



News from KSU Animal Sciences

- ✦ It's not too late to attend the **KSU Beef Stocker Field Day to be hosted September 19** - The 20th anniversary of the KSU Beef Stocker Field Day will be Thursday, September 19, at the KSU Beef Stocker Unit in Manhattan. The event will begin at 9:30 a.m. with registration and coffee. The day will conclude with a good old-fashioned Prairie Oyster Fry and Call Hall ice cream. Pre-registration is \$25 and due by September 10. For complete details, visit www.KSUbeef.org. For more information, contact Dale Blasi (dblasi@ksu.edu; 785-532-5427).

- ✦ **Developing and Implementing Your Company's HACCP Plan** for meat, poultry and juice processors will be October 2-4, 2019, in Olathe, KS. Information and registration for the 2.5 day International HACCP Alliance accredited workshop is online at <http://haccp.unl.edu>. For more information, contact Dr. Liz Boyle at lboyle@ksu.edu or 785-532-1247.

- ✦ Join us for the 5th annual **ASI Family and Friends Reunion on Friday, October 4, 2019**, from 5:30 – 9:30 p.m. at the Stanley Stout Center, 2200 Denison Avenue, Manhattan, Kansas. Last year's event was truly amazing with more than 1,000 family and friends reuniting at the event. The Don L. Good Impact Award will be presented to the Kansas Livestock Association. All Don Good faculty hires have been invited back for the fifth reunion. Other activities will include great food, live music, Junior Wildcat Barnyard, no fundraising and more surprises!! A tentative schedule includes:
 - 5:30 p.m. **ASI Family & Friends Reunion is OPEN!**
All event attractions remain open throughout the evening
 - 7:20 p.m. **"Pride of Wildcat Land" Band Performance**
 - 7:40 p.m. **WILDCAT WALK**
Stroll through the aisle formed by the band into the Stout Center
 - 7:55 p.m. **Star Spangled Banner (Inside the Stout Center)**
 - 8:00 p.m. **Don L. Good Impact Award presented to Kansas Livestock Association**
 - 9:10 p.m. **Jr Wildcat toy drawing (must be present to win)**
Justin Janssen & Kyle Bauer, LMIC Board Members
 - 9:30 p.m. **Event attractions close - Travel safe!**Registration is \$25 for adults; \$10 for students (13 and over); and free for those 12 and under. Early registration is due by September 20. For more information, visit www.asi.ksu.edu/familyandfriends. If you have questions, contact Lois Schreiner at lschrein@ksu.edu or 785-532-1267.

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↳ **Make plans now to attend the 2019 KSU Swine Day.** The 2019 KSU Swine Day will be hosted Thursday, November 21, at the KSU Alumni Center. The schedule for the day includes:

- 8:00 a.m. – 4:00 p.m. Trade Show
- 9:15 a.m. Welcome
Dr. Mike Day, Department Head, Animal Sciences and Industry
- 9:30 a.m. Latest update on K-State Applied Swine Nutrition Research: 15-minute rotation including topics on Swine Nutrition, Management and Feed Processing
K-State Swine Faculty
- 11:30 a.m. Lunch with Trade Show
- 1:30 p.m. Decision Processes and Implementing a Nutritional Program in an Integrated System
Dr. Josh Flohr, Seaboard Foods, Guymon, Oklahoma
- 2:30 p.m. What the Canadian Industry is Doing to Prevent an ASFV Incursion
Dr. Egan Brockhoff, Prairie Swine Health Services, Alberta, Canada
- 3:00 p.m. Question and Answer Session
- 3:30 p.m. Reception with Call Hall Ice Cream

Pre-registration fee is \$25 per participant by November 12, with registration at the door \$50 per participant. There is no charge for any students if they are pre-registered. The complete schedule and online registration information can be found at www.KSUswine.org. For more information, contact Lois Schreiner at lschrein@ksu.edu or 785-532-1267.

↳ **Youth for the Quality Care of Animals (YQCA)** is a national, multi-species youth livestock quality assurance program that was launched in 2017. Youth may participate in the program online or through a face-to-face class with a certified instructor. This is a fee-based program, which is \$12/child for the online course or \$3 for a face-to-face session. Kansas will be renewing its partnership with the program for 2019-2020, which allows agents to have the opportunity to obtain their certification and teach youth the curriculum through face-to-face sessions. As the second program year comes to a close, YQCA will shut down the system on September 14. So, from September 15-October 1, youth will not be able to access the system to complete the training or obtain a number. The system will also be inaccessible to instructors, so no additional certification may be issued, classes created, profiles updated, etc. During this time, the YQCA staff will be uploading the new modules and curriculum for the 2019-2020 year, as well as performing system maintenance. Agents who were certified last year can re-certify beginning on October 1. Details will be distributed directly from YQCA to currently certified instructors. Any additional agents who would like to become certified need to email Lexie Hayes at adhayes@ksu.edu to be added to the Kansas list of approved instructors by September 20. Once agents complete the certification process, their certification will be valid until September 1, 2020. Although a final decision will be confirmed by each respective board, we do anticipate exhibitors will continue to be required to complete annual YQCA certification to participate in the Kansas State Fair Grand Drive and the Kansas Junior Livestock Show.

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
September 19, 2019	KSU Beef Stocker Field Day	Manhattan
October 2-4, 2019	Developing and Implementing your Company's HACCP Plan	Olathe, KS
October 4, 2019	ASI Family and Friends Reunion	Manhattan
November 21, 2019	KSU Swine Day	Manhattan

What's New.....

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

“Are you a Manager or a Leader?”

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

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

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

“Silage Harvest is Underway; Be Safe”

One of the busiest, most fast paced operations that occur this time of year is silage harvest. Cutters and choppers in the fields, trucks racing from the field to the pile or bunker, multiple tractors pushing and packing silage. The speed at which we can harvest silage today is amazing, but we should never allow the speed at which can accomplish a task to compromise safety. Below are a few things to think about during this year's silage harvest.

- *Don't become complacent.* Stay aware of your surroundings. Let's face it: there are a lot of highly repetitive operations in putting up silage. One of the number one factors that lead up to an accident is complacency, or lack of situational awareness.
- *Truck drivers should always slow down when approaching houses and intersections on all roads, every time.* Those houses along the road belong to our neighbors and friends, some of which have children. The increased traffic on gravel roads creates dust, and the crops are tall, both of which reduce visibility at intersections. Our neighbors should not fear going to their mailbox due to our silage trucks.
- *People (especially children) should never be allowed near a drive-over pile or bunker silo during filling.* If people have to approach the area, get on the radio to inform the drivers/operators that people are on foot. Those on the ground in the area should always wear a bright colored safety vest.
- *Never fill higher than the top of the bunker wall.* This happens more than it should and creates a dangerous situation from the day the silage is packed until it is removed. The pack tractor cannot see the edge of the bunker well, if at all. The silage does not get packed well (which leads to poor silage) and the edge of the silage is unstable and more likely to collapse. *Don't do it.*
- *Be aware of steep slopes.* To reduce the risk of tractor roll-over, a minimum slope of 1 in 3 on the sides and end of piles should be maintained.
- *Never inspect or make repairs to equipment near the bunker or pile.* Equipment should be removed from the area as soon as possible. Repairs almost always involve people on foot and potentially people who may not be familiar with silage activities and the associated risks.

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

Chef Evaluation of the Degree of Doneness of Beef Strip Loin Steaks Cooked to Six End-Point Temperatures

– The objective of this study was to assess foodservice steak preparation practices and chefs' abilities to identify degrees of doneness of beef strip loin steaks. Beef strip loins from 12 animals representing five quality treatments (Prime, Top Choice, Low Choice, Select, and Select Enhanced) were collected. Steaks were cooked to an end-point temperature of very-rare (130°F), rare (140°F), medium-rare (145°F), medium (160°F), well-done (170°F), or very well- done (180°F). Each cooked steak was cut in half, perpendicular to the long axis of the steak, and photographs were taken immediately of the internal face of the lateral side. A digital survey was developed for chefs for the electronic evaluation of the images of the cooked steaks. Chefs were recruited via email from around the U.S. using an established database of chefs from all segments of the industry.

Bottom Line... Chefs did not report they use the current published degree of doneness temperatures. Additionally, chefs commonly rated steaks one degree of doneness above the degree of doneness category commonly associated with the end-point temperature. 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 25- to 50-lb Pigs Fed Diets Containing

Phytase - A total of 2,140 barrows and gilts with an initial pen average body weight (BW) of 24.5 ± 0.53 lb were used in a 21 d growth trial to determine the standardized total tract digestible phosphorus (STTD P) requirement of nursery pigs from 25 to 50 lb fed diets containing 1,000 phytase units (FYT). Pigs were weaned at approximately 19 d of age and allotted to pens according to gender and sow farm of origin. There were 12 replicate pens per treatment and 24 to 27 pigs per pen. Pens of pigs were randomly allotted to experimental diets based on average BW 25 d post-weaning, in a randomized complete block design. The seven dietary treatments consisted of 0.30, 0.33, 0.38, 0.43, 0.48, 0.53, and 0.58% STTD P, which included the expected release of phytase. These values represented 90, 100, 115, 130, 145, 160 and 175% of the National Research Council (NRC) requirement estimate for STTD P for pigs weighing between 25 to 55 lb, respectively. The diets contained 1,000 FYT of Ronozyme Hiphos 2500 with assumed releasing values of 0.15% available P and 0.132% STTD P. Two corn-soybean meal-based diets were formulated to contain 0.30 and 0.58% STTD P by increasing the inclusion of limestone and monocalcium phosphate at the expense of corn, maintaining a similar 1.17:1 total Ca:P ratio across treatments. These two diets were blended using a robotic feeding system to achieve the intermediate STTD P levels. Increasing STTD P quadratically improved average daily gain and feed efficiency. The greatest improvement was observed as the STTD P was increased from 0.30 to 0.43% for ADG, and from 0.30 to 0.38% for F/G, with no further improvements thereafter. Final BW and average daily feed intake (ADFI) increased linearly up to the highest STTD P level. The grams of STTD P intake per day and grams of STTD P intake per kilogram of gain where growth rate reached a point of diminishing returns in response to increased STTD P were greater than the NRC3 requirement estimates. Income over feed cost improved quadratically, with the highest income being observed at 0.43% STTD P. For both ADG and feed efficiency (modeled as G:F), the broken-line linear (BLL) model demonstrated best fit. The BLL plateau was estimated at 0.40% STTD P for ADG and at 0.37% STTD P for G:F.

Bottom Line... In conclusion, the estimated STTD P requirement for nursery pigs from 25 to 50 lb fed diets containing 1,000 units of phytase ranged from 0.37 to 0.43% depending on the response criteria. These results indicate that STTD P required to optimize performance and economic return of 25- to 50-lb pigs is greater than the NRC3 requirement estimate. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (*This study conducted by C.M. Vier, S.S. Dritz, M.D. Tokach, J.C. Woodworth, R.D. Goodband, and J.M. DeRouchey*)

Replacing Soybean Meal with Soy Protein Concentrate in Diets Containing 12% Crude Protein Does Not Maintain Performance in Finishing Pigs from 240 to 280 lb

- A total of 252 pigs were used in a 21-d trial to determine the effects of replacing soybean meal (SBM) with soy protein concentrate (SPC) in diets containing 12% crude protein (CP) on growth performance of finishing pigs from 240 to 280 lb. Pens of 7 or 8 pigs were allotted by body weight (BW) and randomly assigned to 1 of 4 dietary treatments with 8 replications per treatment. Treatments consisted of three levels of SBM (10.6, 5.3, and 0%) with 12% CP and a negative control treatment with 4.0% SBM and 10% CP. Soy protein concentrate was increased as SBM decreased to maintain 12% CP. For overall growth performance, decreasing SBM marginally decreased average daily gain (ADG) and worsened feed efficiency (F/G).

Bottom Line... In conclusion, regardless of the 12% CP level, reducing the concentration of SBM and replacing it with SPC worsened ADG and F/G. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (*This study conducted by J.A. Soto, M.D. Tokach, S.S. Dritz, J.C. Woodworth, J.M. DeRouchey, and R.D. Goodband*)

Effects of Dietary Corn Dried Distillers Grains with Solubles Withdrawal on Finishing Pig Performance and Carcass Characteristics

Two experiments were conducted to evaluate the effects of removing corn dried distillers grains with solubles (DDGS) at increasing intervals before harvest on finishing pig performance and carcass characteristics. For Exp. 1, 985 finishing pigs were used in a 28-d growth study. There were 12 pens per treatment with 19 to 21 pigs per pen. There were four treatments decreasing in duration of withdrawal of DDGS from diets before final marketing: 28, 21, 14, or 0 d withdrawal. Regardless of treatment, pens of pigs were topped according to a typical summer marketing strategy with one top prior to final barn dump. All pens were topped by removing the 17% heaviest pigs on d -21 resulting in a final barn dump of approximately 83% of starting barn inventory. Overall, there was no evidence for effects of DDGS withdrawal time on final BW, average daily feed intake (ADFI), or feed efficiency; however, as withdrawal time increased, average daily gain (ADG) linearly increased and iodine value decreased. There was no evidence for treatment differences for hot carcass weight (HCW) or loin depth; however, dressing percentage was linearly increased with increased withdrawal time. Backfat depth was also decreased and percentage lean increased as DDGS withdrawal time increased. Feed cost and gain value were increased resulting in a marginally significant increase in income over feed cost (IOFC) with increased withdrawal duration. In Exp. 2, 1,158 finishing pigs were used in a 35-d growth study. There were 15 pens per treatment with 17 to 21 pigs per pen. Similar to the first experiment, there were four treatments decreasing in duration of withdrawal of DDGS from diets before final marketing: 35, 28, 14, or 0 d withdrawal. All pens were topped according to a typical winter marketing strategy with two marketing events prior to the final barn dump. All pens were marketed by removing the 15% heaviest pigs on d -28, the 28% heaviest pigs on d -14, and a final barn dump of approximately 57% of starting barn inventory. There was no evidence that final BW, overall ADG, or overall F/G differed across treatments with increasing DDGS withdrawal times. Overall average daily feed intake increased as time withdrawn from DDGS before final marketing increased. Iodine value decreased and dressing percentage increased with increasing withdrawal time. Lastly, feed cost and feed cost per lb of gain increased with increasing DDGS withdrawal time.

Bottom Line... In conclusion, these experiments demonstrate that longer feeding duration of DDGS before harvest decreases carcass yield and increases iodine value. Feed cost is reduced with longer feeding of DDGS, yet the gain value and IOFC responses varied depending on the marketing strategy. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by A.B. Lerner, M.D. Tokach, J.C. Woodworth, J.M. DeRouchey, S.S. Dritz, R.D. Goodband, C. Hastad, K. Coble, E. Arkfeld, H.C. Cartagena, and C. Vahl)

Evaluation of the Quality Characteristics of Premium Pork Loins - The objective of this study was to determine shear force, pH, marbling, color characteristics, percentage of intramuscular fat, and purge loss of pork loins from various premium brands in comparison to commodity products. Pork loins from five premium (PRE A, B, C, D, and E) and two commodity brands (COM A and B) were purchased from food service purveyors and commercial abattoirs. Loins were transported to the Kansas State University Meat Laboratory, Manhattan, KS, and allowed to age 14 to 15 days under refrigerated conditions (36 to 39°F) before fabrication. All PRE brands were similar with lesser slice shear force values than COM A, with the exception of PRE C, which had greater slice shear force values than all other brands evaluated. Similar results were found for Warner-Bratzler shear force, with PRE C having greater Warner-Bratzler shear force values than all other treatments, and no difference found among the other PRE products. Commodity A was also tougher than all PRE brands, except PRE C for Warner-Bratzler shear force. For subjective loin color evaluations, all PRE brands were similar, with only PRE C having a greater color score than PRE B. Commodity B had a lesser loin subjective color than all PRE products except PRE B and D. Also, COM B had a greater L* value (lighter) and lesser a* value (less red) than all of the other brands. No difference in a* was found among the PRE brands and only PRE D and E differed for L*. The two COM products had a similar chop color score, however COM B was lighter than all PRE brands. Premium A and E had greater loin visual marbling than all other brands, with no difference found among the two COM brands and the other 3 PRE brands. However, for chop visual marbling, the two COM brands had less marbling than all PRE brands, except PRE B and C. For fat percentage, all brands had between 2 to 3% fat, with COM A having less fat than all PRE brands other than PRE B and D. Little variation was found among brands for pH, but COM B had a lower pH than all of the other brands. Premium A, C, and D had less weight lost as purge than any of the other brands.

Bottom Line... The differences observed within the quality traits evaluated show variation among different premium pork loin brands. This provides evidence that consumers and retailers will receive different levels of pork quality and eating satisfaction dependent upon the premium brand purchased. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by L.L. Prill, L.N. Drey, E.A. Rice, and T.G. O'Quinn)

ASI Faculty Spotlight



Barry Bradford (bbradfor@k-state.edu; 785-532-7974)
Professor/Dairy Nutrition

Barry Bradford was raised on a cow/calf operation in southwest Iowa and was heavily involved in the operation from a young age. He received his bachelor's degree at Iowa State University, then went on to obtain his doctorate in animal nutrition at Michigan State University, where his research focused on metabolic regulation of feed intake in dairy cattle. In 2006, Bradford began his current position at Kansas State University with a 60% research, 40% teaching appointment. Bradford oversees an active research program focused on uses of alternative feedstuffs in dairy nutrition, transition cow health, and physiological regulation of carbohydrate and lipid metabolism. He also teaches over 185 students per year as an instructor in Fundamentals of Nutrition (ASI 318), Physiology of Lactation (ASI 601), and Dairy

Cattle Nutrition (ASI 681).

Barry lives in Manhattan with his wife, Sarah, and their children, Hannah, Kiernan, and Lydia. The Bradfords took a six-month sabbatical in Australia where Barry worked on a next-generation approach to pharmaceuticals known as RNA interference.



Mike Brouk (mbrouk@k-state.edu; 785-532-1207)
Professor/Extension Specialist, Dairy Management

Micheal J. Brouk was born November 15, 1962, in Franklin County, Missouri. He attended Linn R-2 Schools graduating in May 1981. Following high school graduation, he attended the University of Missouri-Columbia majoring in agronomy and dairy science and received the Bachelor of Science degree in Agriculture in May 1985. From 1976 to 1984, he was also an active partner in the family grain farm located in Osage County, Missouri. The University of Missouri-Columbia employed Mike as a Research Specialist for two years after he completed his undergraduate program. The research projects involved the utilization of dairy processing plant waste as a fertilizer for forage crops and as a protein and mineral supplement for livestock. He then began a Master of Science degree program under Dr. Ron Belyea at the University of Missouri-Columbia. The title of his thesis was "Chewing Behavior and Digestion of Alfalfa Forage."

Following completion of his M.S. degree, Mike accepted a position with Cenex/Land O'Lakes in southwestern Minnesota. He worked as a Livestock Production Specialist developing nutrition and management programs for dairy and beef producers. After two years with LOL, he entered a doctoral program under the direction of Dr. David Schingoethe at South Dakota State University. His dissertation topic was "Net Energy of Lactation and Ruminant Degradability of Wet Corn Distillers Grains." Following completion of his Ph.D. in Animal Sciences, he joined the teaching and research staff of South Dakota State University in January 1994. Mike was responsible for teaching undergraduate dairy management, nutrition, breeding and cattle evaluation courses as well as developing a dairy cattle nutrition research project.

Mike returned to the University of Missouri-Columbia in August of 1996 as an Extension Specialist with Commercial Agriculture Program. He was responsible for developing state wide extension programs in the areas of dairy cattle nutrition, forage systems, replacement heifer development and dairy cattle management. He joined the faculty of Kansas State University in December of 1998 as a State Dairy Extension Specialist where he holds a 30% teaching and 70% extension appointment. His current responsibilities include development of programs in dairy cattle nutrition, management, cow comfort, replacement heifer development, dairy expansion and heat stress abatement. He teaches the Dairy Cattle Management course (ASI 621) and Stored Forages (ASI 685). He is currently involved in several research projects evaluating bacterial contamination of forages and the application of robotic milking equipment on commercial dairies.

What Producers Should Be Thinking About.....

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



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

Spring Calving Cows

Cowherd Management

- Pregnancy check (if not already completed).
- If candidates for culling were not selected in September or October, it should be completed now.
- Consider feeding cull cows to increase body weight, value, and utilize cheap feedstuffs. Value of gain is equal to the difference between the ending value and beginning values divided by the gain. Compare this to cost of gain figures. When cost of gain is less than value of gain, profit will be realized.
- Body Condition Score
 - Provide thin cows (body condition score 3s and 4s) extra feed now. Take advantage of weather, stage of pregnancy, lower nutrient requirements and quality feedstuffs.
- In late fall and early winter, start feeding supplement to mature cows using these guidelines:
 - Dry grass 1½ - 2 lb supplement/day of a 40% CP supplement
 - Dry grass 3 - 4 lb supplement/day of a 20% supplement
 - Dry grass 10 lb good nonlegume hay, no supplement needed
 - Compare supplements on a cost per pound of nutrient basis.
- Utilize crop residues.
 - Average body condition cows can be grazed at 1 to 2 acres/cow for 30 days assuming normal weather. Available forage is directly related to the grain production levels.
 - Limiting nutrients are usually protein, phosphorus, and vitamin A.
 - Strip graze or rotate fields to improve grazing efficiency.
- Discontinue feeding tetracycline if used for anaplasmosis control.

Calf Management

- Participate in National Level Breed Association Performance Programs CHAPS and(or) other ranch record systems.
- Finalize plans to merchandise calves or to background through yearling or finishing programs.

Forage/Pasture Management

- Plan winter nutritional program through pasture and forage management.

General Management

- Document cost of production by participating in Standardized Performance Analysis (SPA) programs.
- Review management decisions; lower your costs on a per unit of production concept.
- Plan your marketing program, including private treaty, consignment sales, test stations, production sales, etc.

*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.*