News From KSU Animal Sciences

NOVEMBER 2025

KSU Swine Day to be Hosted November 20

Registration is now open for KSU Swine Day, to be hosted at the K-State Alumni Center in Manhattan, Kansas, on Thursday, November 20. The trade show, with more than 30 exhibitors, will begin at 8 a.m., followed by a great program with updates on K-State Applied Swine Nutrition Research, and featuring a presentation from Dr. Arkin Wu, Director of Nutrition and Technical Service at Riverstone Farms in China on "Understanding China's ever-changing pork production landscape."

The schedule is as follows:

8:00 a.m.	Technology Trade Show *The trade show will conclude at 4 p.m.*
9:15 a.m.	Welcome
9:30 a.m	Latest Update on K-State Applied Swine Nutrition Research, K-State Swine Faculty *Research highlights of Nutrition, Management, Feed Processing and Feed Safety*
11:30 a.m.	Lunch with Technology Trade Show
1:30 p.m.	Latest Update on K-State Applied Swine Nutrition Research, cont...
2:30 p.m.	Understanding China's everchanging pork production landscape *Dr. Arkin Wu, Director of Nutrition and Technical Services, Riverstone Farms, China*
3:15 p.m.	Question-and-Answer Session
3:30 p.m.	Reception with K-State Call Hall Ice Cream

On-site registration is $50 per participant. There is no charge for K-State students if they are pre-registered. The complete schedule can be found at KSUswine.org. For more information, contact Katie Smith (katiesmith@ksu.edu or 785-532-1267).

Save The Date - 2026 K-State Junior Producer Days

We are excited to announce the dates for the 2026 K-State Junior Producer Days! The Junior Beef Producer Day will be Saturday, March 7. Tentative topics range from selection to health, and showmanship. The deadline to register is February 13. The cost is $20/person by the deadline, or $30 after. Only those registered by February 13 will receive a t-shirt. Junior Sheep Producer Day will be hosted Saturday, April 11. Tentative topics include selection to nutrition, and showmanship. Registration will be due March 20. The cost is $20/person and t-shirts are only guaranteed for those who sign up by the deadline. Late registrations will be $30/person.

All youth, parents, leaders, extension agents, and ag teachers are invited to participate in these one-day, family educational experiences. K-State faculty members, graduate students, veterinarians, extension agents, guest speakers and former exhibitors will provide the sessions. There will also be an optional instructor-led YQCA training at the conclusion of the program for both events.

A new registration system will be used this year for the junior day events. Watch the website and Facebook page for details!

IRM Redbooks for Sale

The 2026 IRM Redbooks are now for sale and will be sold on a first-come, first-serve basis. The price is $7.65 per book for orders of 10 or more and $8.00 per book for orders of less than 10, which includes postage. To order your supply of Redbooks, contact Katie Smith (katiesmith@ksu.edu or 785-532-1267).

Upcoming Events

November 20, 2025
Swine Day

February 3, 2026
Swine Profitability Conference

February 19-21, 2026
K-State College Rodeo

March 5, 2026
Stockmen's Dinner

March 6, 2026
Cattlemen's Day

March 6, 2026
Legacy Bull Sale

March 7, 2026
K-State Junior Beef Producer Day

April 11, 2026
K-State Junior Sheep Producer Day

April 16, 2026
Judging Team Reunion

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What's New

Management Minute

"No, But, and However"

Justin Waggoner
KSU Extension Beef Cattle Specialist
Garden City, KS

In the book "What Got You Here Won't Get You There" the author Marshall Goldsmith (https://www.marshallgoldsmith.com/) encourages readers to take note of how often they start conversations as a leader with the words "No", "But", or "However" or reply to co-workers in a conversation with these words. Goldsmith suggests that regardless of context, replying in a conversation or starting a sentence with these words sends an unintentional message to that other person that they are wrong and you are right. These statements also inadvertently send a message that you likely completely disregarded anything the other person previously said. In the workplace fostering an environment the encourages team members to openly communicate new ideas and offer constructive input is valuable. Responding with "No", "But" or "However" can quickly shut down any workplace discussion. Thus, as a leader or manager it can be extremely valuable to recognize how often you use these terms. Goldsmith suggest that leaders should ask co-workers to track how often they use "No", "But" or "However". Most leaders don't realize how often they use these words that ultimately may be reducing their effectiveness as a leader or manager.

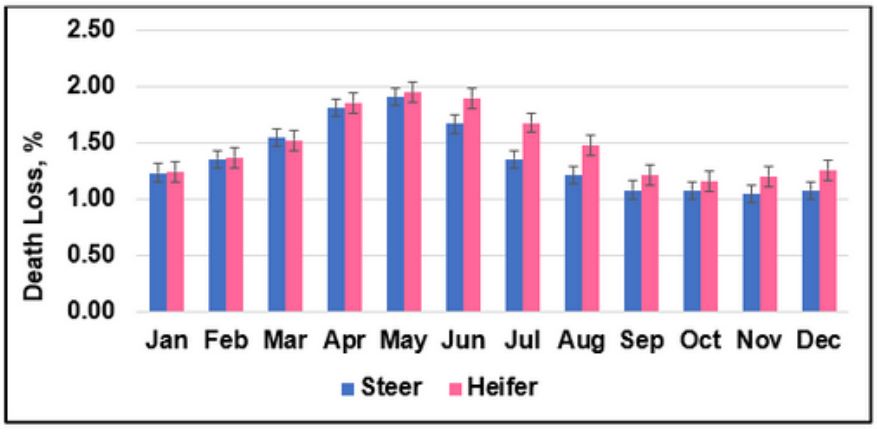
Feedlot Facts

"Effect of Closeout Month on Feedyard Death Loss"

Justin Waggoner
KSU Extension Beef Cattle Specialist
Garden City, KS

The Kansas State University Focus on Feedlots is a monthly publication that summarizes performance and feedlot closeout data from commercial cattle feeding operations. Recently, an analysis of the Focus on Feedlot historical data evaluated the effects of closeout month on feedyard death loss from 1994 to 2024 (30 years). Closeout month influenced average feedyard death loss % reported in the Focus on Feedlot report ($P < 0.01$). Additionally, the results of the analysis suggest a seasonal pattern. Reported steer and heifer death loss % was generally lowest in the Fall (Sep., Oct., Nov.) and highest in the Spring (Apr., May). It is also interesting that heifer death loss % remained elevated throughout the summer (Jun., Jul., Aug.). This data suggests that feedyard managers and staff should consider expected closeout month/season as a factor when implementing cattle health management protocols.

Figure 1. Mean Death loss % reported in the KSU Focus on Feedlots from 1994-2024.



For more information, contact Justin Waggoner at jwaggon@ksu.edu

KSU Cow-Calf Checklist - November 2025

Management Considerations for January 2026

By Jason M. Warner, Ph.D., Extension Cow-Calf Specialist

Cow Herd Management

- Body condition score both spring- and fall-calving cows.
  - Target BCS for spring calvers at calving: 5 for mature cows, 6 for young females
  - Adjust nutrition program prior to calving as needed for spring-calvers
  - Ensure fall-calvers maintain BCS through winter if still nursing calves
- Continue grazing crop residues and dormant pastures as they are available but be prepared to move cattle or provide supplemental feed as conditions dictate.
- Be ready to react to severe winter weather effects on cow nutrient requirements by providing additional feed.
- Review your nutrition program and test harvested forages for the following:
  - Moisture/dry matter
  - Crude protein
  - Energy (NE_m, NE_g, and/or TDN)
  - Fiber components (ADF, NDF)
  - Macro-minerals (calcium, phosphorus, magnesium, potassium, salt)
  - Nitrates when appropriate
  - Starch for silage crops
- Manage young and mature bulls during the offseason to ensure bulls are BCS ≥ 5.0 prior to the next season of use and have adequate winter protection.

Calf Management

- Consider your plans for weaning and marketing fall-born calves.
  - Watch the feeder calf market
  - Evaluate your feed resources and cost of gain
  - Talk to prospective buyers in advance of selling
- Review/update your health protocols as needed for newborn calves.
- Consider either supplementing fall-calving pairs or creep feeding fall-born calves to maintain calf performance on low-quality winter forages.
- Monitor replacement heifers to ensure they are adequately growing and developing, take check weights and adjust your plane of nutrition accordingly.

General Management

- Update herd records and use them to assess performance.
- Review your genetic selection strategy to ensure your goals are met.
- Develop and/or revise your risk management plans for the coming year.
- Discuss herd health protocols with your veterinarian.
- Take inventory of supplies and clean equipment prior to spring calving.
- Ensure plans are in place to provide bedding, wind protection, and snow removal.
- Make arrangements to ensure sufficient water is available in freezing conditions.
- Evaluate your short and long-term herd inventory goals with current conditions.
- Renew lease arrangements as necessary.
- Schedule an annual meeting with your lender, insurance agent, and extension professional.

What's New for Swine Producers

Effects of Maternal Swine Appeasing Substance on Growth Performance of Nursery Pigs- Two experiments using a total of 640 weanling pigs were conducted to determine the effects of a maternal swine appeasing substance (FerAppease, FERA Diagnostics and Biologicals, College Station, TX) on growth performance, salivary cortisol concentration, and fecal microbiome of nursery pigs. In exp. 1, a total of 360 weanling pigs (DNA 600 × 241; initially 12.6 lb) were used in a 24-d study with five pigs per pen. Due to the potential contact of pigs in adjacent pens transferring the test product, pens were grouped by treatment within the barn and groups were distributed in the barn to minimize this risk. In exp. 1, there were two blocks of pens for each treatment (four total blocks of pens), with each block having 18 pens. In exp. 2, a total of 280 weanling pigs (DNA 600 × 241; initially 12.1 lb) were used in a 45-d study with five pigs per pen in 56 pens split in two rooms. Treatment groups were located in blocks of seven pens to avoid contact between treatment groups, and each treatment was assigned to four blocks (eight blocks total). Block of like treatments was considered the experimental unit for analysis of growth performance data. In both experiments, pens were assigned either a control (placebo of mineral oil) or the appeasing substance (FerAppease, FERA diagnostics and Biologicals, College Station TX). Applications of 3 mL/pig were done at d 0 (weaning) and d 10 by spraying the substance on the forehead of each individual pig. To limit any cross-contamination, either empty pens or the walkway separated the groups to physically segregate treatments from each other. All pigs were fed the same two-phase diet regimens: from d 0 to 10 and d 11 to 24, with phase 3 added in exp. 2 from d 25 to 45. In phase 1 (d 0 to 10, Table 2), control and FerAppease pigs had similar ($P > 0.05$) ADG, ADFI, and F/G, as well as BW at d 10. Similar results were observed in phase 2 with no evidence of a difference observed between treatments ($P > 0.05$). For the overall period, when combining phases 1 and 2 (both experiments) and 1, 2 and 3 (only in exp. 2), no differences ($P > 0.05$) between the two treatments were found for ADG, ADFI, F/G, and BW at d 24 and d 45. Salivary cortisol was measured on d 1 post-weaning and again on d 11 (both 24 h after product administration). There was no evidence ($P > 0.10$) of a treatment × day interaction or main effect of treatment. Salivary cortisol was greater ($P < 0.0001$) on d 1 post-weaning compared to d 11 post-weaning. Numerically, on d 1 post-weaning pigs applied with the FerAppease had reduced salivary cortisol concentrations; however, there were no statistically significant differences observed. Fecal samples were collected from two pigs per pen on d 0 and 10, and fecal microbiome analysis did not result in any differences between treatments for alpha or beta diversity, and no meaningful differences were observed in evaluation of class and genus relative abundance data. In summary, the post-weaning application of maternal pheromone to the forehead of nursery pigs post-weaning did not result in any improvements in feed intake, growth rate, feed efficiency, or fecal microbial composition. More information is available on this study and others like it at KSUSwine.org. *(This study conducted by Andrew Boschert, Jamil E. G. Faccin, Jordan T. Gebhardt, Joel M. DeRouchey, Robert D. Goodband, Jason C. Woodworth, Raghavendra G. Amachawadi, Teresa Shippy, and Mike D. Tokach).*

Evaluation of Formaldehyde When Complete Feed and Soybean Meal Were Inoculated with Porcine Epidemic Diarrhea Virus, Porcine Reproductive and Respiratory Syndrome Virus, and Seneca Valley Virus 1- Chemical mitigants have been found to decrease virus concentrations in feed and ingredient matrices. Continued research is needed to identify the appropriate inclusion levels and application time for different viruses in these matrices. Therefore, the objective was to evaluate different inclusion levels of formaldehyde when applied either pre- or post-inoculation of porcine epidemic diarrhea virus (PEDV), porcine reproductive and respiratory syndrome virus (PRRSV) and Seneca Valley virus 1 (SVV1) to complete feed or soybean meal. The experiment was designed in a 2 × 2 factorial with a formaldehyde-based product (Termin-8, Anitox Corp. Lawrenceville, GA) applied either before virus inoculation (pre-inoculation) or after inoculation (post-inoculation) at either a 4 or 6 lb/ton. On d 0, samples of the respective matrices were weighed in 50 g aliquots and added to 500 mL bottles. Chemical mitigants were applied to the pre-inoculation samples at their respective inclusion levels and 50 µL each of 1×10^7 $TCID_{50}$/ mL PEDV, 1×10^8 $TCID_{50}$/mL PRRSV, and 1×10^8 $TCID_{50}$/mL SVV1 were added to the post-inoculation samples. All bottles were shaken and allowed to sit at room temperature for 24 hours. On d 1, virus was added to the pre-inoculation samples and chemical mitigants were added to the post-inoculation bottles. Half of the samples were immediately processed (0 hr) and the other half were incubated at room temperature for an additional 24 hours (24 hr). Samples were processed and aliquots were analyzed via a triplex PCR assay at Kansas State University Veterinary Diagnostic Laboratory. Cycle threshold and proportion PCR positive were analyzed using SAS GLIMMIX v 9.4 (SAS, Inc., Cary, NC) with each virus and matrix combination analyzed individually. An application time × inclusion level interaction was observed for PEDV at 0 hr and SVV1 and PEDV at 24 hr in complete feed, where less viral RNA ($P < 0.05$) was detected in the post-inoculation samples at either inclusion level as compared to the positive controls. In soybean meal, the same interaction was observed in PEDV and PRRSV at 0 hr and SVV1 and PEDV at 24 hr with less detectable RNA observed ($P < 0.05$) in the post-inoculation samples regardless of inclusion level than the pre-inoculation counterparts and the controls. Overall, an application time effect was noticed in each matrix where less RNA was detected in the post-inoculation samples at 0 hr ($P < 0.05$) compared to the pre-inoculation samples and the control, and at 24 hr, both the pre- and post-inoculation samples had less detectable RNA ($P < 0.05$) than the control. Overall, formaldehyde can reduce detectable RNA immediately in both contaminated complete feed and soybean meal, with greater decreases observed as mitigant contact time increases. More information is available on this study and others like it at KSUSwine.org. *(This study conducted by Olivia L. Harrison, Jianfa Bai, Martee Larson, Roman M. Pogranichniy, Francisco Domingues, Nicole Holcombe, Othmar Lopez, and Cassandra K. Jones).*

What's New for Swine Producers

Determining the Productive Energy of Soybean Meal Relative to Corn and Feed-grade Amino Acids- A total of 2,153 finishing pigs (PIC 337 × 1050; initially 63.6 ± 1.03 lb) were used in a 112-d growth study to determine the productive energy of soybean meal (SBM) relative to corn and feed-grade amino acids. Pens of pigs were blocked by initial BW and allotted to one of four dietary treatments in a randomized complete block design. There were 26 or 27 pigs per pen and 20 pens per treatment across two barns. Soybean meal NE value used in diet formulation was 947 kcal/lb (78% NE of corn; NRC, 2012). The four treatments consisted of a diet containing a low level of SBM and added feed-grade amino acids (Low SBM), and three diets with a 3.37 (Med-Low SBM), 6.69 (Med-High SBM), and 10% (High SBM) increase in SBM compared to the Low SBM diet and decreased feed-grade amino acids. The High SBM diet did not contain feed-grade L-lysine. Treatment diets were fed in four phases. Pigs were weighed and feed disappearance was measured every 14 d to determine ADG, ADFI, F/G, and caloric efficiency (CE). From d 0 to 56, increasing SBM decreased (linear, $P < 0.05$) ADG and ADFI, with no effect on F/G. From d 56 to 112, increasing SBM tended (linear, $P < 0.10$) to decrease ADG but there was no effect on ADFI. As a result, F/G worsened (linear, $P = 0.050$) as dietary SBM increased. From d 0 to 112, there was a decrease (linear, $P < 0.05$) in ADG and ADFI as SBM level increased, but there was no effect on F/G. Caloric efficiency improved (linear, $P < 0.05$) as SBM level increased, suggesting a greater NE concentration than initially estimated. Increasing SBM decreased (linear, $P < 0.05$) carcass ADG and worsened (linear, $P < 0.05$) carcass F/G, but there was no effect on carcass CE. Increasing SBM decreased (linear, $P < 0.05$) HCW and carcass yield. Backfat depth and percentage lean were lowest and greatest, respectively, (quadratic, $P < 0.05$) for pigs fed the intermediate SBM levels. There was an increase (linear, $P < 0.05$) in pig removals with increasing SBM but no treatment effect on mortality. However, when combined, removals and mortality were increased (linear, $P < 0.05$) as SBM level increased. The results of this study suggest that when using caloric efficiency, SBM is estimated to contain 93.5% on a liveweight basis or 83.9% on a carcass weight basis of the NE of corn. More information is available on this study and others like it at KSUSwine.org. *(This study conducted by Ty Kim, Ethan B. Stas, Jessica L. Smallfield, Hilario M. Cordoba, Mike D. Tokach, Robert D. Goodband, Joel M. DeRouchey, Jason C. Woodworth, Jordan T. Gebhardt, and Keith D. Haydon).*

Evaluating Water Characteristics and Their Effects on Reducing Water pH Using Citric Acid- A total of 45 water samples from swine production sites across six states were analyzed to determine the effects of water characteristics on reducing water pH with citric acid. Water characteristics analyzed included hardness, pH, calcium (Ca), and magnesium (Mg). Total hardness was calculated as the combined values of Ca and Mg and expressed as mg of $CaCO_3$/L. Water hardness ranged from 142 to 1,181 mg $CaCO_3$/L with an average of 441.2 mg $CaCO_3$/L. Initial sample pH ranged from 7.42 to 8.47 with an average value of 7.91. In triplicate, 10 mL of water from each source was titrated with citric acid to reach a stable pH of 5.0, 4.5, and 4.0 ± 0.05. An inverse relationship between sample hardness and initial pH was observed (quadratic, $P = 0.002$; $R^2 = 0.22$). The amount of citric acid required to reach a sample pH of 4.0 increased (quadratic, $P < 0.001$) as hardness, Ca, and Mg increased ($R^2 = 0.30$, 0.27, 0.28, respectively). Unexpectedly, high initial sample pH was associated with a reduction (quadratic, $P < 0.001$; $R^2 = 0.31$) in the amount of citric acid required to reach a pH of 4.0. In conclusion, water hardness, Ca, Mg, and initial pH cannot fully predict the amount of citric acid required to reach a stable sample pH of 4.0. However, relationships were observed that can partially explain the variation in the amount of acid required. Although these relationships cannot fully determine the amount of acid required to reach the target pH, titrating to a target pH of 5.0 can predict the amount of acid required to reach a pH of 4.0 (linear, $P < 0.001$; $R^2 = 0.99$). This data suggests that acid titrations of each water source should be completed to determine the amount of acid required to reach a final water pH of 4.0. More information is available on this study and others like it at KSUSwine.org. *(This study conducted by Maxwell L. Corso, Jason C. Woodworth, Mike D. Tokach, Jordan T. Gebhardt, Joel M. DeRouchey, and Robert D. Goodband).*

Effects of Valopro Win Feeding Duration in Different Nursery Diet Types on Nursery Pig Growth Performance and Fecal Dry Matter- A total of 300 pigs (DNA, Line 241 × 600; initially 12.3 ± 1.04 lb), were used to evaluate the effects of Valopro Win (VLPW) feeding duration on pig performance and fecal dry matter. Valopro Win contains a purified source of coarse indigestible fiber, oat hulls, and yeast autolysate. At weaning, pigs were blocked by body weight (BW) and then randomly assigned to pens and allotted to one of six dietary treatments in a 2 × 3 factorial arrangement, with main effects of formulation strategy (low ABC-4 without ZnO or high ABC-4 with ZnO) and VLPW feeding duration (0, 10, or 24 d). There were five pigs per pen and 10 pens per treatment. Experimental diets were formulated in two dietary phases from d 0 to 10 and d 10 to 24, with a common post-treatment diet fed from d 24 to 42. Low ABC-4 diets were formulated to 200 and 250 meq/kg from d 0 to 10 and d 10 to 24, respectively. High ABC-4 diets were formulated to 493 and 470 meq/kg and contained 2,990 and 1,910 ppm of Zn from ZnO from d 0 to 10 and d 10 to 24, respectively. Diets containing VLPW were formulated by replacing 2.5% of the diet with VLPW without making any nutritional adjustments. No interactions were observed ($P > 0.10$) between VLPW feeding duration and formulation strategy on any response criteria. There was no significant effect ($P > 0.10$) of VLPW feeding duration on growth performance; however, on d 10, pigs fed VLPW diets had increased fecal dry matter ($P = 0.019$). During the experimental period (d 0 to 24), pigs fed low ABC-4 diets with no ZnO had decreased ($P < 0.001$) ADG, d 24 BW, and lower ADFI compared with pigs fed high ABC-4 with ZnO, but no significant differences ($P > 0.10$) were observed in the overall period (d 0 to 42). On d 24, pigs fed low ABC-4 without ZnO diets had greater ($P < 0.001$) fecal dry matter than those fed high ABC-4 with ZnO. In conclusion, even though pigs fed high ABC-4 diets containing ZnO had improved growth during the experimental feeding period, neither the use of VLPW nor the formulation strategies significantly affected overall nursery performance. However, fecal dry matter was increased on d 10 when pigs were fed VLPW and at d 24 when pigs were fed low ABC-4 diets without ZnO. More information is available on this study and others like it at KSUSwine.org. *(This study conducted by Julian Arroyave, Mike D. Tokach, Jason C. Woodworth, Joel M. DeRouchey, Robert D. Goodband, Katelyn N. Gaffield, and Jordan T. Gebhardt).*

ASI Faculty Highlight

Ashley Hartman (arhartma@ksu.edu or 785-532-1272)
Animal Health Instructor

Dr. Ashley Hartman serves as the animal health instructor in the Kansas State University Department of Animal Sciences and Industry, where her appointment is 100% teaching. A passionate educator and K-State alumna, Hartman is dedicated to connecting research and real-world application in the classroom to prepare students for success across the animal health industry.

Before joining the ASI faculty, Hartman worked as research coordinator for Pillen Family Farms and DNA Genetics in Columbus, Nebraska, overseeing research activities across the organization.

Hartman earned her Ph.D. in animal science from Kansas State University, where her research focused on male livestock fertility. She also completed her M.S. in animal science at K-State, studying reproductive physiology and environmental influences on beef bull semen characteristics. Hartman began her academic career at Northwest Community College before earning her B.S. in animal science with an emphasis in production management from K-State.

Hartman's teaching philosophy centers on helping students explore the broad scope of animal health—highlighting opportunities in areas such as biosecurity, feedlot health management, and biomedical research—while supporting those pursuing careers in veterinary medicine.

Jason Woodworth (jwoodworth@ksu.edu or 785-532-1157)
Research Professor

Dr. Jason Woodworth was raised in Sterling, Kansas on a diversified crop farm. In 1997 Jason completed his B.S Animal Science degree at KSU and during his undergraduate career he worked and lived at the KSU Swine Unit. Jason went on to complete his swine nutrition M.S. and Ph. D. degrees at KSU with his research emphasis related to the vitamin and mineral requirements of nursery pigs and sows.

After completing his degrees, Jason joined Lonza Inc. which was the same company that funded his Ph.D. In his 11+ year tenure at Lonza, Jason's responsibilities transitioned from being the NAFTA Technical Sales & Service Manager, to the NAFTA Business Manager, and finally to the Global Product Manager for some of Lonza's specialty feed ingredients. In this capacity, Jason was responsible for the global research & development initiatives of Lonza's animal nutrition portfolio for all production and companion animal species. Furthermore, he had the global profit/loss responsibility for Lonza's L-Carnitine-based portfolio and spent about 50% of his time traveling internationally to develop the global business.

In June of 2013, Jason re-joined the Applied Swine Nutrition team at KSU and is currently a Research Professor. In this role, Jason contributes to the research objectives of the team and helps with graduate student mentorship and development. Jason serves as the faculty manager of the KSU Swine Teaching and Research Center, KSU early-weaned pig facility, and is the ASI Liasson to the OH Kruse feed mill. During his tenure at KSU, Jason has been the PI on 108 grants that have generated more than $4.8 million in funding and co-PI on 222 other grants that have generated an additional $13.5 million in funding as well as helped generate over $2 million in gifts to the program. This has resulted in 307 peer-reviewed journal articles in support of the 78 MS or PhD degrees that Jason has helped support as a major professor or committee member.

Jason lives on a purebred Angus farm in Enterprise, KS, with his wife, Brooke. They have 2 sons, Jensen who is a Junior at KSU studying Ag Tech Management and also an employee at the Beef Stocker Unit, and Carson, who is a Sophomore at Wichita State University studying Aerospace Engineering.

We need your input! If you have any suggestions or comments on
News from KSU Animal Sciences,
please let us know by email to katiesmith@ksu.edu