

News From KSU Animal Sciences

DECEMBER 2024

On behalf of the Department of Animal Sciences and Industry, we wish you a Merry Christmas and Happy New Year.

For our livestock producers, we have been able to find positives in many of our livestock species with strong market prices and lowered feed costs in 2024. We need to take time to recognize all the hard work and dedication of our Kansas farmers and what they endure year after year to make their operations sustainable. In Extension we have an impact on citizens' lives and that is something that should fill you with great pride. We in the Department of Animal Sciences and Industry are proud to be associated with the excellent team of Extension professionals across the state of Kansas partnering in our mission to meet the needs of our clientele in the livestock industries.

We are excited to see the K-State Agriculture Innovation Initiative become a reality with the tear-down of older facilities and ongoing new construction that is focused on building the capacity of K-State to support students, faculty, and the agriculture industry. This is the largest single investment in agriculture at K-State and we are excited to see what the future holds to make K-State a next-generation land-grant university.

Thank you and have a Merry Christmas and Prosperous New Year. Joel DeRouchey, Extension State Leader, Animal Sciences and Industry

Kansas 4-H Beef EID Tag Orders Due

The deadline to order Kansas 4-H Beef EID tags is quickly approaching on December 15. The completed and signed beef EID tag order form, as well as payment, must be received by the deadline for an extension units order to be accepted. Please also <u>email</u> a copy of the completed form to the KSU Youth Livestock Program before mailing it. Checks should be made payable to Kansas State University.

Market beef and commercial heifer projects that will be nominated for the Kansas State Fair Grand Drive and/or KJLS are required to be tagged with an EID tag. There is an alternative tagging process for those cattle that will be nominated and already have an 840 EID upon purchase of the animal or it arriving at tagging. So, extension unit's are encouraged to have families let them know if their steer or heifer already has an 840 EID tag in advance and should check both ears closely before applying the Kansas 4-H EID! Animals may only have one official EID, which cannot be removed.

Order forms and further details on livestock project tagging may be found on the Youth Livestock Program website, under <u>EID tags</u>. The page also includes a summary of orders received thus far. It is updated at the end of each week. Only tags issued within the last 5 years will be accepted for state nominations. Tags distributed prior to 2020, including any tag number in the range of 45200-60000, will not be eligible for 2025.

Extension units are welcome to pay for all of their livestock EID tags with one check. Those who chose this option need to include both the beef and small livestock order forms with their payment by December 15. For those submitting their orders separately, the deadline to order small livestock tags is January 15.

IRM Redbooks for Sale

A limited supply of the 2025 IRM Redbooks are still available. These are sold on a first-come, first-serve basis. The price is \$7.50 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, please contact Katie Smith (katiesmith@ksu.edu or 785-532-1267.)

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<u>Upcoming Events</u>

February 4, 2025 Swine Profitability Conference

March 1, 2025
K-State Junior Swine Producer Day

March 6, 2025 Stockmen's Dinner

March 7, 2025 Cattlemen's Day

March 7, 2025 Legacy Bull Sale

March 22, 2025 K-State Junior Meat Goat Producer Day

Upcoming Events

Registration Now Open - Swine Profitability Conference

Registration is now open for the K-State Swine Profitability Conference happening on Tuesday, February 4, 2025, at the Stanley Stout Center in Manhattan, KS.





The schedule includes:

9:15 a.m. Registration 9:30 a.m. Welcome

9:45 a.m. Current Profitability Situation and Insights into Pork

Demand - Dr. Glynn Tonsor, K-State professor in

Agriculture Economics

10:30 a.m. 10 Habits of Highly Productive Pork Producers -

Dr. Lisa Tokach, Abilene Animal Hospital

11:15 a.m. Our Generational Legacy Story - Michele Walter and

Family, Keesecker AG and 3MK Pork LLC

Noon Lunch

1:15 p.m. Macroeconomics of Global and US Grain and

Oilseed Dynamics for 2025 - Brian Burke, president,

John Stewart and Associates

2:15 p.m. Key Competencies that Enable Success of a Live-

Hog Production System - Dr. Bradley Wolter, Windy

Hill Meadows and former CEO of The Maschhoffs

3 p.m. Adjourn

Pre-registration is \$25 per participant by January 24. Registration on/after January 25, or at the door is \$50 per participant. The complete schedule and online registration information can be found at <u>asi.ksu.edu/SwineProfit</u>. For more information contact Katie Smith (katiesmith@ksu.edu or 785-532-1267.)

Registration Now Open - Cattlemen's Day



The 112th Cattlemen's Day will be hosted on Friday, March 7, 2025 at Kansas Farm Bureau in Manhattan, KS. Registration will be \$25 if registered by February 21, or \$35 if registered on/after February 22 or at the door. Space is limited, and registration will only remain open while seats are available. Morning refreshments and lunch are included with registration. A complete schedule will be posted to <u>asi.ksu.edu/cattlemensday</u>. For questions, please contact Katie Smith (katiesmith@ksu.edu or 785-532-1267.)

YQCA Launching Scholarship Program



The national youth livestock quality assurance program, Youth for the Quality Care of Animals (YQCA), will be launching a scholarship program in 2025. Applications are expected to open in January and close on February 17. High school seniors through college students who are 21 years of age are encouraged to apply. For more information, visit the YQCA program website.

54th Annual Stockmen's Dinner

The 54th annual Stockmen's Dinner is scheduled for March 6, 2025, at the Stanley Stout Center in Manhattan, KS. Plan now to join us as we honor Richard Porter as the 2025 Stockman of the Year. Registration is \$50 per person and the deadline to register is February 20. To register, visit <u>asi.ksu.edu/stockmensdinner</u>. For questions, contact Katie Smith (katiesmith@ksu.edu or 785-532-1267.)

Upcoming Events

K-State Junior Producer Days Registration is Open





Registration is now open for the 2025 K-State Junior Producer Days! Junior Swine Producer Day will be Saturday, March 1, with Junior Meat Goat Producer Day scheduled for Saturday, March 22. Both events will be hosted at the Stanley Stout Center, north of the K-State campus in Manhattan. These events are one-day educational events for families to learn more about the selection and management of a specific specie. Youth, adults, extension agents, project leaders, and volunteers of all ages and skill levels are invited to attend! Presentations will be provided by K-State faculty, staff, students, extension agents, former exhibitors, and guest speakers. Topics range from selection, to nutrition, reproduction, health, clipping and grooming, and showmanship. This is a family learning event! Everyone who plans to attend must register, including both youth and adults. The cost is \$20/person by the deadline, or \$25 after the deadline for both events. Only those who register by the appropriate deadline will receive a t-shirt. Both events will also be capped at 400 participants. Junior Swine Producer Day registrations are due February 5, with Junior Meat Goat being due February 26. Registration is open now and can be completed online using this link: http://bit.ly/ksuasiregister. Junior Producer Day event registrations are non-refundable.

An optional YQCA instructor-led training and state livestock nomination session will be offered at the end of each program. Specific details about the YQCA certification will be shared with those who indicate on their registration that they plan to stay for the additional class. The K-State Sheep & Meat Goat Center is also offering an opportunity to tour their facility the night before the program, or following the event on Saturday. More information about the junior day events, including each of the flyers, are available on the @ksuylp Facebook page and the KSU YLP website: https://www.asi.k-state.edu/extension/youth-programs/events/ks-jr-producer/. For more information, contact Lexie Hayes at adhayes@ksu.edu or 785-532-1264.

What's New

Management Minute

"Trust is Everything"

Justin Waggoner, KSU Extension Beef Cattle Specialist, Garden City, KS

Trust is easily one of the most essential traits of successful leaders and teams in the workplace. Good leaders build trust and successful teams create and foster trust. Trust is simply defined as the belief in the reliability, ability, or strength of someone or something. However, trust is challenging to quantify and often leaders or teams are built upon performance or skills and not necessarily trust. Leadership consultant and author, Simon Sinek offers some perspective on trust versus performance in a team or organization https://www.youtube.com/watch? w=PTo9e3ILmms and building trust https://www.youtube.com/watch?v=MAfGb-AYx61. I would highly encourage you to watch these short videos. Essentially, what Sinek discusses in these videos is why trust is the foundation of leadership and successful teams. Trust is important but challenging to quantify and foster. The "Harvard Business Review" suggests that leaders foster trust by following through on commitments "Do what you said you were going to do", demonstrating integrity, fairness, and becoming more self-aware of what they are good at, what they are not good at and how others perceive them. Trust is not built overnight, it is built over time and reinforced by how leaders and teams respond to different situations. It is not the sum of one key indicator but multiple indicators over time.

Feedlot Facts

"Cold Stress Increases Energy Requirements"

Justin Waggoner, KSU Extension Beef Cattle Specialist, Garden City, KS

Cattle are most comfortable within the thermonuetral zone when temperatures are neither too warm nor cold. During the winter months cattle experience cold stress anytime the effective ambient temperature, which takes into account wind chill, humidity, etc., drops below the lower critical temperature. The lower critical temperature is influenced by both environmental and animal factors including hair coat and tissue insulation (body condition). The table below lists the estimated lower critical temperatures of cattle in good body condition with different hair coats. In wet conditions, cattle can begin experiencing cold stress at 59°F, which would be a relatively mild winter day. However, if cattle have time to develop a sufficient winter coat, the estimated lower critical temperature under dry conditions is 18°F. Cold stress increases maintenance energy approximately 1% for each degree below the lower critical temperature, but does not impact protein, mineral, or vitamin requirements. Thus, maintenance energy requirements of cattle may increase by 15-20% on those exceptionally cold and windy days that commonly occur in January and February. Increased maintenance energy requirements essentially means that less energy is available for production (gain), which translates to lower ADG, increased Feed:Gain, and greater Days on Feed.

Estimated lower critical temperatures for beef cattle	
Coat Condition	Critical Temperature
Wet or summer coat	59°F
Dry fall coat	45°F
Dry winter coat	32°F
Dry heavy winter coat	18°F

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

KSU Cow-Calf Checklist - December 2024

Management Considerations for February 2025

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

Cow Herd Management

- Target BCS at calving for spring-calving cows:
 - 5 for mature cows
 - 6 for young females
- Be ready to start your post-calving nutrition program for spring-calving cows.
- Evaluate fall-calving cows for BCS:
 - Adjust nutrition program as needed relative to weaning date
- If conditions allow, keep grazing crop residues and dormant pastures but be prepared to move cattle or provide supplemental feed.
- Increase energy content 1% for every degree F below the lower critical temperature (LCT) when dry, 2% if they have a wet hair coat.
- Put down bedding, remove snow, ensure cattle have access to wind protection.
- Supply adequate water volume and space in freezing conditions.
- Don't forget about your herd bulls!
 - Bulls need to be in a BCS ≥ 5.0 prior to the next season of use
 - Keep young and mature bulls separate if possible and provide plenty of space to prevent injury
 - Spread sufficient fresh bedding to help avoid testicular frostbite

Calf Management

- Do you have a plan for weaning and marketing fall-born calves?
 - Evaluate your feed resources and cost of gain relative to the value of gain
 - Talk to prospective buyers in advance of selling
- Evaluate calf health protocols, both spring- and fall-born calves.
- Monitor growth and pubertal development of replacement heifers.

General Management

- For spring-calving herds this calving season:
 - How are you going to record your calving data?
 - What information are you going to record?
- Take inventory of supplies and clean equipment prior to spring calving.
- If making bull selection decisions:
 - Review your herd performance relative to your marketing and genetic goals.
 - Study EPDs impacting your marketing and genetic goals and do your homework well before sale day.



What's New for Swine Producers

Effects of a Pre-weaning Socialization System on Piglet Mortality and Growth Performance, and Subsequent Sow

Performance- A total of 3,307 (PIC L 42) mixed-parity sows and 55,160 (PIC 337 × L 42) piglets were used to determine the effects of different farrowing systems on piglet livability, lifetime growth performance, and subsequent sow performance. Treatments were assigned to farrowing rooms and consisted of a conventional farrowing system (sows and piglets housed in individual farrowing crates) or a pre-weaning socialization system (crate dividers removed between farrowing crates and walkways within 6 to 24 hours post-farrowing such that 12 to 32 litters of piglets were co-mingled). A total of 40 farrowing rooms with 80 crates each were used with 20 replications per treatment. Pigs were weaned at approximately 23 d of age. No differences were observed in lactation length, total born, born alive, stillborn, mummies, or the number of pigs weaned. Pre-wean mortality was greater (P < 0.001) for pigs from the pre-weaning socialization system compared to pigs from the conventional system (14.7 vs 12.6%, respectively). A greater (P ≤ 0.015) percentage of pigs died in the pre-weaning socialization system compared to pigs from the conventional system due to being laid on, starving out, Streptococcus suis, and either umbilical or scrotal ruptures. However, a greater (P = 0.014) percentage of pigs died from scours in the conventional system compared to the pre-weaning socialization system. No differences were found in subsequent sow performance, except a marginally significant (P ≤ 0.082) increase in the percentage of sows bred by d 4 and 7 for sows previously housed in the pre-weaning socialization system. A subset of offspring (4,313 pigs initially 11.9 ± 0.34 lb)

were transported to a commercial research facility to evaluate lifetime performance. Weaning weights were heavier (P < 0.001) for the conventional system compared to the pre-weaning socialization system. Pigs were housed in pens according to sow treatment (conventional or pre-weaning socialization) with 44 to 46 pigs per pen and 48 replications per treatment. During the nursery and grow-finish periods, pigs from the conventional system had increased (P < 0.001) BW, ADG, ADFI, but poorer F/G compared to pigs from the pre-weaning socialization system. In the nursery phase, removals, mortality, and total removals and mortality were greater ($P \le 0.059$) in pigs raised in the pre-weaning socialization system than in the conventional system, but no differences were observed in the growing-finishing phase. For the overall period (d 23 to 183), pigs from the conventional system had increased ($P \le 0.001$) BW, ADG, and ADFI, but poorer F/G compared to pigs from the pre-weaning socialization system. No differences were observed for removals and mortality. For overall carcass data, pigs from the conventional system had increased ($P \le 0.094$) HCW, carcass yield, loin depth, and lean percentage compared to pigs from the pre-weaning socialization system. In summary, pigs raised in the conventional farrowing system had increased livability, lifetime growth performance, and carcass characteristics compared to pigs raised in the pre-weaning socialization system. 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, Paula Giacomini, Jordan T.

Gebhardt, Mike D. Tokach, Robert D. Goodband, Joel M. DeRouchey, Jason C. Woodworth, and Annie B. Lerner).

Effects of Increasing Dietary Zinc in Low ABC-4 Diets on Nursery Performance, Fecal Dry Matter, Serum Zinc, and Zinc Excretion - With the potential negative impact of pharmacological levels of zinc (typically from zinc oxide; ZnO) on the environment and public health, it's necessary to validate the doses commonly used in commercial swine production and evaluate new nutritional strategies to replace the use of pharmacological levels of Zn. A total of 360 pigs (initially 13.2 ± 1.63 lb) were used to evaluate the effects of increasing dietary Zn and the acid-binding capacity (ABC-4) of the diet on nursery pig performance, fecal dry matter, serum Zn, and Zn excretion. At weaning, pigs were randomly assigned within two body-weight blocks to one of the six dietary treatments in a randomized complete block design. There were five pigs per pen and 12 pens per treatment. Experimental diets were fed for the first 24 d (phases 1 and 2), and then all pigs were fed a common phase 3 diet for 22. d. All diets contained 110 ppm of Zn from ZnSO4 from the trace mineral premix. The control treatment consisted of a low ABC-4 diet (200 and 250 meg/kg from d 0 to 10 and d 10 to 24, respectively). The next four treatments were the control diet with increasing Zn at 500, 1,000, 2,000, and 3,000 ppm in phase 1, and 333, 666, 1,332, and 2,000 ppm in phase 2 using ZnO. The sixth treatment was a high-ABC-4 diet (493 and 470 meg/kg from d 0 to 10 and d 10 to 24, respectively) with 3,000 and 2,000 ppm of added Zn in phases 1 and 2, respectively from ZnO. In all periods, no differences (P > 0.10) were observed between the low- and high-ABC-4 diets when 3,000 and 2,000 ppm of Zn were added in phases 1 and 2, respectively. For the experimental period (d 0 to 24), ADG and ADFI increased (linear, P < 0.05) as dietary Zn increased, with no difference in F/G. For the overall period, no response (P > 0.10) to dietary Zn was observed for any of the performance criteria. For fecal dry matter, no significant effect of dietary Zn was observed at d 10 or 24 (P > 0.10). However, at d 10, low-ABC-4 diets had a higher (P = 0.002) fecal dry matter than the high-ABC-4 diets at the same dietary level of Zn. Zinc intake, fecal Zn excretion, and Zn absorption increased (quadratic, P < 0.001) as dietary Zn concentration increased. A trend was observed (linear, P = 0.074) as the apparent total tract digestibility (ATTD) of Zn was increased as dietary Zn concentration increased. Low-ABC-4 diets had higher (P < 0.05) Zn intake, absorption, and ATTD of Zn than the high-ABC-4 diet at the same dietary Zn concentration. No difference (P = 0.921) was observed for fecal Zn excretion between ABC-4 formulation strategies. Day 24 serum-Zn concentration increased (quadratic, P < 0.001) as dietary Zn increased and a marginal increase (P = 0.095) in favor of the low-ABC-4 diets was observed between the formulation strategies. In conclusion, lowering the dietary ABC-4 capacity of diets containing pharmacological levels of ZnO increased d 10 fecal dry matter, Zn absorption, and the ATTD of Zn. Increasing ZnO in low-ABC-4 diets improved ADG and ADFI during the experimental period. However, this did not translate into overall performance differences. More information is available on this experiment and others in the KSU Swine Day report 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



Ahmed Hammam (arhammam@ksu.edu or 785-532-1216) Assistant Professor - Dairy Science

Dr. Ahmed Hammam obtained his bachelor's degree in 2012 in Dairy Science from Assiut University, Egypt. Following graduation, he worked at the Dairy Science Department at Assiut University as a Teaching and Research Assistant, where he was responsible for teaching several courses for undergraduate students and conducting research in dairy manufacturing.

In 2017, Dr. Hammam joined the Dairy and Food Science Department at South Dakota State University (SDSU) as a Graduate Research Assistant to pursue his master's degree in Dairy Manufacturing, which he earned in 2019. He continued his academic journey at SDSU, earning his Ph.D. in Dairy Manufacturing in 2022. During his doctoral studies, he taught dairy products judging courses (2020–2022) and coached the Dairy Products Judging Team at SDSU, leading them to the third place in the Collegiate Dairy Products Evaluation Contest (Milwaukee, WI) in 2022.

Dr. Hammam gained extensive industry experience over the last three years, specializing in dairy processing, product development, and quality improvement. He developed innovative solutions and implemented sustainable practices to enhance efficiency and product quality in dairy manufacturing.

In November 2024, Dr. Hammam joined the Animal Sciences and Industry Department at Kansas State University as an Assistant Professor in Dairy Foods Processing. He currently holds a 60% research and 40% teaching appointment, with responsibilities that include teaching Dairy Foods Processing & Technology (ASI 608), Food Products Evaluation (FDSCI 335), and Advanced Dairy Products Evaluation (FDSCI 435 & FDSCI 735). His research focuses on developing innovative processes to manufacture dairy ingredients using novel technologies such as membrane filtration to meet industry and consumer needs.



Karen Blakeslee (kblakesl@ksu.edu or 785-532-1673) Extension Associate - Food Science Coordinator of Rapid Response Center Co-Director of Kansas Value Added Foods Lab

Karen Blakeslee received her B.S. in 1986 and her M.S. in 1997 from Kansas State University. She is Co-Director of the Kansas Value Added Food Lab, a program that helps small food manufacturers develop and sell food safely in Kansas to small markets such as Farmers Markets or other direct-to-consumer outlets. She is coordinator for the KSU Rapid Response Center, which was formed in 1995 as a resource for Kansas State University Research & Extension Agents. The Rapid Response Center works closely with Food Science faculty as well as Food, Nutrition, Dietetics and Health faculty to answer Extension Agent and consumer questions about food. Most questions are related to food safety, home food preservation, and food preparation. Other responsibilities include being codirector of the Master Food Volunteer program; managing several websites; and teaching home food preservation to all age groups across Kansas. Karen has received the President's Award of Excellence for Unclassified Professionals, the K-State Research and Extension Builder Award, the Communicator of the Year award, and the Clover Award for K-State Research and Extension.

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

Jobs Available - Now Hiring

Research Technician- Kansas Artificial Breeding Services Unit (KABSU) (Job #518278) - The Kansas Artificial Breeding Services Unit (KABSU) is recruiting a full-time, benefits-eligible, unclassified, term, Research Technician position. The Kansas Artificial Breeding Services Unit (KABSU) is a unit within the Department of Animal Sciences and Industry at Kansas State University that provides reproductive resources to livestock, equine, and canine customers throughout Kansas and neighboring states. It is a self-funded fee-for-service business unit. This position will perform duties relevant to the daily activities of the Kansas Artificial Breeding Service Unit's Collection Laboratory and Housing facilities. https://careers.k-state.edu/jobs/research-technician-manhattan-kansas-united-states-4600d43f-6c43-44c2-9512-3efc3c86ace7

Animal Technician II - Agricultural Research Center Hays (Job #518567) - This position is responsible for the management and care of up to 200 replacement heifers, 350 cows and their calves, and 200 stocker cattle both locally and at distant sites. The incumbent also provides leadership to a research program in cow/calf production. For more information or to apply go to https://careers.k-state.edu/jobs/animal-technician-ii-other-kansas-united-states

Be sure to check out the new Voices of #KSUASI podcast asi_ksu_edu/voices