

Register Now - KSU Swine Day

Register now 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."

The schedule is as follows:

- 8:00 a.m. Technology Trade Show
Morning refreshments and coffee are available at this time
- 9:15 a.m. Welcome
- 9:30 a.m. K-State Applied Swine Nutrition Research Updates - *K-State Swine Faculty Research Highlights of Nutrition, Management, Feed Processing and Feed Safety*
- 11:30 a.m. Lunch with Trade Show
- 1:30 p.m. Latest Update on K-State Applied Swine Nutrition Research (continued)
- 2:30 p.m. Evaluating Technology: From Concept to On-Farm Implementation- *Dr. Annie Lerner, Director of Nutrition and Research at Schwartz Farm Inc.*
- 3:15 p.m. Question and Answer Session
- 3:30 p.m. Reception

Pre-registration is \$30 per participant and due by November 10. On-site registration is \$50 per participant. There is no charge for 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).



Bilingual Dairy Manager School (DMS)

K-State and Alta Genetics will be offering a bilingual Dairy Manager School (DMS) which will be hosted in Garden City, Kansas, on November 17, 18, and 19. This year's theme is "The Future of Dairy." Pre-registration is required and the cost starts at \$1300 without lodging, and the costs increases if you'd like lodging included.

During the DMS, the first two days consist of classroom-style sessions, followed by a farm visit on the morning of the third day. For the classroom portion, there will be two concurrent sessions, one in English and one in Spanish. There will be 7 speakers from Land-Grant Universities and the dairy industry who will discuss reproduction, genetics, calf care, transition cow management, and technology with participants.

For registration, please visit <https://share.hsforms.com/1BbiAWbJqT22fu9fHbBXvSwgam7b>. For questions, contact Victor Gomez-Leon (vgomezleon@ksu.edu or 785-532-2652)

Steak on Tap

Steak on Tap is a collaboration between K-State Meat Science and Manhattan Brewing Company and will be hosted on November 12 at 7:00 p.m. at Manhattan Brewing Company. Participants will enjoy four different cuts of beef, cooked and seasoned to perfection, while learning about the differences in palatability among the cuts. Between steaks, there will be time to grab a drink and mix and mingle with the group. Join us for an interactive, educational, and delicious evening of beef, brews, and meat science! Registration is \$25 per person if registered before November 12. After that date or at the door the cost increases to \$35 per person. To register visit <https://commerce.cashnet.com/KSUASIND?itemcode=ASIND-34A>. For questions, contact Erin Beyer at erbeyer@ksu.edu.

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Upcoming Events

- November 12**
Steaks on Tap
- November 17-19, 2026**
Dairy Manager School - Garden City, KS
- November 19, 2026**
Swine Day
- February 2, 2026**
Swine Profitability Conference
- March 4, 2026**
Stockmen's Dinner
- March 5, 2026**
Cattlemen's Day
Legacy Bull Sale

What's New

Management Minute

“Leading Through Change”

Justin Waggoner
KSU Extension Beef Cattle Specialist
Garden City, KS

As the saying goes, “the only constant is change”. There is comfort in what we know and uncertainty and anxiety in the unknown. Thus, employees and organizations are often resistant to change. Change is necessary component of growth within an organization. The process of initiating, and leading and organization or a group of co-workers through change can be difficult. Experts suggest that the best way to lead an organization through change is to clearly communicate the “Why” and the vision for “Where are we headed” first and then focus on the “How are we going to get there”. It is also important to identify and recognize informal leaders who can serve as “Change Agents” to champion the process and engage others in the organization at many different levels. Organizational change affects everyone and thus everyone has to be engaged. Lastly, it's critical to reinforce and reward individuals or teams that are embracing the change. Change is a process and it's the role of the leader to guide people through the process. Leading through change requires communication, being receptive to feedback and most importantly engaging people in the process.

Feedlot Facts

“Forage analysis: What numbers do I need and what do they mean”

Justin Waggoner
KSU Extension Beef Cattle Specialist
Garden City, KS

The basic components that nutritionists need to evaluate a feedstuff or develop a ration are dry matter (**DM**) or moisture, crude protein (**CP**), an estimate of the energy content of the feedstuff, Total Digestible Nutrients (**TDN**), Net Energy for Maintenance (**NEm**), Net Energy for gain (**NEg**), and the macro minerals, Calcium and Phosphorous. These are the most basic numbers that are required but including some additional analyses in the report can give us additional insight into the quality of the feedstuff or improve our ability to predict animal performance, which is the primary reason we analyze feedstuffs. I recommend that the report include acid detergent fiber (**ADF**) and neutral detergent fiber (**NDF**). The amount of NDF in forage reflects the amount of cell wall contents (hemicellulose, cellulose, and lignin) within the sample. The NDF fraction is often associated with the respective bulkiness of forage and is correlated with dry matter intake of the forage or feedstuff. Therefore, the amount of NDF may be used to estimate the expected dry matter intake associated with the forage. The ADF number represents the amount cellulose and lignin within the forage and is correlated with the respective digestibility of the forage. In general, a higher ADF value is associated with forage that has a greater proportion cellulose and lignin and would likely be a more mature. Additionally, the ADF fraction is used to calculate the energy estimates TDN, NEm, and NEg that appear on the report. There are a number of different mathematical equations that the testing laboratory may use to calculate these numbers, based on the type of sample (corn silage, alfalfa, grass hay, etc.). If the ADF is included in the report, the nutritionist can adjust or recalculate the energy estimates if necessary.

If forages will be fed in combination byproducts (wet distiller's grain, corn gluten feed) in a feedlot or growing ration including an analysis for sulfur is recommended. Additionally, if the forage is a known nitrate accumulator (forage sorghums, sudangrass) or may have been stressed due to drought, including a nitrate analysis should always be considered, especially if the forage will be fed to pregnant cows.

Most analytical laboratories have a number of different analysis packages available encompassing the most common procedures. These packages will typically include the basic procedures (DM, CP, TDN) and then add on specific analyses such NDF, or the Macrominerals (Ca,P, Mg, K, Na, Cl, S). Some laboratories group analysis packages by the type of sample (Forage, vs. mixed ration) or production purposes (dairy vs. beef).

The objective of analytical testing of forages and feedstuffs is to improve our ability to meet the animal's nutrient requirements and ultimately more accurately predict animal performance.

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

KSU Cow-Calf Checklist - October 2026

“Management Considerations for December 2026”

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

Cow Herd Management

- If not already done, take inventory of 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, sodium)
 - Nitrates and/or prussic acid when appropriate
 - Starch for silage crops
- Calculate forage needs based on herd inventory, cattle weight, and days, and develop a plan to ensure that adequate harvested forage is available if grazing is limited (<https://www.agmanager.info/hay-inventory-calculator>).
- Body condition score cows to develop informed supplementation strategies (both spring and fall-calving herds).
 - Targeted BCS at calving: 5 for mature cows, 6 for young females (2,3, & 4 year olds)
 - Record scores with the BCS Record Book (<https://bookstore.ksre.ksu.edu/Item.aspx?catId=562&pubId=19320>) from K-State Extension!
- Consider utilizing crop residues for late-fall and winter grazing needs. Assess down grain in the field and be aware of nitrates and prussic acid (around the time of frost for sorghums).
- For spring-calving cowherds:
 - Schedule pregnancy checking if not already done.
 - How were pregnancy rates relative to last year?
 - Do we need to re-think our fall/winter nutrition program?
- For fall-calving cowherds:
 - 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 synchronization protocols.
- Review your marketing strategy for cull cows.
 - Cows with a BCS ≥ 6.0 will still likely sell well with current market prices.
 - Look for opportunities to increase value by adding weight prior to market.
- Ensure bulls undergo breeding soundness exams prior to fall/winter service.
- Manage young and mature bulls during the offseason to ensure bulls are BCS ≥ 5.0 prior to the next season of use.

Calf Management

- If not already done, make arrangements to wean spring-born calves.
 - Finalize plans to either market calves or retain and add weight post-weaning.
 - If marketing calves, communicate your strategy to prospective buyers in advance.
- 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.
- If retaining calves post-weaning:
 - Review your nutrition plan.
 - Ensure you have sufficient forages available to match cowherd needs.
 - Closely observe feed and water intake the first few weeks.
 - Make sure all cattle have sufficient access to feed and water.
- Review/update your health protocols as needed for either weaned or new-born calves.
- Consider either supplementing fall-calving pairs or creep feeding fall-born calves to maintain calf performance on low-quality winter forages.
- For replacement heifers, manage your program to properly develop them prior to your given breeding time.

Forage/Pasture Management

- Make plans for controlling invasive species for the next growing season.
- Winterize water sources if applicable.
- Work on fencing/facility projects as time/weather allows.

General Management

- Develop and/or review your risk management plans for the coming year.
- Evaluate your short and long-term herd inventory goals with current conditions.
- Update lease arrangements as necessary.
- Schedule an annual meeting with your lender, insurance agent, and extension professional.
- Consider opportunities to lock prices in, if possible, for co-products and commodity feeds.
- Understand what nutrients you are targeting to purchase and price feeds on a cost per unit of nutrient basis.

What's New for Swine Producers

Effects of Dietary Crude Protein and Added Zinc on Nursery Pig Growth Performance and Fecal Dry Matter- A total of 360 weanling pigs (DNA 241 × 600; initially 12.0 ± 0.07 lb) were used in a 42-d growth trial to determine the effects of dietary crude protein and pharmacological levels of Zn (from ZnO) on nursery pig performance and fecal dry matter. Pigs were balanced for gender, stratified into three weight categories, and randomly allotted to pens. Pens of pigs were then assigned to one of six dietary treatments in a generalized randomized block design with five pigs per pen and 12 replicate pens per treatment. The treatments were in a 3 × 2 factorial arrangement with main effects of crude protein (low, medium, high) and Zn (110 or 3,000 mg/kg). Crude protein (CP) levels were low (20.5% in phase 1; 20% in phase 2), medium (22% in phase 1; 21.5% in phase 2), and high (23.5% in phase 1; 23% in phase 2). All basal diets contained 110 mg/kg Zn from ZnSO₄ and ZnO, which was added to reach 3,000 mg/kg where applicable. Diets were fed in three phases: phase 1 (d 0 to 10), phase 2 (d 10 to 25), and a common diet was fed to all pigs during phase 3 (d 25 to 42). During phase 1 (d 0 to 10), there was a quadratic CP × Zn interaction ($P = 0.035$) observed for F/G, where increasing CP in low-added Zn diets did not influence F/G. However, when CP increased in diets containing 3,000 mg/kg added Zn, a quadratic response was observed ($P = 0.035$) with the medium CP treatment having poorer F/G compared to the low and high CP diets. During phase 1, increasing CP decreased (linear, $P \leq 0.047$) ADG and ADFI, but there was no effect on F/G. During phase 2 (d 10 to 25), increasing CP tended to decrease ADFI (linear, $P = 0.063$), and F/G was improved (quadratic, $P = 0.005$) for pigs fed the medium CP diet. Pigs fed diets with added Zn had increased ($P \leq 0.033$) ADG and ADFI, with no effect on F/G. For the experimental period (d 0 to 25), ADFI decreased (linear, $P = 0.011$) and ADG tended (linear, $P = 0.100$) to decrease as dietary CP increased. Feed efficiency tended (quadratic, $P = 0.052$) to be improved for pigs fed the medium CP diets. Pigs fed pharmacological levels of Zn had greater ADG, ADFI, and improved F/G ($P \leq 0.002$) compared with those fed basal levels of Zn. During the common phase (d 25 to 42), pigs previously fed the medium CP diets had the lowest (quadratic, $P = 0.018$) ADG, and increasing the CP level worsened F/G (linear, $P = 0.045$; quadratic, $P = 0.051$). Pigs previously fed pharmacological levels of Zn tended ($P = 0.052$) to have decreased ADG, with no differences for ADFI or F/G. Overall (d 0 to 42), pigs fed the medium CP diets tended (quadratic, $P \leq 0.098$) to have decreased ADG and ADFI compared with those fed low or high CP diets. No differences were observed in F/G based on CP level. Pigs fed pharmacological levels of Zn in the experimental phase tended ($P = 0.066$) to have greater overall ADG, with no evidence of a difference for ADFI or F/G. A Zn × day interaction was observed ($P = 0.015$) for fecal DM, where pigs fed pharmacological levels of Zn had increased fecal DM on d 10 ($P < 0.001$) and d 25 ($P = 0.024$), but the magnitude of improvement was greater on d 10. In summary, there was minimal evidence of interactions between dietary CP and Zn level. In phase 1, pigs had greater ADFI and ADG with low CP diets, which also tended to be observed in the overall trial period. Pharmacological levels of Zn resulted in improvements in ADG, ADFI, and F/G during the experimental period. During the common period, pigs previously fed pharmacological Zn had lower ADG, which resulted in only a tendency for improved ADG for the overall trial period, with no overall difference in ADFI or F/G. More information is available on this study and others like it at KSUSwine.org. (This study conducted by Jentry J. Squires, Payton L. Dahmer, Joel M. DeRouchey, Julian Arroyave, Katelyn N. Gaffield, Jordan T. Gebhardt, Robert D. Goodband, Joana Magoga, Mike D. Tokach, and Jason C. Woodworth).

Effects of Diet and Water Monoglyceride and Acid Supplementation on Nursery Pig Performance- A total of 2,520 pigs (PIC 337 × 1050, initially 11.5 ± 0.22 lb) were used in a 42-d study to determine the effects of dietary and water-based monoglyceride and acid supplementation on growth performance of nursery pigs. Pigs were weaned at approximately 20 d of age and randomly allotted to pens. Pens of pigs were blocked by initial BW and allotted to one of six treatments in a randomized complete block design with 30 pigs per pen and 14 pens per treatment across two rooms. Treatment diets were formulated in three phases and fed based on a feed budget. The six treatments were arranged in a 2 × 3 factorial with main effects of acidifier supplementation in water (Control or Protaq Bond 50) and feed (Control, Acitra G20C, or Acitra G20C and Entero-Nova 410C). Protaq Bond 50 is a blend of organic acids and monoglycerides applied to the water source through the water medicator included at a rate to reach a target water pH of 4.0. Acitra G20C, a blend of organic acids, was included at 0.3% in phase 1, 0.15% in phase 2, and 0% in phase 3. Entero-Nova 410C, a blend of monoglycerides, was included at 0.3% in phases 1 and 2, and 0.1% in phase 3. Pigs were weighed and feed disappearance was measured every 7 d to determine ADG, ADFI, and F/G. From d 0 to 7, pigs provided water with Protaq Bond 50 had increased ($P < 0.001$) ADG and improved ($P < 0.001$) F/G compared to pigs provided control water. Over the entire 42-d period, there were no differences ($P > 0.10$) in ADG or ADFI for water or feed treatments. There was a tendency ($P = 0.098$) for a main effect of diet on F/G, where pigs fed Acitra G20C had the lowest numerical F/G and pigs fed the control diet had the highest numerical F/G. For mortality, there was a tendency ($P = 0.055$) for a water × diet interaction, where diet did not affect mortality in pigs provided the control water; however, when provided Protaq Bond 50 in the water, pigs fed Acitra G20C had numerically lower mortality, while pigs fed Acitra G20C and Entero-Nova 410C had numerically higher mortality compared to pigs fed the control. There were no differences ($P > 0.10$) in removals or total removals and mortality. In summary, pigs receiving Protaq water had improved ADG and F/G compared to pigs on the control water in the first 7 d post-weaning. Pigs fed a blend of organic acids had numerically improved F/G compared to pigs fed the control, but there was no further benefit when both organic acids and monoglycerides were included in the diet. The addition of monoglycerides and other acidifiers in feed or water had no effect on overall ADG, ADFI, removals, or total removals and mortality. More information is available on this study and others like it at KSUSwine.org. (This study conducted by Ty H. Kim, Jason C. Woodworth, Mike D. Tokach, Joel M. DeRouchey, Robert D. Goodband, Katelyn N. Gaffield, Jordan T. Gebhardt, Ying Chen, Mark Whitney).

ASI Faculty Highlight



Erin Beyer (erbeyer@ksu.edu or 832-276-3350)

Assistant Professor / Extension Specialist - Fresh Meat Quality and Cooked Meat Color

Dr. Erin Beyer, originally from Brookshire, Texas, earned her B.S. and M.S. from Texas Tech University. During this time, she was heavily involved in meat judging, and meat science quiz bowl as a student and as a coach. She participated in vast research and outreach projects in Lubbock, TX, New Zealand, Australia, and Malawi. Her thesis research focused on evaluating the effect of different protein sources on functional brain connectivity.

After completing her M.S., Erin worked for H-E-B Food Retailers, where she developed new private label products for their Own Brand department. However, Erin knew her dream was to work in academia, so she left H-E-B to pursue a Ph.D. in Animal Science from Kansas State University. She evaluated the impacts of cooking and freezing on the palatability of beef steaks while being heavily involved with undergraduate programs

such as meat judging, meat science quiz bowl, and meat animal evaluation. After graduating, she became an Assistant Professor of Meat Science at North Dakota State University. While at NDSU, she oversaw the meat judging program, taught a multitude of classes, and represented meat science in extension programs. Throughout her career at NDSU, Erin continued her research of understanding the impact of freezing and cooking on palatability and the intrinsic properties of beef steaks.

Erin returned to K-State in July 2024 as an Assistant Professor in Sustainable Fresh Meat Industry with a 60% extension and 40% research role. She is passionate about sharing meat science with youth and the general public. Her outreach efforts aim to provide resources for producers, extension agents, small meat processors, and industry leaders. Her research continues to focus on meat palatability, cooked meat color and the factors affecting its stability.

Outside of her professional work, Erin enjoys running, climbing mountains, and spending time with her corgis and family.



Ahmed Hammam (arhammam@ksu.edu or 785-532-1216)

Assistant Professor - Dairy Foods Processing

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 308), Food Products Evaluation (FDSCI 335), and Advanced Dairy Products Evaluation (ASI 435 & ASI 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. Dr. Hammam is also the coach of the Dairy Products Judging Team and the advisor of the Dairy Plant.

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