



News from KSU Animal Sciences

UPCOMING EVENTS...

- ✦ **State Market Beef Nominations Due May 1** - The 2019 state livestock nomination season has arrived! All market beef nominations are due by May 1, 2019. This includes market steers and market heifers. The deadline is a postmark deadline, but families are encouraged to submit their nominations as early as possible. Nomination information for all species may be found on the KSU youth livestock program website (<http://bit.ly/ksunominations>). In order to make sure nominations are complete upon initial submission, double check that all fields of the declaration form and nomination form(s) are complete, as well as the forms and DNA envelopes being signed by all parties. Please also cross-reference the tag numbers between the DNA envelopes and the specie nomination forms. All checks should be made payable to KJLS. There is a checklist for each species attached as a second page to the 2019 forms; the checklist does not need to be submitted, as it is only a reference tool for families. This is also a reminder that a YQCA certificate for each child needs to be attached to the Declaration Form, which means youth nominating market beef need to complete the training by May 1. For more information, contact Lexie Hayes (785-532-1264; adhayes@ksu.edu).
- ✦ The 2019 **Kansas Wildlife Habitat Education Program (WHEP) Contest** for Kansas youth will be hosted Thursday, May 2, in Manhattan. For the past 29 years, Kansas has held state wildlife habitat evaluation contests in which the winning team was eligible to advance to the national contest. The contest is about teaching young people about wildlife, the needs of wildlife, and their habitat. If you are interested in participating as a member of a team or as an individual in the 2019 contest, please contact Charles Lee, Extension Specialist, Wildlife, Room 131 Call Hall, 1530 Mid-Campus Drive North, Kansas State University, Manhattan, KS 66506, call 785-532-5734. A \$5 donation/fee is requested from each person to help defray lunch expenses. For more information, contact Charlie Lee (clee@k-state.edu or 785-532-5734).
- ✦ Plan to attend the **42nd Annual Midwest Meat Processing Workshop** on May 3, 2019, at K-State. Join us at the workshop to see, hear, taste and ask questions as state award winners share their expertise and demonstrate the manufacturing techniques used to make award winning products. Mark your calendar and watch for more details coming soon. For more information, contact Liz Boyle (lboyle@ksu.edu; 785-532-1247).
- ✦ **K-State Livestock Judging Camps scheduled** – The camp is a three-day, intense judging camp designed for 4-H and FFA members (ages 14-18) who are seriously interested in enhancing their livestock judging and oral communication skills. Prior livestock judging experience is necessary for this camp. Workouts will be conducted similar to those at a collegiate level. Chris Mullinix, KSU Livestock Judging Team Coach, will conduct the training for each camp. The camp will focus primarily on the proper format, terminology and presentation of oral reasons. Camp participants will also be exposed to livestock evaluation skills and incorporating performance records in the decision making process. The 2019 camps will be: June 3-5 (Monday-Wednesday); June 11-13 (Tuesday-Thursday); or June 14-16 (Friday-Sunday). For a complete schedule and registration information, visit <http://www.asi.k-state.edu/research-and-extension/youth-programs/judging-camps.html>. The registration deadline is May 20. For more information, contact Chris Mullinix (785-532-1917; cmullinix@k-state.edu).

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- ↪ **K-State Animal Sciences Leadership Academy** - Kansas State University will host the K-State Animal Sciences Leadership Academy June 5-8, 2019, for young livestock industry leaders. This four-day event will focus on increasing young leaders' knowledge of Kansas' diverse livestock industry as well as building participant's leadership skills. Students will stay in university housing with event staff for the duration of the event. Twenty high school students (current 9th-12th graders) will be selected to participate. For more information, visit <https://www.asi.k-state.edu/research-and-extension/youth-programs/k-state-animal-science-leadership-academy/> or contact academy director, Sharon Breiner at sbreiner@ksu.edu.
- ↪ The **KSU Youth Horse Judging Camp – Beginning Section** will be June 10, 2019. This camp is designed for youth with little to no experience judging horses. Emphasis will be focused on the placings of classes commonly seen at horse judging contests and the basics of oral reasons. Classes covered include stock type halter, western pleasure and hunter under saddle. The camp will be hosted in Weber Arena on the KSU Campus. Registration for must be paid by May 10, 2019. For more information, visit the website <http://www.asi.k-state.edu/research-and-extension/youth-programs/judging-camps.html>. You can also contact James Lattimer, (785-532-2840; jlattimer@ksu.edu).
- ↪ The **KSU Youth Horse Judging Camp – Advanced Section** will be June 11-12, 2019. This camp is designed for youth with some experience judging horses and who would like to enhance their evaluation and oral reasons skills. Individual coaching and mentorship will be used to challenge the student to continually improve throughout camp. Classes covered include stock type halter, western pleasure, hunter under saddle, hunter hack, horsemanship/equitation, trail, and reining. Housing will be in the KSU Dorms. The camp will be hosted in Weber Arena on the KSU Campus. Registration must be paid by May 10, 2019. For more information, visit the website <http://www.asi.k-state.edu/research-and-extension/youth-programs/judging-camps.html>. You can also contact James Lattimer, (785-532-2840; jlattimer@ksu.edu).
- ↪ **Developing and Implementing a HACCP Plan for Meat and Poultry Workshop** will be June 11-13, 2019, in Weber Hall, Kansas State University, Manhattan, KS. This three-day workshop uses curriculum recognized by the International HACCP Alliance for meat and poultry processors and is led by an International HACCP Alliance Lead Instructor. The workshop fee is \$450 per person, and participants will be presented with a certificate with an International HACCP Alliance seal upon completion of the course. Registration is limited to 25 participants. For more information, contact Dr. Liz Boyle (lboyle@ksu.edu; 785-532-1247). Registration is online at <http://haccp.unl.edu>.
- ↪ The **2019 Dr. Bob Hines Kansas Swine Classic** is scheduled for June 28-29, 2019, at CiCo Park in Manhattan. This two-day event includes educational workshops, showmanship contest, and a prospect and market hog show. It is open to all Kansas youths ages seven through 18 as of January 1, 2019.
- This year's Classic will feature a swine photography contest along with a swine skillathon. For the swine photography contest, youth may submit up to two swine photos. Photos should be "8x10" size and should not be framed or matted. Photos will be placed in plastic sleeves and displayed throughout the weekend.
- Entries must be postmarked by June 15, 2019. More information and registration will be coming soon to www.KSUswine.org. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu) or Lexie Hayes (785-532-1264; adhayes@ksu.edu).
- ↪ The **first annual Poultry Day and Pullet Sale** will be held on June 29, 2019. The events will be located at Stanley Stout Center, 2200 Denison Avenue, Manhattan, KS. The Poultry Day events will include a presentation on "How to Manage Your New Pullets" at 11:30 am, followed by an omelet lunch at noon. After lunch, there will be presentation on "Health Care for Small Flocks" at 1:30 pm. Dr. Scott Beyer, KSU Extension Poultry Specialist, will be there to help with all your questions about keeping small poultry flocks. The events are open to all poultry-keeping enthusiasts. No purchase of pullets is required to attend the workshop. There are no charges for the Poultry Days presentations or lunch; however, reservations are required by using the online form at: <https://www.asi.ksu.edu/pulletsale>. Forms may be emailed to poultry@ksu.edu. Reservations may also be made by contacting Kevin Snell at 785-532-1281.

- ↳ During Poultry Day, KSU students will also be holding their **Annual Pullet Sale**. Egg-type pullets raised by the students may be picked up from 9 am to 3 pm, June 29 at the Stanley Stout Center, 2200 Denison Avenue, Manhattan. KSU students have raised these pullets for spring class projects and they will be ready-to-lay (16-17 weeks old) and fully vaccinated. Our brown birds are great yard birds, tame and friendly but will lay more brown shelled eggs. They are a hybrid type that will look similar to a New Hampshire Red. We also have a white feathered, white egg shell type hybrid, a bit smaller and less friendly, but will produce the most eggs possible on the least amount of feed. We will have a limited supply on a first-come, first-sold basis. A description of the bird types and prices can be found at <https://www.asi.ksu.edu/pulletsale>. All pullets must be pre-ordered. For questions about the pullet sale, email poultry@ksu.edu or call the farm at 785-539-5041.
- ↳ **Local Youth Livestock Opportunities** - Any county that has a youth livestock educational opportunity open to Kansas youth 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, etc. These opportunities may be shared from a representative of the local extension office and will be posted on the youth livestock website.
- ↳ **YQCA Requirement for 2019 State Shows** – Youth for the Quality Care of Animals (YQCA) is a new, national, multi-species youth livestock quality assurance program that focuses on food safety, animal well-being, and character development, through age-appropriate educational curriculum for youth 8-21 years of age. This program is an annual certification that grows with a young person, so the learning modules are different every year. ALL exhibitors are required to be YQCA certified in order to participate in the 2019 Kansas State Fair Grand Drive and/or Kansas Junior Livestock Show (KJLS). This includes youth who will be showing market animals, commercial breeding females, and/or registered purebred breeding females. Since the program is designed to be a national standard for youth, ages 8 and older, 7-year-olds who will be participating in KJLS are exempt from completing this requirement. Families need to attach copies of each child's YQCA certificate to their Declaration Form at the time of nomination. More information may be found on the K-State Youth Livestock website, under Youth Livestock Quality Assurance, by contacting the local extension office, or via Lexie Hayes at adhayes@ksu.edu or 785-532-1264.
- ↳ October 4, 2019, is the date set for the **5th Annual ASI Family and Friends Reunion**. This year we will be honoring the Kansas Livestock Association with the Don L. Good Impact Award. Watch for more details coming soon.

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
May 1, 2019	Market Beef Nominations due	
May 2, 2019	Wildlife Habitat Education Program Contest	Manhattan
May 3, 2019	Midwest Meat Processing Workshop	Manhattan
June 3-5, 2019	K-State Livestock Judging Camp	Manhattan
June 5-8, 2019	K-State Animal Sciences Leadership Academy	Manhattan
June 10, 2019	KSU Youth Horse Judging Camp – Beginning Section	Manhattan
June 11-12, 2019	KSU Youth Horse Judging Camp – Advanced Section	Manhattan
June 11-13, 2019	HACCP Plan for Meat and Poultry Workshop	Manhattan
June 11-13, 2019	K-State Livestock Judging Camp	Manhattan
June 14-16, 2019	K-State Livestock Judging Camp	Manhattan
June 15, 2019	Small livestock nominations due (includes commercial heifers, market swine, commercial gilts, market lambs, commercial ewes, and meat goats)	
June 28-29, 2019	Dr. Bob Hines Kansas Swine Classic	Manhattan
June 29, 2019	KSU Poultry Day and Pullet Sale	Manhattan
August 24-25, 2019	Kansas 4-H Livestock Sweepstakes	Manhattan
October 4, 2019	ASI Family and Friends Reunion	Manhattan

WHAT'S NEW.....

↵ **Management Minute** – Justin Waggoner, Ph.D., Beef Systems Specialist

“Leadership Styles”

The most commonly recognized leadership styles are authoritarian, democratic and laissez-faire. However, there may be seven to twelve different leadership styles that include styles such as transformational, transactional, servant, charismatic, and situational. Although some of these leadership styles are unique, there is also some degree of similarities or overlap as well and in some cases, a leader may change their leadership styles to fit the situation (situational). The concept of situational leadership was first recognized by Paul Hersey and Ken Blanchard (author of the “One Minute Manager”). They recognized that successful leaders often adapted their leadership style or styles to the individual or group they were leading. Collectively these different leadership styles remind us that leadership is complicated and we still have a lot to learn about leadership.

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

↵ **Feedlot Facts** – Justin Waggoner, Ph.D., Beef Systems Specialist

“The Impacts of a Tough Winter”

One of the common topics of discussion, regardless of what segment of the beef industry you operate in has been winter and the collective impacts of a winter that was wetter and colder than most of us in Kansas and to some extent the Central United States are accustomed to. Although, green is slowly replacing the brown in the pastures, the effects of this winter in the cattle industry may be felt for longer than many of us would like. The combination of wet and cold conditions increases energy expenditures and maintenance energy requirements of the animal.

In the feeding sector cattle performance, most notably feed conversion (lbs. feed: lbs. gain) increases. In the March Focus on Feedlot report, (February closeouts) the average steer feed conversion was 7.08 lbs. feed: lb. gain. In February 2018, the average steer feed conversion was 6.15, lbs. feed: lb. gain. Thus, 0.93 more lbs. of feed (15%) were required to produce a pound of live weight gain in steers marketed in February of 2019 versus 2018. More feed ultimately results in higher cost of gains and lower profit potential. Overall steer death loss was similar at 1.68% in February 2019 and 1.97 in 2018. Feed conversion will likely remain high for next two to three months and death losses could foreseeably trend upward as cattle placed on feed during the coldest months may have experienced greater health risk and cold stress early in the feeding period.

In the cow-calf sector, winter conditions have resulted in cows that may be lacking condition or replacement heifers that are lighter than they would normally be under normal conditions. Body condition and plane of nutrition drives reproductive performance, which is one, if not the, most important determinant of productivity/profitability on a cow-calf operation. It takes longer for thin cows to begin cycling, which means that thin cows are at greater risk of being open and if cows do begin cycling they will be bred toward the end of the 2019 breeding season and subsequently calve later in 2020. Later calving typically results in younger, lighter calves at weaning, which ultimately results in less pounds of sale weight and dollars being generated by those cows in the Fall of 2020.

A large part of managing cattle is responding to weather conditions be it a cold, wet winter or drought. Cattle feeders may adjust market endpoints and cow-calf producers may consider adjusting breeding seasons, early weaning, or other ways to add additional market value to calves. The good news is the days and nights are getting warmer, and every day brings us closer to summer.

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

↪ The Department of Animal Sciences and Industry at Kansas State University is seeking applicants for the position of **Animal Technician II - Dairy Unit**. This position is a Full-time, University Support Staff (USS) position (job no 506983). This position exists to provide complex care for dairy cattle, perform medical procedures, obstetrical and postnatal care of animals, some artificial insemination, milking and feeding. Maintenance and operation of farm equipment is also included. Screening begins immediately and continues until the position is filled. For more information, contact Mike Scheffel, Search Committee Chair, at 785-537-0941 or scheffel@k-state.edu. To apply, go to <http://careers.k-state.edu/cw/en-us/job/506983/animal-technician-ii>.

↪ **Quality Grade Has No Effect on Top Sirloin Steaks Cooked to Multiple Degrees of Doneness** – The objective of this study was to evaluate the effect of cooking top sirloin steaks from four quality grades to multiple degrees of doneness (rare, medium, well-done) on beef palatability traits. Beef top sirloin butts (n = 60; 15/quality grade) from four U.S. Department of Agriculture quality grades [Prime, Top Choice (Modest and Moderate marbling), Low Choice, and Select] were selected from a Midwest beef processor. Top butts were transported to the Kansas State University Meat Laboratory, fabricated into 1-in steaks, vacuum packaged, and aged for 28 days at 39.2°F. Following aging, steaks were frozen until cooked for consumer sensory analysis and Warner-Bratzler shear force.

Bottom Line... These results indicate that quality grade has no effect on the eating quality of top sirloin steaks. Therefore, it is unnecessary for consumers, retailers, and foodservices to pay premium prices for higher quality top sirloin steaks, regardless of the degree of doneness they will be cooked to. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Travis O'Quinn (travisquinn@ksu.edu; 785-532-3469) or Terry Houser (houser@ksu.edu; 785-532-1253).

↪ **Standardized Total Tract Digestible Phosphorus Requirement of 13- to 28-lb Pigs Fed Diets With or Without Phytase** - A total of 1,080 nursery pigs were housed in three commercial research rooms and used in a 46-d study to determine the effects of increasing standardized total tract digestible (STTD) phosphorus (P) concentrations in diets with and without phytase on growth performance and percentage bone ash. Pens of pigs (10 pigs per pen, 9 pens per treatment) were balanced for equal pen weights and allotted randomly to one of 12 treatments. Dietary treatments were arranged in two sets of dose titration with six levels of STTD P with and without 2,000 phytase unit (FYT) of phytase. The STTD P levels were expressed as percentage of the NRC (2012) requirement estimates (0.45 and 0.40% for phases 1 and 2, respectively) and were: 80, 90, 100, 110, 125, and 140% of NRC in diets without phytase and 100, 110, 125, 140, 155, and 170% of NRC in diets with phytase. Diets were provided in three phases, with experimental diets fed during phase 1 (d 0 to 11) and phase two (d 11 to 25), followed by a common phase 3 diet from d 25 to 46. On d 25, 1 median-weight gilt from each pen was euthanized and radius samples were collected for analysis of bone ash. During the treatment period (d 0 to 25), increasing STTD P from 80 to 140% of NRC in diets without phytase improved average daily gain (ADG), average daily feed intake (ADFI), and feed efficiency (F/G). Estimated STTD P requirement in diets without phytase was 117 and 91% of NRC for maximum ADG according to quadratic polynomial (QP) and broken-line linear (BLL) models, respectively, and ranged from 102 to >140% of NRC for maximum feed efficiency using BLL, broken-line quadratic, and linear models. When diets contained phytase, increasing STTD P from 100 to 170% of NRC improved ADG and F/G. Estimated STTD P requirement in diets containing phytase was 138% for maximum ADG (QP model) and was 147 (QP model) and 116% (BLL model) of NRC for maximum feed efficiency. Increasing STTD P increased percentage bone ash regardless of phytase addition. Comparing diets containing the same STTD P levels, adding phytase improved ADG, ADFI, and F/G.

Bottom Line... In summary, estimated STTD P requirements varied depending on the response criteria and statistical models and ranged from 91 to >140% of the NRC in diets containing no phytase, and from 116 to >170% of NRC for diets containing 2,000 FYT phytase. The high dose of phytase promoted growth performance and improved the dose responses to dietary STTD P for ADG and feed efficiency in 13- to 28-lb nursery pigs. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by F. Wu, J.C. Woodworth, M.D. Tokach, J.M. DeRouche, S.S. Dritz, and R.D. Goodband)



Effects of Distillers Dried Grains with Solubles Sources and Soybean Meal Level on Growth

Performance of Late Nursery Pigs - Two experiments were conducted to determine the effects of distillers dried grains with solubles (DDGS) source and soybean meal (SBM) level on growth performance of late nursery pigs. A total of 1,064 and 1,011 pigs, initially 23.1 and 24.1 lb body weight (BW), were used in Exp. 1 and 2, respectively, with 21 to 27 pigs per pen. For approximately 21 days after weaning, pigs were fed common phase 1 and 2 diets. Then, pens were assigned to treatments in a randomized complete block design. There were six treatments in each experiment with seven pens per treatment. Treatments 1 to 5 were replicated in Exp. 1 and 2, whereas treatment 6 was fed only in Exp. 1 and treatment 7 was fed only in Exp. 2. Treatments 1 to 3 consisted of diets with 23% conventional DDGS (Valero, Aurora, SD) and 21, 27, or 35% SBM. Treatments 4 and 5 were corn-SBM-based diets with 27 or 35% SBM. Treatment 6 consisted of a corn-SBM-based diet with 20% high protein DDGS replacing the 23% conventional DDGS with the same amount of SBM (21%) as treatment 1 and same neutral detergent fiber (NDF) as treatment 2. Finally, treatment 7 consisted of a diet similar to treatment 2 but with 23% Lincolnway DDGS (Lincolnway Energy, LLC, Nevada, IA) replacing the 23% conventional DDGS. Data were analyzed with the GLIMMIX procedure of SAS. There was no evidence for treatment x experiment interactions, thus data from treatments 1 to 5 were combined. In Exp. 1, pigs fed diets containing HP DDGS had decreased average daily gain (ADG) and poorer feed-to-gain ratio (F/G) compared to pigs fed diets with conventional DDGS at the same NDF level, conventional DDGS at the same SBM level, or corn-SBM diet. In Exp. 2, there was no evidence for differences in performance of pigs fed diets with Lincolnway DDGS or conventional DDGS. Feeding diets with 23% conventional DDGS decreased average daily feed intake (ADFI) and improved F/G compared to corn-SBM-based diets. Finally, ADG increased and F/G improved as SBM level increased from 21 to 35%.

Bottom Line... In conclusion, decreased growth performance indicates that the nutrient profile of the HP DDGS may have been overestimated. The net energy of conventional and Lincolnway DDGS seemed to be underestimated due to the improved F/G compared to corn-SBM diets. Finally, feeding diets with increasing SBM resulted in improved growth performance in late nursery pigs. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by H.S. Cemin, M.D. Tokach, A.M. Gaines, B.W. Ratliff, E.L. Hakmiller, S.S. Dritz, J.C. Woodworth, J.M. DeRouchey, and R.D. Goodband)



The Effect of Phase-Feeding Strategies on Growth Performance and Carcass Characteristics of Growing Finishing Pigs: II. Field Approach on Lysine Levels

The objective of this study was to evaluate phase-feeding strategies for grow-finish pigs under commercial research conditions and using a field approach with lysine levels slightly below the pig's requirement estimates for maximum growth performance. A total of 1,100 pigs were used in a randomized complete block design with 25 pigs per pen and 11 pens per treatment. Treatments consisted of four feeding programs: a 1-phase feeding program with 0.79% standardized ileal digestible (SID) lysine from 60 to 280 lb BW; a 2-phase feeding program with 0.91 and 0.72% SID lysine from 60 to 220 and 220 to 280 lb BW, respectively; a 3-phase feeding program with 1.07, 0.85, and 0.72% SID lysine from 60 to 110, 110 to 220, and 220 to 280 lb BW, respectively; and a 4-phase feeding program with 1.07, 0.91, 0.79, and 0.72% SID lysine from 60 to 110, 110 to 160, 160 to 220, and 220 to 280 lb, respectively. The lysine levels were determined based on the estimated lysine requirements to achieve 98.5% of maximum growth rate for the weight range in each phase, using an equation developed by the genetic supplier. The experimental diets were based on corn, distillers dried grains with solubles (DDGS), and soybean meal. Overall, from d 0 to 119, pigs fed the 1-phase feeding program had decreased average daily gain (ADG) compared to those fed the 4-phase feeding program, with 2- and 3-phase feeding programs intermediate. The 1-, 2-, and 3-phase feeding programs resulted in poorer feed efficiency (F/G) compared to the 4-phase feeding program, with the poorest F/G observed in pigs fed the 1-phase feeding program. Final BW and hot carcass weight (HCW) were lower in pigs fed the 1-phase program compared to the 4-phase program, with 2- and 3-phase programs intermediate. No evidence for differences was observed across the feeding programs for average daily feed intake (ADFI), carcass yield, backfat thickness, loin depth, or percentage lean. For economics, income over feed costs (IOFC) per pig was increased in the 4-phase program compared to the 1-phase program, with the 2- and 3-phase feeding programs intermediate.

Bottom Line... In conclusion, phase-feeding strategies provide advantages in growth performance and economics over feeding a single diet throughout the grow-finish phase. Moreover, simplification of feeding programs to two or three dietary phases with lysine levels slightly below the requirement estimates (98.5% of maximum growth rate) have negative implications on overall feed efficiency compared to a feeding program with four dietary phases. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by M.B. Menegat, S.S. Dritz, M.D. Tokach, J.C. Woodworth, J.M. DeRouchey, and R.D. Goodband)

ASI Faculty Spotlight



Umut Yucel (yucel@k-state.edu; 785-532-1208)

Assistant Professor/Chemistry and Physical Chemistry of Foods

Dr. Umut Yucel earned B.S. (2004) and M.S. (2006) degrees in Food Engineering from Middle East Technical University (METU), Turkey, and M.S. (2010) and Ph.D. (2011) degrees in Food Science from 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 was appointed as an Assistant Professor at the Food Engineering Department, METU of his hometown. He joined the Department of Animal Sciences and Industry and the Food Science Institute at Kansas State University in March 2016 as an Assistant Professor with teaching and research responsibilities.

Dr. Yucel is a food chemist and physical chemist with an emphasis on food emulsions, colloids and nano-particles. More specifically, his research area focuses on design and development of emulsion-based colloidal systems, which can serve as delivery systems for bioactive foods components, such as flavors, essential oils and other phytochemicals, to improve their effectiveness (high bioavailability and controlled release profiles) and efficiency (enhanced stability during processing and storage) in foods. In parallel, his research interests involve understanding the nature of micro-scale interactions and dynamics of small molecules in a complex food environment that define food structure and biochemical functionality. In order to study aforementioned systems he is applying novel and non-invasive food materials characterization techniques, such as low-intensity ultrasound, electron paramagnetic resonance spectroscopy, in addition to more conventional spectroscopic and analytical methods. His teaching responsibilities include food processing unit operations, functionality of foods and physical chemistry of foods.



Lindsey Hulbert (lhulbert@k-state.edu; 785-532-0938)

Assistant Professor/Comprehensive Stress Physiology, Behavior and Immunology

Dr. Lindsey Hulbert grew up in the southwest (AZ, NM) then began her career in animal physiology and behavior in Lubbock, TX, through an undergraduate research program at Texas Tech University. Her first research projects involved understanding how housing and management conditions affect the behavior and stress responses in swine. Her research evolved into how stress affects the health and immune systems in other species, including laboratory rodents, beef and dairy calves, and poultry. She also worked for the USDA-Agriculture Research Services, Livestock Issues Research Unit in Lubbock, TX. Dr. Hulbert was a post-doctoral at the University of California, Davis

before moving to KSU in January of 2013. Dr. Hulbert's research team studies include:

- Development and validation of automated technologies to monitor health and welfare of domestic animals;
- Understanding the effects of early-life stressors on nutritive and non-nutritive oral behaviors and immunity in calves; Improving resilience to stressors and immunocompetence through housing, management, and feeding strategies in calves and pigs;
- Determining biomarkers of stress and inflammation for predicting and identifying disease.

Dr. Hulbert has a passion for animals, science, and training students. In addition, she enjoys spending time with her family and her hobbies include Zumba and Salsa.

What Producers Should Be Thinking About.....

WHAT PRODUCERS SHOULD BE THINKING ABOUT IN JUNE.....



BEEF -- *Tips by Dale Blasi, Extension Beef Specialist*

June is a month to let Mother Nature take her course. **Assuming timely precipitation**, native grasses are usually at peak production; therefore, little supplementation is needed, with the exception of some minerals.

Cow-Herd Nutrition

- Provide plenty of clean, fresh water.
- Provide free-choice minerals to correct any mineral deficiencies or imbalances.
- Monitor grazing conditions and rotate pastures if possible and practical.
- Consider creep-feeding if it's cost-effective.

Herd Health

- Monitor and treat pinkeye cases.
- Provide fly control. Consider all options; price and efficiency will dictate the best options to use.
- Monitor and treat for foot rot.
- To reduce heat stress, avoid handling and transporting cattle during the hottest times of the day.

Forage and Pasture Management

- Check and maintain summer water supplies.
- Place mineral feeders strategically to enhance grazing distribution.
- Check water gaps after possible washouts.
- Harvest hay in a timely manner; think quality and quantity.

Reproductive Management

- If using AI, do not expect all females to conceive. A common practice is to breed once or twice with AI, then turn out cleanup bulls for the balance of a 65-day breeding season. A 42-day AI season with estrus synchronization at the front end gives most females three chances to conceive by AI.
- Watch bulls for libido, mounting and breeding function.
- Record breeding dates to determine calving dates.
- By imposing reproductive pressure (45-day breeding season) on yearling heifers, no late-calving 2-year-olds will result. This will increase lifetime productivity and profits.

Genetic Management

- Monitor herd performance. Then identify candidates to cull because of poor performance.

General Management

- Check equipment (sprayers, dust bags, oilers, haying equipment, etc.), and repair or replace as needed. Have spare parts on hand because downtime can make a big difference in hay quality.

*We need your input! If you have any suggestions or comments on **News from KSU Animal Sciences**, please let us know by e-mail to lschrein@ksu.edu or phone 785-532-1267.*