

Kansas 4-H Livestock Sweepstakes

Livestock Sweepstakes will be hosted on the K-State campus August 22-23. 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 hosting Kansas 4-H youth to kick off the school year! For more information, contact Lexie Hayes (adhayes@ksu.edu or 785-532-1264.)



Register Now - Beef Stocker Field Day

Registration is now open for this year's 27th annual KSU Beef Stocker Field Day which will be hosted in Manhattan, KS on Thursday, September 24 at the KSU Beef Stocker Unit. The day will start at 9:30 a.m. with registration and coffee and will conclude with a good old-fashioned Prairie Oyster Fry.

The schedule is as follows:

- 9:30 a.m. Registration & Coffee
- 10:00 a.m. Introductions
- 10:15 a.m. Beef Cattle Outlook - *Dr. Glynn Tonsor, K-State Ag Econ*
- 11:00 a.m. Producer Panel: Does Theileria impact the health of newly arrived stocker cattle?
Dr. Cassandra Olds, K-State Entomology
Margaret Ann Smith, Southlex Cattle Co., Lexington, VA
Dr. Gregg Hanzlicek, K-State Diagnostic Laboratory
Dr. Don Coover, SEK Genetics, Galesburg, KS
 Moderator- *Wes Ishmael, Executive Editor, Hereford World*
- 12:15 p.m. Barbeque Brisket Lunch
- 1:00 p.m. The Alltech Method: Proven Strategies for Stocker Cattle Performance - *Dr. Vaughn Holder, Alltech*
- 2:00 p.m. Considerations for Using Corn Silage in Growing/Backgrounding Programs - *Dr. Galen Erickson, University of Nebraska*
- 2:45 p.m. Break
- 3:15 p.m. Optimizing Mineral Nutrition of Calves - Pre- and Post-Weaning Strategies - *Dr. John Arthington, University of Florida*
- 4:00 p.m. Developing Tactics of When and Where to Pen Cattle - *Dr. John Groves, Livestock Veterinary Service, Eldon, MO*
- 5:00 p.m. Cutting Bull's Lament
 After the program be our guest for Prairie Oysters

Pre-registration is \$30 per person and is due by September 10. After that date or onsite the cost is \$40 per person. For complete details and registration, visit asi.k-state.edu/events/stockerfieldday/ For more information contact Dale Blasi (dblasi@ksu.edu or 785-532-5427) or Katie Smith (katiesmith@ksu.edu or 785-532-1267.)



Upcoming Events

- August 22-23, 2026**
Kansas 4-H Livestock Sweepstakes
- August 27, 2026**
KLA/K-State Ranch Management Field Day
HP Rafter Lazy T Ranch - Sheridan County
- September 9, 2026**
Dairy Calf Care Workshop 1
Garden City, KS
- September 23-25, 2026**
HACCP Workshop - Manhattan, KS
- September 24, 2026**
Beef Stocker Field Day
- September 28, 2026**
Dairy Calf Care Workshop 2
Seneca, KS
- September 29, 2026**
Dairy Calf Care Workshop 3
Hutchinson, KS
- November 17-19, 2026**
Dairy Manager School - Garden City, KS
- November 19, 2026**
Swine Day

Department of Animal Sciences and Industry

Kansas State University
218 Weber Hall, 1424 Claflin Road
Manhattan, KS 66506
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Upcoming Events

KJLS Entry Deadline

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 modified show schedule and rules prior to entry. Exhibitors are also encouraged to review those items prior to 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 on the KJLS website, 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.

For information about entries or the show, please contact the KJLS staff directly.

Save The Date - KSU Swine Day



Save the date for this year's Swine Day, to be hosted on November 19 at the K-State Alumni Center. 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. Annie Lerner, Director of Nutrition and Research at Schwartz Farms Inc. on "Evaluating Technology: From Concept to On-Farm Implementation." Pre-registration is \$30 per participant and due by November 10. On-site registration is \$50 per participant. There is no charge for any K-State students if they are pre-registered. The complete schedule and online registration information can be found at asi.k-state.edu/events/swine-day/. For more information, contact Katie Smith (katiesmith@ksu.edu or 785-532-1267).

HACCP Workshop

Implementing Your Company's HACCP Plan will be hosted September 23-25 2026, in Manhattan, 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).

Dairy Calf Care Workshops

Kansas Dairy Commission and K-State will offer three workshops this fall for dairy producers, technicians and veterinarians. These workshops will focus on colostrum management, feeding times and pain management. All workshops will include morning presentations, lunch and a farm tour in the afternoon. These workshops are free to attend and provide continued education that can be used for the FARM program. More information on dates and registering is listed below. For more information or questions, contact Victor Gomez-Leon (vgomezleon@ksu.edu or 785-532-2652).

Dates & Locations:

- Workshop 1: September 9
- Location: Southwest Research and Extension Center. 4500 E Mary St, Garden City, KS 67846
- Invited speaker: Dr. Tera Rooney Barnhardt, Heritage Vet Partners
- Farm to visit: Kansas Dairy Development
- Pre-registrations: Kevin Snell (kpsnell@ksu.edu or 785-532-1281).
- Workshop 2: September 28
- Location: Meadowlark Extension District Office Complex, 1615 Branch St., Seneca, KS 66538
- Invited speaker: Dr. Gustavo Schuenemann, The Ohio State University.
- Farm to visit: Buessing Dairy Farm
- Pre-registrations: Ross Mosteller (rmostell@ksu.edu or 785-336-2184).
- Workshop 3: September 29
- Location: Amish Community Building, 5917 W. Mills Avenue, Hutchinson, KS 67501
- Invited speaker: Dr. Gustavo Schuenemann, The Ohio State University
- Farm to visit: Miller Dairy
- Pre-registration: Patrick Bergkamp (pbergkamp@ksu.edu or 620-662-2371).

What's New

Management Minute

Are you a Manager or a Leader?

Justin Waggoner
KSU Extension Beef Cattle Specialist
Garden City, KS

I recently came across an article that contrasted management and leadership ("Learning for future and personal and business success" by Bob Milligan). Many of you like myself who always arrive at the most logical conclusion quickly are likely saying "a manager is a leader" and yes that is true. However, there is a difference between the roles and responsibilities of managers and leaders. Leaders give an organization direction. Leaders focus on the future by motivating individuals or groups of individuals. Managers tend to be less focused on the future, and more on the here and now. Managers organize, plan, budget and ultimately implement the vision of the leader. Are you a leader or manager? Is it possible to be both? As organizations and businesses grow larger structure becomes more important because of the established fact that it is "hard to see tomorrow, when you are buried in today."

Feedlot Facts

"Silage Harvest Safety"

Justin Waggoner
KSU Extension Beef Cattle Specialist
Garden City, KS

One of the busiest, most fast paced operations that occurs in the Fall is corn silage harvest. Cutters and choppers in the fields, trucks racing from the field to the pile or bunker, multiple tractors pushing and packing silage. The speed at which we can harvest silage is amazing, but we should never allow the speed at which can accomplish a task to compromise safety. In the infamous words of Dr. Keith Bolsen "Every silage accident could have been prevented". Listed below are a few things to consider and discuss and keep everyone safe during this year's silage harvest:

- Don't become complacent. Stay aware of the surroundings. Let's face it there are a lot of highly repetitive operations in putting up silage. One of the number one factors that lead up to an accident is complacency or lack of situational awareness. The stories often start with "I've done that 100 times before".
- Truck drivers should always slow down when approaching houses and intersections on all roads, every time. There is nothing more impressive than a line of silage trucks perfectly spaced coming out of a field. The increased traffic on gravel roads creates dust, and the crops are tall, both of which reduce visibility at intersections. Those houses along the road belong to our neighbors and friends, some of which have children. Thus drivers, should always be aware when working near residences and be courteous to others on the road.
- People 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 a bright colored orange safety vests and not approach the area until they have made eye contact with equipment operators.
- 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.
- 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 potentially those who may not be familiar with silage activities and the associated risks.

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

KSU Cow-Calf Checklist - August 2026

“Management Considerations for October 2026”

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

Cow Herd Management

- For spring-calving cowherds:
 - 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 cowherds:
 - 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 ≤ 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 cowherd for the rest of the year.
- With high feeder calf prices, consider price risk management tools for fall-calves.

What's New for Swine Producers

Effects of a Bacillus-Based Feed Additive in Nursery Pig Diets Containing Low or High Levels of Soybean Meal-

A total of 4,320 nursery pigs (PIC 337 × 1050, initially 14.7 ± 0.21 lb) were used in a 42-d study to determine the effects of a bacillus-based feed additive on growth performance and fecal dry matter (DM) in nursery pig diets with low or high levels of soybean meal (SBM). At approximately 21 d of age, pigs were weaned, blocked by initial BW and allotted to one of four dietary treatments in a randomized complete block design with 20 replications per treatment. Diets were formulated in three phases and fed from d 0 to 7, 7 to 21, and 21 to 42, respectively. The four treatments were arranged in a 2 × 2 factorial with main effects of bacillus-based feed additive (none or 10^6 colony-forming units (CFU)/g of complete feed; Argis, Kent Nutrition Group, Muscatine, IA) and SBM level (low or high). On approximately d 14 (range of 9 to 20 days post placement) of the study, fecal samples were collected from three pigs per feeder to determine fecal DM. From d 0 to 7, an SBM × bacillus interaction was observed ($P < 0.05$) for ADFI, where pigs fed high SBM diets had decreased ADFI compared to pigs fed low SBM when bacillus was not in the diet; however, when bacillus was in the diet, SBM level did not affect ADFI. Additionally, pigs fed high SBM had decreased ($P < 0.05$) ADG and poorer F/G compared to pigs fed low SBM. From d 7 to 21, the SBM × bacillus interaction was observed ($P < 0.05$) for ADG and F/G, where pigs fed high SBM had increased ADG and improved F/G compared to pigs fed low SBM when bacillus was not in the diet; however, when bacillus was in the diet, SBM level did not affect ADG, and there was a smaller improvement in F/G in pigs fed high SBM compared to those fed low SBM. Pigs fed high SBM had decreased ($P < 0.05$) ADFI compared to pigs fed low SBM. From d 21 to 42, there was a tendency ($P = 0.076$) for pigs fed bacillus to have higher ADG compared to pigs not fed bacillus. Overall, the SBM × bacillus interaction was observed ($P < 0.05$) for F/G, where pigs fed high SBM had improved F/G compared to pigs fed low SBM when bacillus was not in the diet; however, when bacillus was in the diet, SBM level did not affect F/G. For fecal DM, pigs fed high SBM had decreased ($P < 0.05$) fecal DM compared to pigs fed low SBM. The SBM × bacillus interaction was observed ($P < 0.05$) for total removals and mortality, where pigs fed high SBM had increased total removals and mortality compared to pigs fed low SBM when bacillus was not in the diet; however, when bacillus was in the diet, SBM level did not affect total removals and mortality. In summary, high SBM had negative effects on phase 1 growth, fecal DM, and removals and mortality, but high SBM improved phase 2 ADG and phase 2 and 3 F/G. When bacillus was not in the diet, high SBM increased removals and mortality; however, when bacillus was in the diet, SBM level did not affect removals and mortality. More information is available on this study and others like it at KSUSwine.org. *(This study conducted by Ty H. Kim, Grady A. Privett, Pau Salgado-Lopez, Mike D. Tokach, Joel M. DeRouchey, Jason C. Woodworth, Robert D. Goodband, Katelyn N. Gaffield, Thomas E. Weber, Kale Kausemaker, Brooke Anderson, Dwight J. Shawk, Noah C. Gainey, Veronica Polniak, and Jordan T. Gebhardt.)*

Effect of Zinc Source and Level on Growth Performance, Fecal Dry Matter, and Fecal Zinc Concentration of Nursery

Pigs- A total of 2,268 pigs (initially 12.5 ± 0.68 lb) were used to evaluate the effect of zinc (Zn) sources and levels on nursery performance and fecal dry matter. At weaning, pens of pigs were sorted by body weight (BW) and then randomly assigned to one of the seven dietary treatments in a 3 × 2 + 1 arrangement, with main effects of Zn source and level. The Zn sources included zinc oxide (ZnO) and two sources of Zn hydroxychloride. The total dietary Zn levels were set at 1,500 ppm or 1,000 ppm during phase 1 and at 1,000 ppm or 500 ppm during phase 2. An additional treatment was included as a positive control, utilizing 3,000 and 2,000 ppm of Zn from ZnO in phases 1 and 2, respectively. After the experimental period (dietary phases 1 and 2), all pigs were fed a common phase 3 diet for 14 d, which contained 100 ppm of added Zn from ZnSO₄. On d 7 and 21, fecal samples from three pigs per pen were collected for dry matter analysis. During the experimental phase, common phase, and overall, no significant Zn source × level interactions or main effects of Zn source or level were observed. Within the diets provided Zn from ZnO, no differences were observed between treatments for growth performance, mortality, removals, and fecal dry matter. For the d 7 fecal Zn concentration, a significant interaction ($P = 0.009$) between the Zn source × level was observed, where a greater ($P < 0.05$) fecal Zn concentration was observed as the dietary Zn inclusion increased when ZnO or Zn hydroxychloride source B was used, but no differences ($P > 0.10$) between levels were observed in the Zn hydroxychloride source A. At d 21, the fecal Zn concentration decreased ($P < 0.001$) as dietary Zn concentration decreased, independent of the Zn source ($P > 0.10$). In conclusion, the source and level of dietary Zn did not significantly impact growth performance, removals, mortality, or fecal dry matter of nursery pigs. However, utilizing lower dietary Zn levels independent of the source resulted in lower fecal Zn concentration. 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.)*

What's New for Cattle Producers

Use of Unmanned Aerial Vehicle Technologies with Thermal Imaging to Assess Surface Moisture in Pens of Cattle Offered Energy-dense vs. Low-energy Feeding Programs - Characterize surface moisture levels in cattle pens as determined by different feeding programs and evaluate associations between unmanned aerial vehicle (UAV) thermal images and surface moisture in pens.

Study Description: Six dirt-floor pens (30 × 50 ft) housing 14 dairy-beef crossbred steers each were assigned to an energy-dense, limit-fed ration (LIMIT; 64 net energy for gain [NEg]) or a low-energy ad libitum ration (ADLIB; 50 NEg). Each pen was divided into 15 quadrants, and pen floor samples were collected for moisture analysis. A UAV was flown to capture thermal images, which were processed to extract quadrant-level luminosity values. Associations between UAV-derived luminosity and direct moisture measurements were analyzed.

The Bottom Line: Results confirmed low-energy, ad libitum pens were wetter than energy-dense, limit-fed pens, and luminosity values strongly predicted moisture with excellent agreement (CCC = 0.98). More information is available on this study and others like it at KSUBeef.org. *(This study conducted by Logan Diller, Logan Thompson, Dale A. Blasi and Haley E. Larson).*

Consumer Preferences for Eating Quality of USDA Prime Beef Differentiated into Tiers-The objective of this study was to evaluate consumer palatability preferences in strip loin steaks of upper 2/3 Prime when compared to Low Prime, upper 2/3 Choice, and Low Choice cooked to three degrees of doneness (DOD).

Study Description: Beef strip loin steaks from four marbling categories (upper 2/3 Prime [Super Prime], Low Prime, Top Choice, and Low Choice) were cooked to one of three DOD (Rare = 140°F, Medium = 160°F, and Well-done = 170°F) on an electric flat top grill. Flip and pull temperatures for the steaks were specific to each DOD. Consumers evaluated samples for juiciness, tenderness, flavor, and overall liking using a 100-point line scale and indicated acceptability for each trait. Responses were recorded using a digital survey on an electronic tablet.

The Bottom Line: These results indicate consumers prefer the eating quality of Super Prime steaks and support the need for a premium program within the Prime grade, offering the beef industry an opportunity to capture added value from this highest-a grade within beef. More information is available on this study and others like it at KSUBeef.org. *(This study conducted by Chesney A. Effling, Lauren M. Frink, Mason J. Prester, Stephanie L. Witberler, Katelynn E. Wallace, Greta E. Huber, Samuel L. Stickley, Erin S. Beyer, Morgan D. Zumbaugh, Jessie L. Vipham, and Travis G. O'Quinn).*

Effects of Alternative Feed Timing on Growth Performance and Water Usage of Growing Beef × Dairy Heifers Fed a High Roughage Diet- The objective of this study was to evaluate the effects of feed delivery time on growth performance and water usage of growing cattle on high-roughage diets fed ad libitum during periods of heat stress.

Study Description: A total of 260 black-hided, dairy-derived beef heifers were blocked by weight, stratified within block, and randomly assigned to 20, 13-head pens. Pens were randomly assigned to one of two treatments: 7:00 a.m. or 7:00 p.m. feed delivery of a diet formulated to provide 50 Mcal of net energy for gain per 100 lb of dry matter for ad libitum intake. Heifers were fed once daily, targeting 10% daily feed refusals for an 84-day period. Water usage was recorded using meters attached to each water unit.

The Bottom Line: Delivering feed at 7:00 p.m. did not improve growth performance compared to 7:00 a.m. feedings, but the later feeding time did decrease water usage in growing heifers during an 84-day feeding period. More information is available on this study and others like it at KSUBeef.org. *(This study conducted by Clayton H. Stoskopf, Colton D. Weir, W. Cole Ellis, Taylor A. Rowe, William R. Hollenbeck, A. J. Tarpoff, and Dale A. Blasi).*

ASI Faculty Highlight



Victor Gomez-Leon (vgomezleon@ksu.edu or 785-532-2652)

Associate Professor/Dairy Extension Specialist

Victor grew up helping his family's agricultural enterprises in Colombia, where he also earned his bachelor's degree in Veterinary Medicine and Animal Science (2011). He pursued a M.Sc. and a Ph.D. in Veterinary medicine at the Universidade Federal de Viçosa in Brazil. From 2017 to 2021, Victor conducted part of his Ph.D. and subsequently a post-doctoral training at University of Wisconsin-Madison.

Victor is an Associate Professor and Extension Dairy Specialist in the Department of Animal Sciences and Industry at Kansas State University. He integrates applied research and data-driven strategies to improve reproductive efficiency, management, and sustainability in modern dairy systems.

He leads the K-State Dairy Repro Lab, which focuses on understanding and optimizing ovarian and uterine dynamics to enhance fertility and reproductive management. His research combines field-based studies in commercial dairies with physiological investigations, generating impactful outcomes that translate directly into industry adoption.

His major extension initiative — known as the Dairy Extension Educational Program (DEEP) in reproduction — offers bilingual (English/Spanish) hands-on training for veterinarians, technicians, and producers, collectively reaching hundreds of professionals and dairy herds that represent millions of cattle across the U.S. and Latin America. He works closely with a diverse network of partners across the dairy industry to translate science into practical, real-world progress.

Victor lives in Manhattan with his wife, Leticia Sanglard, a scientist on the Genetics R&D team at Zoetis, and their 3-year-old son, Sam. They are excitedly awaiting the arrival of their second son, Martin, in October 2026.



Emma Briggs (eabriggs@ksu.edu or 785-625-3425)

Assistant Professor/Beef Systems Extension Specialist

Emma grew up on her family's commercial cow-calf operation in Northern California. She was actively involved in 4-H and FFA programs during her youth. She earned a B.S. in Animal Science from California State University, Fresno, followed by an M.S. in Animal Science from Colorado State University, where her research focused on animal breeding and genetics. Emma went on to earn a Ph.D. in Animal Science from Oklahoma State University, specializing in ruminant nutrition.

Emma joined Kansas State University as an Assistant Professor and Beef Production Systems Scientist at the Agricultural Research Center in Hays, Kansas. Here, she utilizes a cow herd and feedlot to conduct practical research that supports Kansas cattle producers. Her research focuses on enhancing beef cattle efficiency and adaptability to tackle key challenges in the livestock industry.

*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*