

Livestock County Fair Management Clinic

The biennial Livestock County Fair Management Clinic will be hosted virtually April 15 and 18, 2024. This clinic is designed for county fair board members, Extension agents, and volunteers involved in local livestock fair management and leadership. The program consists of a forum of open communication for individuals working with livestock at their local fairs. This program focuses on the livestock perspective of county fairs. K-State faculty, staff, fair board members, and extension agents will facilitate discussion directly related to livestock activities at local fairs in Kansas. The program is geared toward the input and participation of county fair board members, superintendents, and extension agents, so fair board members and superintendents are highly encouraged to attend! The program has been divided over two evenings, scheduled for 7-9 p.m., with different topics being covered each night. This year, each evening will open with a general session, followed by concurrent round table discussions. April 15 will include the Who's Who of County Fairs – Roles and Responsibilities and round table discussions on Insurance, Showmanship and the Round Robin, and Awards. The second night, on April 18 will include a session from the Kansas Department of Agriculture (KDA), followed by round table discussions on risk management, tagging and identification recommendations, and hosting a quality premium auction. It would be advantageous for counties to have several individuals attend to cover all the breakout sessions. The sessions will be recorded and available to attendees after the program. The program is free, but participants need to register online at https://kstate.qualtrics.com/jfe/form/SV_2nLMofH3IkeU182 by April 8. For more information, contact Joel DeRouchey (jderouch@ksu.edu or 785-532-2280), Lexie Hayes (adhayes@ksu.edu or 785-532-1264), or Kelsey Nordyke (knordyke@ksu.edu or 620-222-1311).

2024 State Livestock Nominations

The information for state livestock nominations has been released. The process transitioned to an online system in 2022, so there are no longer physical forms for families to complete and mail. Families will purchase DNA envelopes in advance, submit their animal and exhibitor information online, then mail their completed and signed DNA samples by the deadline. Extension Agents and FFA Advisors will approve nominations online. Exhibitors who nominated animals last year (in 2023) need to use their existing ShoWorks account. The first steps for families are to locate their KSU Family Name and Nomination Number, complete their 2024 Declaration Form, and having kids renew their YQCA certification. Market Beef nominations will be due May 1, with Small Livestock and Commercial Heifer due by June 15. The deadline to order DNA envelopes is 10 days prior to the deadline, which is April 20 and June 5, respectively. Information may be found under the "Nomination Information" tab on the youth livestock website: <http://bit.ly/ksunominations>.

HACCP Workshop Hosted in March

Implementing Your Company's HACCP Plan will be March 26-28, 2024, in Columbia, Missouri. Another course will be available June 4-6, 2024 in Manhattan, Kansas. These workshops use 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).

ASI Family & Friends Reunion Scheduled

Save the date for this year's K-State ASI Family & Friends Reunion to be hosted Saturday, October 5. Plan now to join us as we recognize Dr. Dell Allen and his wife, Joyce, as the 2024 Don L. Good Impact Award Winner. Watch for more details at asi.ksu.edu/familyandfriends and on social media.

Department of Animal Sciences and Industry
Kansas State University
218 Weber Hall, 1424 Claflin Road
Manhattan, KS 66506
785-532-6533 | asi@ksu.edu



Upcoming Events

March 16, 2024

K-State Junior Sheep Producer Day
Manhattan, KS

March 26-28, 2024

HACCP Course
Columbia, MO

April 6, 2024

KSU Open House and
Little American Royal

April 15 & 18, 2024

Livestock County Fair
Management Clinic

April 26, 2024

Midwest Meat Processing Workshop

April 27, 2024

K-State Wildcat Showdown

June 3-5, 2024

Champions Livestock Judging - Camp 1

June 4-6, 2024

HACCP Course
Manhattan, KS

June 5-8, 2024

K-State Animal Science
Leadership Academy

June 10-12, 2024

Champions Livestock Judging - Camp 2

July 12-13, 2024

Dr. Bob Hines Kansas Swine Classic

October 5, 2024

ASI Family & Friends Reunion

Upcoming Events

2024 Champions Livestock Judging Camps Planned

Save the date for this year's Champion Livestock Judging Camps hosted on June 3-5 and June 10-12 in Manhattan, Kansas. This camp is designed for 4-H and FFA members (ages 14-18), who are seriously interested in enhancing their livestock judging and oral communication skills. Both sessions will include one-on-one coaching with the current coaches and students on the K-State Livestock Judging Team with a heavy focus on reasons! Registration is \$350 and will open April 1. This is filled on a first-come, first-serve basis. For more information, visit asi.k-state.edu/judgingcamps or contact Rachael Stadel (rmkstadel@ksu.edu or 785-532-2996).

The graphic features the K-State University Livestock Judging Team logo on the left. The main text reads '2024 CHAMPIONS LIVESTOCK JUDGING CAMP'. Below this, it specifies 'CAMP ONE: JUNE 3-5 | CAMP TWO: JUNE 10-12'. Three key details are highlighted in separate boxes: '\$350 HOUSING & MEALS INCLUDED', '3 DAY CAMP WITH AN EMPHASIS ON ORAL REASONS', and 'APRIL 1 REGISTRATION OPENS'. At the bottom, it says 'Learn more at: asi.k-state.edu/judgingcamps'.

KASLA Applications Now Open

Applications are now available for the 2024 K-State Animal Science Leadership Academy (KASLA). The goal of this academy is to further develop young leaders within the livestock industry and prepare them for a successful future in this field. In 2024 the program will be June 5-8. This four-day session will focus on increasing knowledge of Kansas' diverse livestock industry as well as building participants leadership skills. Twenty high school students will be selected to participate based upon educational, community and agricultural involvement, as reflected through an application process. Applications must be postmarked by April 15, 2024. More information and the application form are available at: www.asi.ksu.edu/kasla. For questions about the academy, please contact Sharon Breiner, director, at sbreiner@ksu.edu.

2024 Wildcat Showdown

SAT | APRIL 27 | 2024



This year's Wildcat Showdown, a sheep and goat show, will be hosted on Saturday, April 27 at the Riley County Fairgrounds. Pre-entry is \$25, and the day of show \$35. Generators are recommended. Showing off trailer is strongly encouraged as there will be limited number of pens at \$10/pen. Health papers are required. For more information or the full schedule, contact Payton Dahmer (dahmerp@ksu.edu or 417-448-4934).

YQCA Certification Information

All youth who plan to exhibit in the Kansas State Fair Grand Drive and/or KJLS should complete the training at their earliest convenience. It is required for all exhibitors at both state shows. This is an annual training. Those submitting state livestock nominations must have completed their certification at the time of nomination and submit a copy of their completion certificate. Instructor-led trainings are \$3/child, while the web-based course is \$12/child. Youth who are 12 or 15-years-old by January 1 are eligible to test out. Only those two ages have the option to test out, as it is the first year of each age division. The YQCA staff has created resources to help guide families in registering for training and printing their completion certificates. They include Help Docs, as well as videos, which are posted on the YQCA Program website and linked to the KSU Youth Livestock Program page. For more information about YQCA certification, please visit www.yqcaprogram.org, contact your local extension office or Lexie Hayes at adhayes@ksu.edu.

Midwest Meat Processing Workshop

Plan to attend the Midwest Meat Processing Workshop on Friday, April 26, 2024, in Weber Hall room 111 on the K-State Campus. Join us at the workshop and see, hear and ask questions as state award winners share their expertise and demonstrate the manufacture and techniques used to make award winning products. Registration is \$100 per plant and includes lunch for two people and a parking permit for one vehicle. For more information, contact Dr. Liz Boyle (lboyle@ksu.edu or 785-532-1247).

Spring Shows and Local Youth Livestock Opportunities

Any county that has a youth livestock educational opportunity open to kids outside of the county is invited to share that information with Lexie Hayes (adhayes@ksu.edu). This includes spring shows, showmanship clinics, skillathons, field days, other related events, etc. These opportunities will be included on the youth livestock website, under the events tab. Information on the site will be updated as approved 2024 opportunities are received directly from extension units. Events, activities, and shows must be submitted by local KSRE professionals to be included on the website.

Jobs Available - Now Hiring

Professor-Assistant/Associate, Dairy Foods Processing and Innovation (Job #515982)- We are seeking applicants for a 12-month, tenure-track position (40% Teaching, 60% Research) at the rank of Assistant or Associate Professor (commensurate with experience) that will contribute primarily to our teaching and research missions in dairy foods processing within the Animal Sciences and Industry Department (ASI). The ASI Department is a national leader in teaching, research and outreach focused on animal and food sciences. ASI is home to the undergraduate Food Science & Industry degree program, which is accredited through the Institute of Food Technologists. The successful individual will be expected to develop a nationally recognized, externally funded research program in dairy food processing that is linked with a dynamic graduate research program. Teaching responsibilities will include Dairy Foods Processing & Technology (ASI 608) and other coursework consistent with the program's needs and the selected individual's interests. K-State is also home to the cross-disciplinary Food Science Institute (FSI) which provides many opportunities to participate in world-class interdisciplinary research, graduate training and teaching activities. Some of these opportunities involve agricultural security and sustainability, functional and healthy food systems, and the K-State Global Food Systems Initiative (<https://www.k-state.edu/research/global-food/>). Major facility construction and renovations are underway in the food/animal/grain science areas at K-State, including renovation of the K-State dairy processing plant, Call Hall Dairy Bar and research laboratories. Experience in creamery operations, fluid milk processing, and/or manufacture of dairy ingredients is desirable as the successful applicant will supervise the managers of these dairy foods facilities and use them in support of their program. To apply, go to <https://careers.k-state.edu/cw/en-us/job/515982/assistant-or-associate-professor>.

KSU Beef Cattle Research Center- Research Assistant (Job # 516431)- This is a full-time unclassified professional staff, term contract position. This position will function as part of the KSU Beef Cattle Research Center by conducting research and basic maintenance operations with undergraduate and graduate students related to growing and finishing cattle health and nutrition management. This position must be able to independently conduct and direct subordinates on specific tasks and ensure that all cattle are fed and water is available. All cattle are evaluated for potential illness, removed if necessary, appropriately treated as per protocol and returned to the correct pen. This position will ensure that all research data are correctly collected, entered into a spreadsheet and submitted for analysis. This position will ensure that the unit is in compliance with Institutional Care and Use Requirements and oversee the daily care of esophageal, ruminally and/or intestinally fistulated cattle located at the facility. This position will be able to communicate with cattle owners as needed and generate invoices in a timely manner. This position will order feed supplies and process hay in a timely manner. The incumbent may be expected to recruit and interview undergraduate students for labor and mentor their development in skills. To read more details and to apply, go to <https://careers.k-state.edu/cw/en-us/job/516431/research-assistant>

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>.

Jobs Available - Now Hiring

Professor-(Assistant/Associate) Animal Nutrition- (Job #516477)- We are seeking applicants for a 12-month, tenure-track faculty position (60% Teaching, 40% Research) that will be located in Manhattan, KS. The position will be available for either an Assistant or Associate Professor of Animal Nutrition with a preference for ruminant nutrition as the sub-discipline. The successful individual will contribute primarily to the department's land-grant missions in teaching and research. Teaching responsibilities will be consistent with the successful individual's training, interests, and needs of the Department, and expectations include teaching and advising both graduate and undergraduate students. The successful individual is expected to lead a productive research program in animal nutrition and participate in relevant interdisciplinary activities. The department is home to the full array of animal facilities dedicated to research and teaching that are all located in close proximity to campus. To read more details and apply go to <https://careers.k-state.edu/cw/en-us/job/516477/assistantassociate-professor-animal-nutrition>.

Professor- Assistant/Associate, Sustainable Fresh Meat Industry (Job # 516491)- We are seeking applicants for a 12-month, tenure-track faculty position (60% extension, 40% research). The position will be at the rank of Assistant or Associate Professor and located in Manhattan, KS. The successful individual is expected to develop an innovative extension and research program addressing issues facing the Kansas and U.S. meat industry in addition to contributing to the core missions of the Department. Support and collaboration with an interdisciplinary team with efforts related to sustainability research and extension programming consistent with team, ASI, COA, and K-State goals is expected. Research efforts will be consistent with the successful individual's expertise, interests, and needs of the Department. To read more details and to apply, go to <https://careers.k-state.edu/cw/en-us/job/516491/assistantassociate-professor-sustainable-fresh-meat-industry>.

Professor-Assistant/Associate, Sustainable Small Ruminant Production- (Job #516476)- We are seeking applications for a 12-month, tenure-track position (60% Extension, 40% Research, 15% Teaching). The position will be at the rank of Assistant or Associate Professor and located in Manhattan, KS. The successful individual is expected to develop an innovative and impactful extension program addressing issues facing the Kansas and U.S. small ruminant industry. The research focus will be consistent with the successful individual's expertise in small ruminants, and may include nutrition, physiology, meat science, genetics or other related disciplines. Teaching efforts will primarily focus on direct leadership for the 'Sheep and Meat Goat Science' undergraduate class, with the potential for development of other relevant courses of interest. To read more details and apply go to <https://careers.k-state.edu/cw/en-us/job/516476/assistantassociate-professor-sustainable-small-ruminant-production>.



Check out the monthly ASI headlines at <https://bit.ly/KSUASIHeadlines>

What's New for Beef Cattle Producers

Management Minute

“Send Everyone Home Safe”

Most of you reading this are likely involved in agriculture in some capacity. Would you consider agriculture to be a high risk industry?

The reality is that agriculture is a dangerous business. A recent report (12/2023) from the U. S. Department of Labor contains some staggering statistics and emphasizes the need for safety. In 2022, workers engage in farming, fishing and forestry had the highest fatal work injury rate among U.S. occupations with 23.5 fatalities per 100,000 full-time employees. A total of 5,486 fatal occupational injuries occurred in the U.S. in 2022 with 146 fatal injuries occurring among agricultural workers. Fatal work injuries due to contact with equipment and machinery (738) increased 4.7% from 2021 to 2022. These statistics are sobering. The need for safety in agriculture is real and present. When was your last discussion about safety with your family or employees? Now is the best time to have those discussions.

A quote from Dr. Keith Bolsen, K-State emeritus professor, comes to mind:

“Our number one goal is to send everyone home safe at night; if an operation isn't safe nothing else really matters.”

The full report from the U.S. Department of Labor may be accessed at

<https://www.bls.gov/news.release/pdf/cfoi.pdf>

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

Feedlot Facts

“What's in Feedlot Diet”

The commercial cattle feeding industry is incredibly diverse in many ways. A recent survey of consulting nutritionists conducted by Samuelson et al., (2016) gives us some insight into the feeding and management practices of the cattle feeding industry. This survey summarized responses from 24 consulting nutritionists that service in excess of 14 million cattle annually. As expected the primary grain used in both receiving and finishing diets was corn. However, the most commonly reported secondary grain used was wheat. The most common processing methods were steam-flaking and dry-rolling. The typical grain inclusion was 60% or less for receiving diets and 34.8% of the respondents reported an inclusion of 60-70% grain in finishing diets with a range of 50-90%. The reported range in grain inclusion of finishing rations is likely attributed to the use of byproduct feedstuffs. The most commonly used byproduct in both receiving and finishing rations was wet distiller's grain. Alfalfa was the most common roughage source used in receiving diets (58.5% of responses). In finishing diets corn silage was the primary roughage source used (37.5% of responses), followed by corn stalks (29.2% of responses) and alfalfa (20.8% of respondents). The majority of nutritionists in the survey recommend an energy content 0.68-0.70 Mcal/lb of Net Energy for gain and 13.4% crude protein in the finishing ration.

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



KSU Cow-Calf Checklist - March 2024

Management Considerations for May 2024

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

Cow Herd Management

- If cows are in marginal BCS (4.0 – 5.0) going into breeding, possibly consider:
 - Supplementing 2-3 weeks prior to and through 1st cycle.
 - Using monensin (200 mg/hd/day) in feed supplements.
 - Temporary calf removal or a CIDR to initiate estrus in anestrus females.
 - Early weaning if BCS doesn't improve during the season.
- Pregnancy check and cull fall calving cows, if not already done.
- With higher costs, it's important to closely manage salt and mineral programs.
 - Record date and amount of salt and mineral offered and calculate herd consumption.
 - If consumption is 2X the target intake, then cost will be too!
 - Properly store bags and pallets to avoid damage and product loss.
- Continue to provide high magnesium mineral formulas to cows grazing high risk forages: wheat, rye, triticale, oats, bromegrass, and other cool-season forages.
- Risk of grass tetany is greatest for lactating cows and older cows.
- The estrus synchronization planner (<https://www.iowabeefcenter.org/estrussynch.html>) is a helpful tool for scheduling synchronization protocols.
 - Order your AI supplies well prior to starting your protocols.
- Closely monitor bulls at the start of the breeding season for injury and to make sure they are aggressively covering cows.

Calf Management

- Calculate the value of gain relative to cost of gain for:
 - Implanting nursing calves and grass cattle.
 - Creep feeding nursing calves
- Finalize health protocols for spring-born calves and cattle going to summer grass.
- Consider supplementing or feeding replacement heifers for a period when initially turning to grass if they don't have post-weaning grazing experience and/or forage supply is limited.

General Management

- Reconsider stocking rates and turn-out dates for drought stressed pastures.
- Begin implementing early-season weed/invasive species control.
- Use the Management Minder tool on [KSUBeef.org](https://www.ksu.edu/ksu-beef) to plan key management activities for your cow herd for the rest of the year.
 - <https://cowweb.exnet.iastate.edu/CowWeb/faces/Index.jsp>
- Employ multiple strategies and chemistries for controlling flies and insects.
- With high feeder calf prices this spring, consider price risk management tools.
 - See recent article in March 2024 *Beef Tips* by Dr. Jennifer Ifft ([Managing Feeder Cattle Price Risk – Beef Tips](https://www.ksu.edu/ksu-beef)) - <https://enewsletters.k-state.edu/beeftips/>
- Make and evaluate important production calculations:
 - Calving distribution (% 1st cycle, % 2nd cycle, % 3rd cycle)
 - Calving interval
 - % calf crop (# calves weaned/# cows exposed for breeding) for calves born in fall 2023.

What's New for Beef Producers

Long-Term Effects of April, August, or October Prescribed Fire on Yearling Stocker Cattle Performance and Native Rangeland Plant Composition in the Kansas Flint Hills -The objective of our experiment was to determine if prescribed fire applied in April, August, or October influenced stocker growth performance or plant community characteristics in the Kansas Flint Hills over a 6-year period. A total of 1,939 yearling stocker cattle were assigned to one of three prescribed-burn treatments: spring (April 11 ± 5.7 days), summer (August 25 ± 6.2 days) or fall (October 2 ± 9.0 days) over a 5-year period. Calves were grazed from May to August for 90 days. Individual body weights were recorded at the start and end of the grazing season. Native plant composition and soil cover were evaluated annually in June using a modified step-point method.

The Bottom Line: Shifting prescribed fire from April to August or October reduced yearling stocker cattle weight gains by 10 to 14 lb during a 90-day grazing season. Ranchers are encouraged to consider the cost associated with herbicides versus the costs associated with reduced growth performance when developing a strategy for sericea lespedeza (*Lespedeza cuneata*) control. More information is available on this experiment and others in the KSU Cattlemen's Day report at KSUBeef.org. For more information contact KC Olson (kcolson@ksu.edu or 785-532-1254) or Dale Blasi (dblasi@ksu.edu or 785-532-5427). (This study conducted by Zachary M. Duncan, Alan J. Tajchman, Jack Lemmon, William R. Hollenbeck, Dale A. Blasi, and K. C. Olson.)

Reducing Tick Populations Through Prescribed Burning-Explore the effect of prescribed fire on tick population dynamics in the Kansas Flint Hills. Ticks were collected from spring (April), summer (August), or fall (September) burned pastures as well as control, unburned areas. Burning had been carried out for four consecutive years prior to this study. Tick populations were sampled every other week from March to August using material dragging and dry ice bait sampling methods. Tick species, sex, and life stage were identified morphologically and the total numbers for each burn treatment were calculated.

The Bottom Line: Consecutive burning of grazing pasture could be considered an effective tick control treatment to reduce tick abundance in cattle pastures and reduce the need for the use of chemical acaricides on Flint Hills prairie. More information is available on this experiment and others in the KSU Cattlemen's Day report at KSUBeef.org. For more information contact Cassandra Olds (colds@ksu.edu or 785-706-8599) or Jaymelynn Farney (jkj@ksu.edu or 620-820-6125). (This study conducted by Andrea Salazar, Herman Griese, Victoria Pickens, and Cassandra Olds.)

Comparing the Performance of Cattle Castrated Using Different Techniques Upon Arrival at the Feedlot -The purpose of this study was to determine the least detrimental castration technique in terms of growth performance when castrating cattle upon entry to the feedlot. Intact bulls were sourced from the Southeastern U.S. and received at the Kansas State University Beef Stocker Unit. After backgrounding, 700-lb bulls were castrated using various techniques, including banding, banding with splitting of the distal scrotum, use of the Henderson Tool, and use of a burdizzo clamp. A group of intact bulls served as a negative control group. Weights were obtained at regular intervals throughout the 56-day study to quantify and compare growth performance.

Results: The day 0 to day 56 average daily gain (ADG) showed no difference between treatment groups (P = 0.0643) but there was a trend for the Henderson group to gain at a lower rate than all other treatment groups. All other groups ended the 56-day study period with similar ADG. In addition, a trend was found for cattle castrated using the Henderson Tool to exhibit a lower activity time per hour than the other study groups for much of the day on average, as well as a greater number of minutes per hour ruminating on average. Jaw movement recorded as rumination was thought to be teeth grinding due to pain response and the lower amount of activity time would support this assessment. While the burdizzo group performed the best of all castrated groups, the labor-intensive process associated with applying the burdizzo clamp is not practical for cattle of this size. Cattle castrated using the band and band-cut methods performed better than those castrated using the Henderson Tool. The results of this study indicate that any castration technique that is surgical in nature is not ideal for castrating cattle at the feedlot.

The Bottom Line: Use of a latex band for castrating cattle at entry to the feedlot appears to be the technique least detrimental to growth performance. More information is available on this experiment and others in the KSU Cattlemen's Day report at KSUBeef.org. For more information contact A.J. Tarpoff (tarpoff@ksu.edu or 785-532-1255). (This study conducted by Tyler Blackwood, Tyler J. Spore, Michael D. Kleinhenz, William R. Hollenbeck, Dale A. Blasi, and A. J. Tarpoff.)

What's New for Swine Producers

Effects of Zinc Source and Level in Low ABC-4 Diets on Nursery Pig Growth Performance and Fecal

Characteristics- A total of 360 weanling barrows (DNA 200 × 400; initially 13.0 ± 0.07 lb) were used in a 38-d study to evaluate the effects of diets containing different levels of a novel Zn source (HiZox, Animine Precision Minerals, Annecy, France) and different levels of crude protein (CP) in low acid-binding capacity at pH 4 (ABC-4) diets on growth performance and fecal characteristics. Pigs were randomly assigned to pens (5 pigs per pen) and pens were assigned to 1 of 6 treatments with 12 pens per treatment. Diets were fed in 3 phases: phase 1 from d 0 to 10, phase 2 from d 11 to 24, and phase 3 from d 25 to 38. All diets were formulated to have low ABC-4. Treatment 1, the negative control (NC), was formulated to contain 150 ppm of Zn (HiZox) throughout the experiment (d 0 to 38). Treatment 2, the positive control (PC), was formulated to contain 3,000 ppm (phase 1) and 2,000 ppm (phase 2) of Zn (ZnO). Treatment 3 (low HiZox) contained 500 ppm (phase 1) and 300 ppm (phase 2) of Zn. Treatment 4 (low HiZox + low CP) was formulated similar to treatment 3 but contained lower CP (19.3% CP) than the NC, PC, low, and high HiZox treatments (21.3% CP). Treatment 5 (high HiZox) contained 800 ppm (phase 1) and 500 ppm (phase 2) of Zn. Treatment 6 (high HiZox + low CP) was formulated to be similar to treatment 5 but contained less CP (19.3% CP). In phase 3, all pigs were fed a common diet containing 150 ppm of Zn (HiZox) and 21.3% CP. For the experimental period (d 0 to 24), pigs fed high HiZox + low CP had poorer F/G ($P < 0.05$) than NC, PC, low HiZox, and high HiZox. In addition, ADG (quadratic, $P = 0.007$) and ADFI (quadratic, $P = 0.018$) increased as HiZox increased, and pigs fed diets with low CP were less feed efficient ($P = 0.043$) than those fed the same levels of HiZox but with high CP. Overall, pigs fed low CP diets had poorer F/G ($P = 0.041$) than pigs fed similar levels of HiZox with high CP. For fecal characteristics, pigs fed low CP had higher ($P = 0.008$) dry matter (DM) and an interaction between day and CP ($P = 0.040$) was detected for fecal scores with low CP diets improving stool consistency to a greater extent on d 10 than on d 23. In summary, increasing levels of HiZox improved performance of nursery pigs during phases 1 and 2, and pigs fed a regimen of 800 and 500 ppm of HiZox in the first 2 phases in low ABC-4 diets had similar performance to pigs fed pharmacological levels of Zn from ZnO in the overall period. Finally, pigs fed low CP diets had improved fecal characteristics, but poorer F/G throughout the nursery period. More information is available on this experiment and others in the KSU Swine Day report at KSUSwine.org. (This study conducted by Jonathan Riedmüller, Jamil E. G. Faccin, Alessandra R. Monteiro, Jürgen Zentek, Joel M. DeRouchey, Jordan T. Gebhardt, Robert D. Goodband, Jason C. Woodworth, and Mike D. Tokach.)

Evaluation of a Microencapsulated Form of Zinc Oxide on Weanling Pig Growth Performance, Intestinal Morphology, and Zinc Excretion

A total of 350 pigs (DNA 200 × 400; initially 13.31 ± 0.04 lb BW) were used in a 42-d study with 5 pigs per pen and 12 pens per treatment. At weaning, pigs were randomly allocated to pens and pens were randomly allotted to dietary treatments. Dietary treatments were: 1) negative control (standard nursery diet containing 110 ppm Zn from trace mineral premix); 2) control diet with 3,000 ppm added Zn in the form of ZnO in phase 1 and 2,000 ppm added Zn in the form of ZnO in phase 2 (High-ZnO); 3) control diet with 400 ppm added Zn in the form of ZnO in phases 1 and 2 (Low-ZnO); 4) 3,000 ppm added Zn in the form of microencapsulated ZnO in phase 1 and 2,000 ppm added Zn in the form of microencapsulated ZnO in phase 2 (High-MZnO); and 5) 400 ppm added Zn in the form of microencapsulated ZnO in phases 1 and 2 (Low-MZnO). Pigs were weighed and feed disappearance was determined to evaluate ADG, ADFI, and F/G. On d 10 and d 28, fecal samples from 3 pigs per pen were collected for fecal Zn concentrations. On d 28, 30 pigs (6 pigs per treatment) were euthanized, and small intestinal tissue was collected to evaluate morphology. There was no evidence of differences in ADG, ADFI, or F/G for the entire treatment period (d 0 to d 28; $P > 0.05$). During the common phase 3 (d 28 to 42) pigs fed the negative control, High-MZnO, or Low-MZnO had improved ($P < 0.0001$) ADG compared to pigs fed High- or Low-ZnO, which was driven by an increase in ADFI ($P < 0.0001$). For the entire experiment (d 0 to 42), pigs fed Low-ZnO or High-ZnO had reduced ($P < 0.0001$) ADG compared those fed the negative control. There was no evidence that small intestinal morphology differed significantly between treatments ($P > 0.05$). Finally, a significant treatment × day interaction ($P = 0.04$) was observed for fecal Zn concentrations, where pigs fed High-ZnO had greater fecal Zn levels on d 10 and d 28 compared to pigs fed all other treatments. More information is available on this experiment and others in the KSU Swine Day report at KSUSwine.org. (This study conducted by Payton L. Dahmer, Franco S. Matias-Ferreira, and Cassandra K. Jones.)



ASI Faculty Highlight



Katelyn Gaffield (gaffield@ksu.edu or 815-592-5189)

Assistant Research Professor - Swine Nutrition

Originally from Illinois, Katelyn completed her bachelor's degree in Animal Science at the University of Illinois. As an undergrad, she was heavily involved in undergraduate research and completed internships with Smithfield and Cargill which established her interest in graduate school. Katelyn completed her master's degree with a focus on meat science at the University of Illinois in 2021. During her master's, she focused on applied pork research including feeding high oleic soybean oil to growing-finishing pigs and its subsequent impact on growth performance, meat quality, and bacon characteristics.

Katelyn joined the Kansas State University Applied Swine Nutrition Team in August of 2021 for her PhD. Her research focused on in-feed acidifiers in nursery and finishing diets. This included studies investigating optimal feeding duration and inclusion levels using benzoic acid and sodium diformate. She also conducted a series of studies investigating soybean processing by-products including soybean gums and soapstocks. This involved conducting a large-scale industry survey across US soybean processing plants to evaluate by-product composition and variation as well as a nursery study investigating their use in swine diets.

In March, Katelyn started her position as an Assistant Research Professor in Swine Nutrition and has a 100% research appointment. Katelyn's position will primarily involve conducting applied swine nutrition research focused on improving profitability, efficiency, and sustainability for pork producers. This work includes addressing some of the industry's leading challenges as a part of the K-State Applied Swine Nutrition Team. Katelyn hopes to utilize her inter-disciplinary background to conduct collaborative, applied research that can directly benefit swine producers.



Umut Yucel (yucel@ksu.edu or 785-532-1208)

Associate Professor - Food Science

Dr. Umut Yucel was born and raised in Ankara, the capital of Turkey. His diverse research portfolio stems from his professional and educational background in food engineering, food biophysical chemistry, and analytical chemistry. He earned B.S. (2004) and M.S. (2006) degrees in Food Engineering from the Middle East Technical University (METU), Turkey, and M.S. (2010) and Ph.D.(2011) degrees in Food Science from the Pennsylvania State University. He continued his academic training as a Post-Doctoral Researcher at the Flavor Research and Education Center, University of Minnesota. In April 2014, he became an Assistant Professor of Food Engineering at METU. He joined the Department of Animal Sciences and Industry and the Food Science Institute at Kansas State University in March 2016 with research and teaching responsibilities.

Dr. Yucel is a food science scholar with areas of expertise in ingredient functionality for innovative food products, colloidal dispersions, soft materials and hydrogels, delivery and encapsulation of functional ingredients (e.g., antioxidants, antimicrobials, flavors, and probiotics), oleochemicals, free radical mechanisms, lipid oxidation, processomics and flavoromics in fermented products, and sustainable packaging films and coatings. His current research interests also generate knowledge for understanding the prevalence of emerging toxicants, such as microplastics and PFAS, in food products and agricultural resources (e.g., surface water, groundwater, soil), elucidate their mobility through the food supply chain, and develop mitigation strategies. In parallel with his research, his teaching portfolio includes a variety of undergraduate and graduate courses with in-person and online modalities, including Flavor Chemistry, Food Dispersions, Fermented Foods, Physical Methods in Food Analysis, and Quality Assurance of Food Products. Throughout his appointment, he has led researchers from various units at the College of Engineering, Agriculture, and Arts and Sciences to secure research funding from grantors, such as USDA, Kansas Department of Agriculture, NIH, and various commodity boards. He enjoys collaborating with private sector companies to validate technologies and provide technical expertise in solving problems related to product development, processing, food quality, and material characterization.

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