,402 and 204 ppm, respectively; however, the variation in concentration was great for both N (SEM=420) and P (SEM=80). Lagoon effluent from finishing (1,820 ppm) and wean-to-finish (1,852 ppm) lagoons had greater ( $P < 0.05$ ) N compared to sow (967 ppm) and farrow-to-finish (810 ppm) lagoons. Phosphorus in farrow-to-finish (106 ppm) lagoons was lower ( $P < 0.05$ ) than in wean-to-finish (302 ppm) lagoons. For seasonal characteristics, total N decreased (linear,  $P < 0.05$ ) from February (1,571 ppm) until December (1,241 ppm) with the largest decline occurring between June (1,635 ppm) and August (1,239 ppm). Phosphorus also was influenced by season (quadratic,  $P < 0.05$ ) with the highest levels occurring during June (287 ppm) and August (240 ppm) and the lowest during February (152 ppm) and December (212 ppm). For hoop barn manure, average concentrations for total N and P were 8,678 and 4,364 ppm, respectively. Therefore, season and type of production phase affects the nutrient content of swine lagoons. As a result of this project, Kansas producers are using individual analyses from their lagoons when developing nutrient management plans.

**Key Words:** Swine Lagoons, Hoop Barn, Nutrient Management

**203 Infrared spectroscopy as an optical nose for predicting odor sensation.** T.A.T.G. van Kempen\*<sup>1</sup>, W.J. Powers<sup>2</sup>, and A. Sutton<sup>3</sup>, <sup>1</sup>North Carolina State University, <sup>2</sup>Iowa State University, <sup>3</sup>Purdue University.

Quantifying odor is important for objectively assessing the impact of animal production systems on surrounding areas. A possible method that has received little attention is mid infrared spectroscopy (FTIR). Gases that contribute to odor have a unique infrared spectrum, and the advantage of FTIR over electronic noses or gas chromatography is that theoretically all these gases can be analyzed instantaneously. To determine the feasibility of FTIR for predicting odor, 27 air samples analyzed

by olfactometry were scanned in a Magna 760 FTIR spectrometer (Nicolet, Madison, WI) using an 84-meter path length gas cell. Scans were obtained over a period of about one minute and from 4000 to 740  $\text{cm}^{-1}$  with a resolution of 0.5  $\text{cm}^{-1}$ . Spectral data were correlated with olfactory data using partial least squares regression with full cross-validation (using The Unscrambler, Camo, Trondheim, No). Air samples were obtained from experiments with pigs fed diets formulated to alter odor emission. Due to low ventilation rates (15  $\text{m}^3/(\text{pigplacehour})$ ), high odor intensities were obtained, averaging  $997 \pm 585$ , with a range from 248 to 2161. Using these samples, a prediction error for odor sensation of 461 odor units ( $r^2=0.36$ ) was obtained. It is estimated that the measurement error of olfactometry is 300 units which limits the  $r^2$  of any method to approximately 0.75. Thus, this calibration, even though it is based on a small number of samples, is encouraging. By adding 23 samples collected under production conditions the prediction error could be further improved to 373 ( $r^2=0.51$ ) but the use of two sources of samples may affect the validity of this calibration. In conclusion, FTIR shows promise as an optical nose, but its true potential needs to be tested with a large number of field samples.

**Key Words:** Infrared, Odor, Swine

**204 Odor solutions initiative manure pit additive testing results.** C. L. Tengman<sup>\*1</sup>, R. N. Goodwin<sup>1</sup>, A. K. Gralapp-Gonzalez<sup>1</sup>, A. J. Heber<sup>2</sup>, J. Q. Ni<sup>2</sup>, K. J. Fakhoury<sup>2</sup>, and A. L. Sutton<sup>2</sup>, <sup>1</sup>National Pork Board, Des Moines, IA, <sup>2</sup>Purdue University, West Lafayette, IN.

Thirty-five manure storage pit additive odor control products were evaluated in triplicate. Each product was tested in an enclosed 15-inch

**205 Effects of estradiol (E) and pregnant mare serum gonadotropin (PMSG) on follicular growth in neonatal pigs.** P. E. Davis<sup>\*</sup> and M. C. Lucy, University of Missouri-Columbia.

Previously we found that pigs treated with E had fewer primordial follicles but equivalent numbers of growing follicles compared to control. We hypothesized that follicles initiated growth in response to E but failed to continue growth because of E-induced reduction of FSH. To test our hypothesis five-day-old piglets ( $n=31$ ) were treated in a two by two factorial design: T1, E (two-24 mg E implants) and PMSG (10 iu/kg injected twice weekly); T2, sham implanted and PMSG; T3, E implants and saline injection; and T4 (control) sham implanted and saline injection. Blood was sampled weekly and ovaries were collected on d 45 of treatment. Pigs treated with E had greater serum E than control (213 vs. 6 pg/ml; SEM=22;  $P<.001$ ). There was a main effect of E ( $P<.001$ ) and a tendency for an effect of PMSG ( $P<.10$ ) for combined ovarian weight (0.24 .01, 0.18 .01, 0.23 .01, and 0.15 .01 g for T1 to T4). Histological follicle classifications were: primordial [oocyte with no cuboidal granulosa cells (CGC)]; F0-1 (oocyte with CGC and flattened granulosa cells); F1 (oocyte with one complete layer of CGC); F1-2 (oocyte with more than one layer of CGC, but not two); and F>2 (oocyte with more than two layers of CGC). There was a main effect of E ( $P<.001$ ) and PMSG ( $P<.005$ ) for primordial follicles because E decreased the number of primordial follicles whereas PMSG increased the number of primordial follicles per field (38.2 8.0, 95.6 7.4, 29.1 8.0, and 53.4 8.0 for T1 to T4). There was also a main effect of E on growing follicles (F0-1, F1-2, and F>2) because E decreased the number of F0-1 (52 vs. 82; SEM=6;  $P<.001$ ), F1-2 (15 vs. 34; SEM=4;  $P<.001$ ), and F>2 (.2 vs. 3.7; SEM=.8;  $P<.01$ ) follicles per section. E did not affect the number of F1 follicles. PMSG did not affect the number of growing follicles (F0-1, F1, F1-2, and F>2). In summary, E increased ovarian weight while reducing the number of primordial and growing follicles. PMSG increased the number of primordial follicles and had no effect on growing follicles in either T1 or T2 pigs.

**Key Words:** Pig, Follicle, Estradiol

diameter by 48-inch tall cylinder. The test cylinders were located in an environmentally controlled room where the temperature was held at 20°C. Each cylinder was continuously ventilated with 7 Lpm of odor-free air. Periodic manure and product additions were made throughout the 42-day trials. Manure added to the cylinders was collected from a commercial swine grow-finish farm with a shallow pit manure system. All products were tested as prescribed by the vendors. Ammonia and hydrogen sulfide emissions from each cylinder were measured automatically several times a day. Air samples were collected four times during each trial and evaluated for odor concentration using olfactometry. Initial and final manure characteristics were also analyzed. Product effectiveness was determined by comparing odor, hydrogen sulfide, and ammonia measurements in treated cylinders against measurements in untreated cylinders. Statistical analysis provides measures of probability of differences in product activity. Results are reported at 75% and 95% levels of certainty. At 95% certainty, 0 products were found to reduce odor, 7 reduced hydrogen sulfide up to 47%, and 8 reduced ammonia up to 15%. At 75% certainty, 4 products reduced odor up to 32%, 3 reduced hydrogen sulfide up to 19%, and 4 reduced ammonia up to 3%. Overall, 20 products had a positive affect on reducing one of the three air emissions measurements.

**Key Words:** Odor Control, Pit Additives, Manure Additives

**206 Effect of PG600 given at d 7 post-weaning on follicular development, estrus, and ovulation in sows classified as anestrus in a commercial swine herd.** C.J. Bracken<sup>\*</sup>, J.S. Seaman, T.J. Safranski, and M.C. Lucy, University of Missouri.

PG600 (400 units PMSG and 200 units hCG, Intervet, Millsboro, DE) is given to induce estrus and ovulation during the period of seasonal anestrus. The objective of this study was to examine follicular dynamics and the relationship between estrus and ovulation in sows not observed in estrus by d 7 post-weaning and treated with either PG600 or saline (control). The study was conducted at a commercial swine farm in Marshall, MO during August 2001. Sows ( $n=57$ ) were weaned in three groups at 15.2 0.3 d after farrowing. Sows that did not exhibit estrus by d 7 post-weaning were randomly assigned to receive a 5 mL IM injection of either PG600 ( $n=28$ ) or saline ( $n=29$ ). Transrectal ultrasonography was performed once daily beginning on the day of treatment (d 0) and continued for 6 d. Follicular diameter was measured and time of ovulation was recorded. Estrus detection was performed once daily using fenceline boar contact. There was an effect of group on follicular diameter ( $P<0.01$ ) because follicles were smaller for group 1 (4.2 0.2 mm) compared to groups 2 (4.8 0.1 mm) and 3 (4.7 0.2 mm). Follicles in PG600 and saline treated sows had similar diameter on d 0 (4.0 0.1 mm vs. 4.2 0.1 mm). By d 6, follicular diameter had increased for PG600 sows but not saline sows (6.0 0.2 mm vs. 4.1 0.1 mm;  $P<0.001$ ). Greater follicular development in PG600 sows was associated with an increase in percentage of sows in estrus ( $P<0.001$ ) and percentage of sows ovulating within 6 d ( $P<0.001$ ) for PG600 (93.1 and 72.4%) compared to saline (32.1 and 10.7%). The treatment by group interaction was not significant for percentage of sows in estrus or ovulating. Treatment to estrus interval (3.7 0.3 d) and estrus to ovulation interval (2.0 0.1 d) were similar for PG600 and saline sows. We conclude that summertime PG600 treatment of anestrus sows at d 7 post-weaning increases follicular development and the number of sows expressing estrus and ovulating within 6 d of treatment.

**Key Words:** PG600, Sow, Anestrus