



K News from KSU Animal Sciences

- **KJLS Entry Deadline Approaching-** The deadline to enter the Kansas Junior Livestock Show is August 15. All entries must be made online, using the link on the KJLS website: <https://www.kjls.net/>. Rules, the schedule, and additional details are also posted on their website. Everyone is encouraged to double check the rules prior to entry and arrival to make the check-in process goes as smoothly as possible. Families who state nominated have to use the same account they did during the nomination process for nominated animals to be available for entry. It is important to remember that a complete nomination does not constitute show entry. Nomination only makes animals eligible to be entered and shown at KJLS. Exhibitors must submit an official entry, through the unique [KJLS entry link](#) posted above, as well as pay the appropriate fees to be able to participate.
Exhibitors will enter showmanship during the entry process, as well as sign up for the [LEAD Challenge](#) if they are interested. [Scholarship applications](#) are also due August 15.
Agents and FFA advisors will receive instructions regarding approving entries for youth from their respective organizations after entries close. This will all be done online, similar to last year. For information about entries or the show, please contact the [KJLS staff](#) directly.
- **Livestock Sweepstakes-** Livestock Sweepstakes is approaching on August 19-20. The entry deadline has passed, but those who entered youth will be receiving additional details and reminders as the event approaches. The livestock judging contest, livestock skillathon, and quiz bowl qualifying exam will be on Saturday, with the meat judging contest, head-to-head quiz bowl rounds, and awards ceremony being on Sunday. Through these events, the youth who will represent Kansas at the national contests will be selected. We look forward to having Kansas 4-H youth on campus to kick off the school year! For more information, please contact Lexie Hayes (adhayes@ksu.edu or 785-532-1264.)
- **Livestock Projects Sold Through County Fair Premium Auctions-** As county fair season comes to a close, this is a reminder that livestock animals sold through a county fair premium sale OR ribbon auction are not eligible to be shown at the Kansas State Fair or the Kansas Junior Livestock Show. This is per the [Kansas 4-H Policy](#), section 10.6. So, please refer to the policy guide on the state 4-H website for further details about the policy. As counties complete their fairs, extension offices need to submit a list of the STATE NOMINATED animals that participated in the premium auction. We only need the state nominated animals, not the entire sale bill/ribbon auction list. Please email the official KSU nomination family name, specie, and tag #s. A list of animals nominated from each county may be found on the state livestock nomination reports posted on the KSU Youth Livestock Program website, under [Nominated Livestock Reports](#). This list includes official KSU nomination family names and tag numbers. All lists need to be submitted by September 1. For more information, contact Lexie Hayes (adhayes@ksu.edu or 785-532-1264.)
- **State Livestock Show Schedules & Information-** As the Kansas State Fair Grand Drive and KJLS approach, it is important that families familiarize themselves with the rules and be prepared for check-in in order for the process to go smoothly. Schedules and rules are posted on each show's respective website. The barns open on Thursday, September 7 for the [Grand Drive](#), with check-in happening on Friday morning, showmanship on Friday afternoon, market shows on Saturday, and breeding animals showing on Sunday. Exhibitors will pick up their packets in the show office, located in the sheep and swine barn office complex, upon arrival. Each packet contains each child's check-in cards, as well as other items purchased during show entry, including wristbands, Gala tickets, etc. Exhibitors who need to [substitute](#) one nominated animal for another may do so in advance through the link posted on the [Grand Drive Facebook page](#). This will expedite the check-in process. All families are also encouraged to follow the Grand Drive and KJLS social media platforms as the shows approach. Both share lots of information and reminders leading up to the shows, including stalling maps.
Check the [KJLS website](#) for the schedule and details. The barns open on Friday, September 29. Check-in, showmanship, breeding, and market shows happen throughout the weekend, by specie. The weekend begins with sheep and meat goats, wrapping up with swine and beef on Sunday. Families need to refer to the schedule before arrival for details. The LEAD Challenge will happen throughout the weekend, with awards presented on Sunday. Exhibitors will pick up their packets, which contain their t-shirt, check-in cards, and other materials, by the end of the day Friday in the sheep and swine barn. Follow the [KJLS Facebook Page](#) for announcements and details as the show approaches.

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August 2023



UPCOMING EVENTS...

↵ **KLA/KSU Ranch Management Field Days Planned for August-** Kansas State University and the Kansas Livestock Association have planned two field days to help cow-calf producers enhance their management strategies. KLA/K-State second Ranch Management Field Day is set for Aug. 17 hosted by Carpenter Cattle Company of Brewster, KS. Managing weeds after drought and a market outlook will be part of the program at the western location. The event is free to attend and will include a free beef dinner. More details on both programs will be available soon at KSUBeef.org or KLA.org.

↵ **Kansas Ag Growth Summit-** The Kansas Department of Agriculture will host the eighth annual Kansas Governor's Summit on Agricultural Growth on Thursday, August 17, 2023, at the Manhattan Conference Center, 410 S. 3rd Street in Manhattan, KS. The Summit involves Kansas farmers, ranchers, and agribusinesses working together in a collaborative setting to discuss growing the agriculture industry in Kansas. We welcome producers, business owners, ag educators, community leaders, and representatives of ag organizations from across the state to join us to talk about how we can work together to expand opportunities for Kansas agriculture. The annual Ag Growth Social will be the evening of August 16. Both the Social and the Summit are FREE, but pre-registration is requested. For more information visit <https://agriculture.ks.gov/aggrowthstrategy/ag-summit-2023>.

↵ **KSU Beef Stocker Field Day to be hosted September 28, 2023-** Come and help us celebrate the 24th KSU Beef Stocker Field day which will be hosted Thursday, September 28, 2023 at the KSU Beef Stocker Unit in Manhattan. The day will start at 9:30 a.m. with registration/coffee and concludes with a good old-fashioned Prairie Oyster Fry and Call Hall ice cream at 5:30 p.m. The schedule is as follows:

9:30 a.m.	Registration/Coffee
10:15 a.m.	Introductions
10:30 a.m.	Dr. Glynn Tonsor – K-State Beef Cattle Outlook
11:15 a.m.	Producer Panel – Labor: Recruiting and Retention <ul style="list-style-type: none">• J.D. Powell – Sandhills Hay Co. Ltd• Dr. Karol Fike – K-State• Chad Cargill – Cargill Ranch• Keith Bryant – Cobalt Cattle Company Moderator: Wes Ishmael – <i>Hereford World</i> , Executive Editor
12:15 p.m.	Barbeque Brisket Lunch – View posters
1:15 p.m.	Dr. Lee-Anne Walter and Dr. Tim Parks, Merck Animal Health- Latest research into the top pharmaceutical technologies yielding the highest economic return in stocker cattle
2:15 p.m.	Dr. Logan Thompson – K-State Accounting for the environmental impact of grazing cattle: appreciating our ecological niche
3:00 p.m.	Break
3:30 p.m.	Alfredo DiCostanzo – University of Nebraska- Fine-tuning bunk calls in the grow yard
4:15 p.m.	Zach Smith – South Dakota State University Appropriate use of steroidal implants during the backgrounding and stocker phase: impacts on growth performance and carcass outcomes upon harvest
5:30 p.m.	Cutting Bull's Lament- Old fashioned Prairie Oyster Fry and Call Hall ice cream.

Pre-registration is \$25 and due by September 14. For complete details and registration, visit asi.ksu.edu/stockerfieldday. For more information contact Dr. Dale Blasi (dblasi@ksu.edu or 785-532-5427) or Katie Smith (katiesmith@ksu.edu or 785-532-1267.)

↵ **Implementing Your Company's HACCP Plan** will be hosted September 27-29, 2023, in Olathe, KS. This workshop uses curriculum recognized by the International HACCP Alliance for meat and poultry processors. The registration fee is \$450 per person and is available online at <http://bit.ly/HACCPCourse>. For more information, contact Dr. Liz Boyle (lboyle@ksu.edu or 785-532-1247.)

↵ **Registration is now open for the 2023 ASI Family and Friends Reunion.** This year's date is Saturday, October 7 at the Stanley Stout Center. Dr. Larry Corah will be presented with the Don L. Good Impact Award. Make plans now to attend. Visit asi.ksu.edu/familyandfriends for more information.

CALENDAR OF UPCOMING EVENTS

Date	Event	Location
August 17, 2023	KLA/K-State Ranch Management Field Day	Carpenter Cattle Co.
August 17, 2023	Kansas Ag Growth Summit	Manhattan
August 19-20, 2023	Livestock Sweepstakes	Manhattan
September 27-29, 2023	HACCP Workshop	Olathe, KS
September 28, 2023	K-State Beef Stocker Field Day	Manhattan
October 7, 2023	K-State ASI Family & Friends Reunion	Manhattan
November 16, 2023	K-State Swine Day	Manhattan

Jobs Available- Now Hiring

- ↵ **Dairy Teaching and Research Center Manager (Job #515771)** – This is a full-time, unclassified professional staff, Term Contract. The DTRC Manager is responsible for the day-to-day management of personnel, animals, and unit facilities at the DTRC. The incumbent will also work closely with faculty and students to facilitate research trials at the DTRC. Animal care – The DTRC Manager oversees the routine care (feeding, milking, reproductive management, herd health, waste management, etc.) of the mature cows and young stock. The incumbent will work with herd veterinarians and faculty supervisors to establish, execute, and evaluate standard operating protocols for maintaining optimum animal care, herd production, and research study outcomes. Operational management – The DTRC Manager will oversee and conduct routine daily operational management of the facility. Supervision – The DTRC Manager will lead a talented team of employees to ensure adequate care of livestock and daily operations of the DTRC. To read more details and to apply, go to <https://careers.k-state.edu/cw/en-us/job/515771/dairy-teaching-and-research-center-manager>

- ↵ **Animal Technician Supervisor—Dairy Teaching and Research Center (Job # 515576)** -This is a full-time, unclassified professional staff, term contract position. This position is critical to the overall operation of the KSU Dairy Teaching and Research Center. It involves supervision of other employees and the care and comfort of the animals housed at the DTRC at Kansas State University. Incumbent functions as the assistant manager of the Dairy Teaching and Research Center and is responsible for ensuring the safety of the cows and other dairy unit employees. Assumes responsibility for operation of the dairy unit in the manager's absence. Incumbent is responsible for milking cows at least two days each week and for making vital animal observations during the milking process. Incumbent is responsible for collecting sterile samples of milk to be tested for antibiotics or bacteria. To apply, go to <https://careers.k-state.edu/cw/en-us/job/515576/animal-technician-supervisor>.

- ↵ **Animal Technician I- Swine Unit (Job #515792)**— This is a full-time, University Support Staff (USS.) This position provides essential workload and responsibility for the KSU swine unit associated with animal care, health, and well-being as well as supporting research efforts. Review of applications begins: Immediately and continues until position is filled. For more information, contact Dr. Jason Woodworth at 785-532-1157 or jwoodworth@ksu.edu; Mark Nelson at 785-539-9351 or mnelson@ksu.edu. To apply, go to <https://careers.k-state.edu/cw/en-us/job/515771/dairy-teaching-and-research-center-manager>

- ↵ **Animal Technician II - Dairy Unit- 2 Positions Available(Job # 512403 & #510744)**- This is a full-time, University Support Staff (USS) position. This position exists to operate and maintain the feed mill facility and feed the milk herd at the Dairy Teaching and Research Center. Review of applicants begins immediately and continues until the position is filled. For more information, contact Mike Brouk, Search Committee Chair (mbrouk@ksu.edu or 785-532-1207.) To apply, go to <https://careers.pageuppeople.com/742/cw/en-us/job/512403/animal-technician-ii>

- ↵ **Animal Technician II – Dairy Unit (Job # 513849)** – This is a part-time, University Support Staff (USS) position. This position exists to milk, feed, and provide care of Dairy Teaching and Research Center (DTRC) dairy herd, which is used for teaching and research purposes. This is an **AS NEEDED** position. The incumbent could be called to fill in for Emergency situations, 24 hours a day 7 days a week. Review of applications begins immediately and continues until the position is filled. For more information, contact Mike Brouk, Search Committee Chair (mbrouk@ksu.edu or 785-532-1207.) To apply, go to <https://careers.k-state.edu/cw/en-us/job/513849/animal-technician-ii>.

What's New for Beef Cattle Producers

Management Minute- Justin Waggoner, Ph.D., Beef Systems Specialist

“Active Listening”

Communication is essential in the workplace, but it's not just about speaking. Listening is an important aspect of communication that is often overlooked and listening is more than just hearing what is being said. The process of active listening means that you are fully engaged in the speaker, not only listening to what is being said, but acknowledging the non-verbal cues and providing the speaker with feedback. So how can you become a better listener? Pay attention to the speaker, give them your undivided attention and try not to focus on what you are going to say while they are speaking. Don't judge, enter and leave the conversation with an open mind. Ask questions; asking open-ended or clarifying questions is a great way to engage the speaker. Don't be afraid to take a few seconds and reflect on what has been said before responding to the speaker. It also important to summarize the key points or central issues addressed by the speaker. Most importantly be genuine. Becoming a better listener and practicing active listening isn't easy. There are a number of great resources available online just enter the terms “active” “listening” in your search engine of choice.

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

Feedlot Facts- Justin Waggoner, Ph.D., Beef Systems Specialist

“Silage Harvest; Now is the time to have a conversation about SAFETY.”

Silage harvest is underway. Cutters and choppers in the fields, trucks racing from the field to the pile or bunker, multiple tractors pushing and packing silage. The speed of silage operations today is impressive, but we should never allow speed to compromise safety. In the infamous words of Dr. Keith Bolsen “Every silage accident could have been prevented.” Now is the time to remind everyone, not just those directly involved with silage harvest on our operations about safety. Below are a few things to consider during this year's silage harvest.

- *Don't become complacent.* Stay aware of the surroundings. There are numerous highly repetitive operations in putting up silage and in agriculture in general. One of the number one factors that leads up to an accident is almost always complacency or a lack of situational awareness. Equipment operators should avoid distractions and should be allowed to take routine breaks to reduce operator fatigue.
- *Truck drivers should always slow down when approaching houses and intersections, every time.* Those houses along the road belong to our neighbors and friends, some of which have children. The increased traffic on gravel roads creates dust, and the crops are tall, both of which reduce visibility at intersections. Our neighbors should not fear going to their mail box due to our silage trucks.
- *People (especially children) should never be allowed near a drive over pile or bunker silo during filling.* If people have to approach the area, get on the radio inform the drivers/operators. Those on the ground in the area should always wear bright colored orange safety vests or clothing and should always make direct eye contact with equipment operators before approaching the area.
- *Never inspect or make repairs to equipment near the bunker or pile.* Equipment should be removed from the area as soon as possible. Repairs almost always involve people on foot and people who may not be familiar with silage activities and the associated risks.
- *Never fill higher than the top of the bunker wall.* This happens more than it should and creates a dangerous situation from the day the silage is packed until it is removed. The pack tractor cannot see the edge of the bunker well if at all. The silage does not get packed well (which leads to poor silage) and the edge of the silage is unstable and more likely to collapse. *Don't do it!*
- *Be aware of steep slopes,* to reduce the risk of tractor roll-over a minimum slope of 1 in 3 on the sides and end of piles should be maintained.

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

KSU Cow-Calf Checklist – August 2023

Management considerations for October 2023

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

Cow herd Management

- For spring-calving cow herds:
 - If not already done, make plans for weaning calves.
 - Test your forages and have feedstuffs on hand prior to weaning.
 - Check and clean waterers and prepare weaning/receiving pens.
 - Evaluate cow BCS at weaning.
 - Record scores with the BCS Record Book from KSRE!
 - Use BCS to strategically supplement cows during fall, if needed.
 - Female requirements are lowest at weaning so weight and BCS can be added more easily in early fall rather than waiting until closer to calving.
 - Schedule pregnancy checking and fall health work if not already done.
 - How were pregnancy rates relative to last year?
 - Do we need to re-think our fall/winter nutrition program?
 - Evaluate the cost of gain relative to the value of gain when making feeding and marketing decisions for cull cows.
- For fall-calving cow herds:
 - If not already done, review your calving health protocols as needed.
 - Have calving equipment cleaned and available to use as needed.
 - Plan to adjust your nutrition program to match needs of lactating cows.
 - Use the estrus synchronization planner (<https://www.iowabeefcenter.org/estrussynch.html>) to help plan fall synchronization protocols.
- Plan your mineral supplementation for this coming fall and winter.
 - Record date and amount offered and calculate herd consumption.
 - If consumption is 2X the target intake, then cost will be too!
 - Risk of grass tetany is greatest for lactating cows. Consider magnesium levels in mineral supplements for cows grazing cool-season forages and winter annuals this fall.
- Schedule breeding soundness exams for bulls used for fall service.
 - Monitor BCS, particularly on young bulls.
 - If bulls are BCS \leq 5.0 after summer breeding, consider supplementing to regain BCS going into fall.

Calf Management

- Schedule any pre-weaning vaccination or processing activities if not already done.
- Consider the economic value by implanting nursing fall-born calves and weaned spring-born calves.
- If not already done, schedule your breeding protocols for fall replacement heifers in advance of the breeding season.
 - If synchronizing with MGA, make sure intake is consistent at 0.5 mg of melengestrol acetate per hd per day for 14 days, and remove for 19 days prior to administering prostaglandin.

General Management

- Take inventory of and begin sampling harvested forages for fall feed needs.
 - Be aware of possible presence of molds and other anti-nutritional compounds in hay harvested at higher than typical moisture levels.
 - Test for nitrates and prussic acid when appropriate.
 - Use the forage inventory calculator (<https://www.agmanager.info/hay-inventory-calculator>).
 - Balance forage inventories with fall/winter grazing acres.
- If grazing crop residues following harvest, keep the following in mind:
 - The bottom 1/3 of the stalk is where nitrates accumulate.
 - Be aware of prussic acid in new regrowth of sorghum plants, and the time around frost is the greatest risk.
 - High amounts of down grain will require a change in management.
- Use the Management Minder tool on *KSUBeef.org* to plan key management activities for your cow herd for the rest of the year.
- With high feeder calf prices, consider price risk management tools.

What's New for Beef Cattle Producers

- **Delayed Timing of Insemination Relative to Estrus Improves Pregnancy to Artificial Insemination With Sex-Sorted Semen in Beef Heifers-** The objective was to evaluate the effect of timing of artificial insemination (AI) relative to the onset of estrus on pregnancy outcome when using sex-sorted semen in beef heifers. Beef heifers were subjected to the melengestrol acetate with prostaglandin (MGA-PG) estrous synchronization protocol and visually observed for estrus every four hours for five days following injection of PG. Following detection of estrus, heifers were inseminated with semen sorted to contain X-chromosome bearing sperm cells (4.0×10^6 live cells per 0.25 mL straw of SexedULTRA 4M). Heifers were retrospectively categorized into one of three intervals from estrus onset to insemination: 1) 12.5–15.9 hours; 2) 16.5–21.0 hours; and 3) 21.4–27.5 hours.
- Results:** Heifers with the shortest interval (12.5–15.9 hours) from estrus onset to insemination had a similar ($P > 0.10$) AI pregnancy rate as compared with heifers with the interval from estrus onset to insemination of 16.5 to 21 hours. Heifers inseminated 21.4 to 27.5 hours following estrus onset achieved a greater ($P \leq 0.05$) AI pregnancy rate than heifers inseminated 12.5 to 15.9 hours following estrus onset.
- The Bottom Line:** Insemination of beef heifers with sex-sorted semen later than 21 hours after estrus onset appears to improve pregnancy rate to AI when compared to earlier insemination times. More information is available on this experiment and others in the KSU Cattlemen's Day report at KSUbeef.org. For more information, contact Karol Fike (785-532-1104 or karol@ksu.edu) or Sandy Johnson (785-462-6281 or sandyj@ksu.edu.)
- **Effects of Adding Egg Powder from Hens Immunized Against Phospholipase $\alpha 2$ on Ground Striploin Shelf Life-** The present study investigated the effect of incorporating three different levels of dried egg powder (EP) containing antiphospholipase $\alpha 2$ (aPLA2) on lipid oxidation and discoloration for its potential to extend ground striploin shelf life. U.S. Department of Agriculture choice striploins from ten beef carcasses were used. Impacts on beef discoloration, L* (lightness), a* (redness), and b* (yellowness) parameters, and lipid oxidation over a 7-day display period were studied. The fatty acid and phospholipid profiles of the beef patties were also examined.
- Results:** The EP was confirmed to contain active aPLA2. As expected, a* and b* values decreased ($P < 0.05$), and visual discoloration increased ($P < 0.05$) throughout the 7 days of retail display. However, the inclusion of EP had no effect on beef patty visual discoloration, a*, or b* ($P > 0.05$). Lipid oxidation increased ($P < 0.05$) for all treatments throughout the 7-day display period. Beef patties containing 1.6% EP had higher ($P < 0.05$) lipid oxidation than the rest of the treatments. The addition of 1.6% EP to ground striploin increased the relative percentage of C11-18:1 trans, C18:2, C18:3, C20:1, and C22:6 fatty acids, but decreased the relative percentage of C17:0, and C17:1 when compared to the other treatments ($P < 0.05$). Adding more than 0.8% EP containing aPLA2 in ground striploin altered the fatty acid profile by increasing the content of some polyunsaturated fatty acids, particularly 18:2, which likely led to the enhanced lipid oxidation in ground striploin patties. Finally, the phosphatidylcholine relative percentage was higher for the 1.6% EP treatment compared to the control, possibly due to the inhibition of PLA2 by aPLA2 activity.
- The Bottom Line:** These results showed that egg powder containing aPLA2 did not have any effect in extending beef shelf life when incorporated into ground striploin. Further research could introduce aPLA2 through a different vehicle to reduce interference of fatty acid composition. More information is available on this experiment and others in the KSU Cattlemen's Day report at KSUbeef.org. For more information, contact Michael D. Chao (785-532-1230 or mdchao@ksu.edu) or Liz Boyle (785-532-1247 or lboyle@ksu.edu.)
- **Establishing Spoilage Thresholds of Ground Beef in a Traditional Retail Case Scenario-** The objective of this study was to determine spoilage in fresh ground beef and the perception of consumers regarding alteration of sensory characteristics, as well as the acceptability at different days of shelf-life. Ground beef loaves ($n = 84$) of 80% lean, 20% fat composition and aerobically packaged were stored in a simulated refrigerated retail case for 6 days. Consumers evaluated visual color, odor, touch, and taste. Instrumental color, lipid oxidation, aerobic plate count, and *Enterobacteriaceae* count were determined.
- The Bottom Line:** In this study, color was shown to be the important product characteristic of spoilage to consumers' satisfaction. Overall, based on this research, ground beef can be displayed for 3 days without being perceived as spoiled by consumers. More information is available on this experiment and others in the KSU Cattlemen's Day report at KSUbeef.org. For more information, contact Jessie Vipham (785-532-3486 or jessiev@ksu.edu) or Liz Boyle (785-532-1247 or lboyle@ksu.edu.)

What's New for Swine Producers

↪ **Effects of Bovine Plasma and Pharmacological Zinc Level on Nursery Pig Growth Performance and Fecal**

Characteristics- A total of 300 pigs (241 × 600, DNA; initially 12.9 lb) were used in a 38-d trial to evaluate the effect of Zn level and bovine plasma in nursery pig diets. At the time of placement, pens of pigs were weighed and allotted to 1 of 4 dietary treatments in a randomized complete block design with barn as the blocking factor. There was a total of 60 pens with 5 pigs per pen and 15 replicates per dietary treatment. The treatments were arranged in a 2 × 2 factorial with main effects of Zn level (high and low) and spray-dried bovine plasma inclusion (with or without; APC Inc., Ankeny, IA). Diets with pharmacological levels of Zn had 3,000 and 2,000 ppm of Zn in phase 1 and 2 diets, respectively. Diets with low level of Zn had 110 ppm of Zn in phase 1 and 2 diets. Bovine plasma replaced a portion of a fermented vegetable protein source (MEpro, Prairie Aquatech, Brookings, SD) in diet formulation with bovine plasma included at 5% and 2% in the phase 1 and 2 diets, respectively. Treatment diets were fed in 2 phases (phase 1: d 0 to 9; phase 2: d 9 to 24) with a common diet (110 ppm of Zn without plasma) fed from d 24 to 38. Fecal samples and scores were collected on d 9 and 24 for determination of fecal dry matter. There was no evidence of Zn × plasma interactions ($P > 0.10$) throughout the trial for any growth criteria. From d 0 to 9, pigs fed bovine plasma tended to have improved ADG ($P = 0.066$) and had improved ($P \leq 0.035$) ADFI and BW, while pigs fed high Zn had improved ($P \leq 0.018$) ADG, BW and F/G. From d 9 to 24, pig fed high Zn had improved ($P < 0.001$) ADG and ADFI. During the common period (d 24 to 38), pigs previously fed high Zn had reduced ADFI ($P = 0.046$). Overall (d 0 to 38), pigs fed high Zn had improved ($P \leq 0.029$) BW, ADG, and F/G. For fecal DM, there was a tendency of plasma × Zn interaction ($P = 0.067$) where pigs fed high Zn had increased ($P < 0.05$) fecal DM compared to pigs fed low Zn when bovine plasma was added, while this Zn effect was not significant ($P > 0.05$) when fed in diets without plasma. For fecal score, pigs fed high Zn had higher ($P < 0.001$) frequency of firmer feces. In summary, bovine plasma improved growth performance during the first week after weaning. Feeding pharmacological levels of Zn improved growth performance when fed and overall, as well as improved fecal DM and fecal firmness measured by observational scoring. More information is available on this experiment and others in the KSU Swine Day report at KSUSwine.org. (This study conducted by Zhong-Xing Rao, Mike D. Tokach, Jason C. Woodworth, Joel M. DeRouchey, Robert D. Goodband, Joy M. Campbell and Jordan T. Gebhardt.)

↪ **Effects of Folic Acid and Zinc Oxide on Nursery Pig Growth Performance-** A total of 360 barrows (DNA 600 × 241; initially 12.1 ± 0.07 lb) were used in a 38-d growth study to evaluate the effects of including folic acid (Rovimix Folic Acid, DSM, Parsippany, NJ) with or without pharmacological levels of Zn provided by zinc oxide (ZnO) on growth performance and fecal characteristics in nursery pigs. Pigs were weaned at approximately 19 d of age and randomly allotted to 1 of 6 dietary treatments. A total of 72 pens were used with 5 pigs per pen and 12 replications per treatment. Dietary treatments were arranged in a 3 × 2 factorial with main effects of folic acid (0, 20, or 40 ppm) and ZnO (3,000 ppm of Zn in phase 1, 2,000 ppm in phase 2, or no Zn other than 110 ppm from the trace mineral premix). Diets were corn-soybean meal-based and fed in 2 phases. A common phase 3 diet was fed to all pigs. For the experimental period (d 0 to 24), pigs fed diets with pharmacological levels of Zn had improved ($P \leq 0.030$) d 24 BW, ADG, and ADFI. There was a quadratic ($P < 0.05$) response for d 24 BW, ADG, and ADFI when pigs were fed folic acid with pigs fed 0 or 40 ppm having improved performance compared with pigs fed 20 ppm. For the common period (d 24 to 38), pigs previously fed pharmacological levels of Zn had poorer ($P = 0.028$) feed efficiency compared to pigs previously fed diets without pharmacological Zn. Additionally, a quadratic ($P = 0.008$) response was observed in ADG and ADFI when pigs were previously fed folic acid with pigs fed 0 or 40 ppm having improved performance compared with pigs fed 20 ppm. Overall (d 0 to 38), there was a quadratic ($P < 0.05$) response in final BW, ADG, and ADFI when pigs were fed folic acid, with pigs fed 0 or 40 ppm having improved performance compared to pigs fed 20 ppm. However, no overall differences ($P > 0.10$) were observed when pigs were fed diets with or without pharmacological levels of Zn in phase 1 and 2 diets. Additionally, no statistical differences ($P > 0.10$) in mortality were observed when pigs were fed diets with or without pharmacological levels of Zn although pigs fed no folic acid had numerically the lowest mortality. In conclusion, the addition of folic acid did not improve nursery pig performance with a negative response observed at 20 ppm, regardless of Zn inclusion in the diet. More information is available on this experiment and others in the KSU Swine Day report at KSUSwine.org. (This study conducted by Larissa L. Becker, Mike D. Tokach, Jason C. Woodworth, Robert D. Goodband, Joel M. DeRouchey, and Jordan T. Gebhardt.)

↪ **Inoculation of Weaned Pigs by Feed, Water, and Airborne Transmission of Salmonella enterica Serotype 4,[5],12:i:-** *Salmonella enterica* serotype 4,[5],12:i:- (STM) has become an increasing problem for food safety and has been often detected in pork products. For this study, weanling pigs were exposed to STM-contaminated feed, water, or air to determine possible STM transmission routes. An uninoculated control group of pigs was included. The STM was monitored daily in feces and rectal and nasal swabs. The STM colonization was most prevalent in tissues from tonsil, lower intestine, and mesenteric lymph nodes. No differences in lesion severity were observed between inoculated and control pigs. Contaminated feed, water, and aerosolized particles caused infection in weaned pigs; however, no STM colonization was observed in skeletal muscle destined for human consumption. Based on the results from this study, STM contamination in pork products most likely results from cross-contamination of meat by digesta or lymph node tissue during processing. More information is available on this experiment and others in the KSU Swine Day report at KSUSwine.org. (This study conducted by Olivia L. Harrison, Jordan T. Gebhardt, Chad B. Paulk, Brandon L. Plattner, Jason C. Woodworth, Susan Rensing, Cassandra K. Jones and Valentina Trinetta.)

ASI FACULTY SPOTLIGHT...



Payton Dahmer (dahmerp@ksu.edu or 417-448-4934)
Instructor & Livestock Judging Coach

Dr. Payton Dahmer grew up on a small farm in Nevada, Missouri, where his family raised and exhibited all species of livestock across the country. He received his associates degree from Butler Community College in 2017. During his time at Butler, he was member of the 2017 Livestock Judging Team that won multiple national contests and was named "Team of the Year." He then transferred to K-State to complete his B.S. in animal science, and he was a member of the 2018 Reserve National Champion Livestock Judging Team and the 2018 National Champion Meat Animal Evaluation Team. He received honors of being a member of the 2017 All-American Junior College

Team and the 2018 All-American Senior College Team and was recipient of the prestigious F.W. Bell Award.

Payton stayed at K-State and completed his M.S. and Ph.D. in nutrition while serving as the assistant coach for the livestock judging teams that were named 2019 Reserve National Champions and the National Champions in 2020. Throughout his Ph.D. program, he also managed the K-State Sheep and Meat Goat Center and taught ASI 524 (Sheep and Goat Science) as well as helping teach the swine section of the ASI Undergraduate Research Program.

Dahmer has extensive background in teaching and research spanning across species. He enjoys judging youth livestock shows and working with exhibitors and breeders across the country.



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 K-State and during his undergraduate career he worked and lived at the K-State Swine Unit. Jason went on to complete his swine nutrition M.S. and Ph. D. degrees at K-State with his research emphasis related to the vitamin and mineral requirements of nursery pigs and sows.

After completing his degrees, Jason joined Lonza 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 K-State 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, K-State early-weaned pig facility, Swine Lab and ASI Analytical Lab. During his tenure at K-State, Jason has been the PI on 69 grants that have generated more than \$3 million in funding and resulted in 144 peer-reviewed journal publications.

Jason lives in Enterprise, KS, with his wife, Brooke, and two sons, Jensen and Carson, where they spend their time at youth sporting and music events, 4-H activities, and on their Angus farm.

*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*