



WEBER HALL
ANIMAL SCIENCE & INDUSTRY



News from KSU Animal Sciences

UPCOMING EVENTS...

- ↪ **State Livestock Nominations - Due June 15th** - All small livestock and commercial heifer state nominations (non-market beef) are due June 15. This includes commercial heifers, market swine, commercial gilts, market lambs, commercial ewes, and ALL meat goats. There is not a separate division for registered breeding does at either state show, so all meat goats must be nominated in order to be eligible to show. The 2018 nomination information has been distributed to county offices and may be found on the Youth Livestock Program website. The 2018 Declaration and Specie Nomination Forms MUST be used for nominations to be accepted. All families are encouraged to use the specie checklist as a guide to ensure their nominations are complete upon submission. This resource may be found on the Youth Livestock Program website (www.asi.k-state.edu/research-and-extension/youth-programs), or through the local county office. As part of the family nomination process, all eligible exhibitors within a family should submit one set of paperwork and DNA envelopes, with the signatures of ALL children within the family, in addition to the parent/legal guardian and county agent or FFA advisor. Please double check that there are not any blank fields or questions on the Declaration and Nomination Forms before placing them in the mail. As a reminder, ear notches are required for swine nominations and full scrapie tag numbers are required for sheep and goats. This includes both the Flock/Premise ID and individual animal number (example: KSS0035 16121). Nominations received without this information will be considered incomplete and returned to the family for completion. Confirmation letters will be sent to families once their nominations have been processed, and reports will be updated on the Youth Livestock Program website on Fridays until we reach the deadline, then more frequently after that. Families are encouraged to use one of these options to verify their nominations. A complete nomination does NOT constitute show entry. The Kansas State Fair entries are already available on their Grand Drive website, and KJLS will release entry information to agents and through its website soon. State Fair Grand Drive entries will be due July 15, and KJLS entries will be due August 15. Animals who are nominated, but do not follow the appropriate entry processes set forth by each show, will not be permitted to show. For nomination questions, please contact Lexie Hayes at adhayes@ksu.edu.
- ↪ **Quality Assurance Certification for State Shows** - All exhibitors who state nominate swine projects MUST have a current and valid Youth PQA+ certification number or Youth for the Quality Care of Animals (YQCA) number at the time of nomination. There is a field for this information on the swine nomination form, under the contact information. Any nominations received without the appropriate Youth PQA+ number will be considered incomplete. The Youth PQA Plus program was discontinued on May 31, 2018. The National Pork Board will honor Youth PQA Plus numbers until they expire; however, the training is no longer available for youth to re-certify or new youth to obtain their certification. Kansas youth swine exhibitors who still need quality assurance training will need to complete the YQCA program, either online or through an instructor-led class offered by a certified instructor. Visit www.yqca.org to sign up, or contact the local extension office for information on local opportunities available. If families have questions about youth who are too young to receive a certification number (less than 8 years old), please contact the local extension office or Lexie Hayes adhayes@ksu.edu or 785-532-1264.

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June, 2018 issue



↪ The **2018 Dr. Bob Hines Kansas Swine Classic** is scheduled for July 6-7 at CiCo Park in Manhattan. This two-day event includes educational workshops, showmanship contest, and a prospect and market pig show. It is open to all Kansas youth ages 7 through 18 as of January 1, 2018. Again this year, all market pigs will be shown together and divided into classes based on weight.

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. Outlined below is a schedule of this year's program.

Friday, July 6

8 a.m.	Barn open for arrival
Noon	All hogs in place
1 p.m.	Swine photo check-in by the show ring
1 – 3 p.m.	Swine Skillathon in the show ring
4 p.m.	Ice cream party by the show ring
5:30 p.m.	Showmanship contests

Saturday, July 7

8 a.m. Prospect Pig Show followed by Barrow and Gilt Market Pig Show

Entries must be postmarked by June 25, 2018. More information and registration is available at www.KSUswine.org. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu) or Lexie Hayes 785-532-1264; adhayes@ksu.edu).

↪ **K-State Ranching Summit** - The KSU Beef Team is pleased to invite you to the 2018 K-State Ranching Summit on August 15 at the Alumni Center in Manhattan, KS. The theme of the program is "*Beef 2030 – Pursuing technology, transparency and profitability.*" A tentative agenda is below:

8:30 AM	Registration
9:00 AM	Welcome, Goals
9:15 AM	Pursuing, adopting and leveraging technology – Mark Gardiner, Gardiner Angus, Ashland, KS
10:00 AM	Managerial accounting: key numbers for ranch managers – Tyson Johnson, Sooner Cattle Co., Pawhuska, OK
10:45 AM	Break
11:15 AM	What can we learn from consumer trends – Don Close, Rabo AgriFinance, St. Louis, MO
12:00 PM	Response to morning session followed by Q & A – Matt Perrier, Dalebanks Angus, Eureka, KS
12:15 PM	Lunch
1:00 PM	Disruptive technologies and the Beef Industry – Tom Field, University of Nebraska, Lincoln, NE
1:45 PM	A look at specific disruptive technologies – K-State speakers
2:30 PM	Break
3:00 PM	A vision of the Beef Industry in 2030 – John Butler, Innovative Livestock Services, Manhattan, KS
3:45 PM	Response to afternoon session followed by Q & A – Dale Blasi, K-State, Manhattan, KS
4:00 PM	Adjourn

Early registration (by August 8) is \$40 for individuals or \$70 for two attendees from the same operation. Students are \$20. Registration August 9 and later, including at the door, is \$70, no discount offered for second attendee from same operation. Pre-registration is encouraged to accommodate catering.

A block of rooms has been reserved at the Holiday Inn at the Campus under "K-State Ranching Summit." Reservations must be made by **July 20** to receive the rate of \$99.95 plus tax. Participants may make reservations directly with the hotel at 785-539-7531 or online at www.holidayinn.com/universityks, using the group code RAN. For registration and schedule updates, visit www.KSUbeef.org. For more information, contact Bob Weaver 785-532-1460; bweaver@ksu.edu).

↪ **Kansas 4-H Livestock Sweepstakes August 18-19!** - The 2018 Kansas 4-H Livestock Sweepstakes will be held August 18-19 on the K-State campus in Manhattan, KS. This is the corresponding date to previous years. The 4-H Livestock Sweepstakes event includes the state 4-H livestock judging contest, meat judging contest, livestock skillathon, and livestock quiz bowl. The members who will represent Kansas at the national 4-H contest for each of these events will be selected during the livestock sweepstakes weekend. The deadline to enter will be August 1. All entries must be made by the local Extension Office using Cvent. Rules and the Coach's Guide are posted on the Youth Livestock Program website (www.asi.k-state.edu/research-and-extension/youth-programs), under "4-H Livestock Sweepstakes". Entry information will be released by July 1. For more information, contact Lexie Hayes at adhayes@ksu.edu.

- ↪ **KSU Beef Stocker Field Day to be hosted September 20** - The 2018 KSU Beef Stocker Field Day will be Thursday, September 20, at the KSU Beef Stocker Unit in Manhattan. The day will start at 9:30 a.m. with registration/coffee and conclude with a good old-fashioned Prairie Oyster Fry and Call Hall ice cream at 5:30 p.m. Watch for more details coming to 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 held October 3-5, 2018 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 **4th annual ASI Family and Friends Reunion** on Friday, October 12, 2018, 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. This year the Don L. Good Impact Award will be presented to CattleFax. Other activities will include great food, live music, Junior Wildcat Barnyard and more surprises. Registration information is available at www.asi.ksu.edu/familyandfriends.

- ↪ KSU Animal Sciences and Industry Department will be hosting the **2018 Kansas Certified Wool Classing School and Kansas Sheep Shearing School** on October 19-21. Watch for more details. For more information, contact Alison Crane (arcrane@ksu.edu; 785-532-1672)

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
June 15, 2018	All Other Species Nominations due	
July 6-7, 2018	Dr. Bob Hines Swine Classic	Manhattan
August 15, 2018	K-State Ranching Summit	Manhattan
August 18-19, 2018	Kansas 4-H Livestock Sweepstakes	Manhattan
September 20, 2018	KSU Beef Stocker Field Day	Manhattan
October 3-5, 2018	HACCP Workshop	Olathe
October 12, 2018	4 th Annual ASI Family and Friends Reunion	Manhattan
October 19-21, 2018	Kansas Certified Wool Classing School	Manhattan
October 19-21, 2018	Kansas Sheep Shearing School	Manhattan

WHAT'S NEW.....

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

“Fatigue and Stress”

Summer is here and along with it comes the long hours that coincide with planting, grain harvest, putting up hay, or shipping cattle. Long hours in the workplace often lead to fatigue and stress, which both have serious consequences. Fatigue in the workplace is one of the leading causes of workplace accidents. Stress is a normal emotional response but it is associated with a number of negative outcomes. Short-term consequences of stress include headaches, trouble sleeping, difficulty concentrating and short temper. Chronic stress may result in insomnia, anxiety, hypertension, heart disease, obesity and depression. Therefore, even though we have to “do the work when the work has to be done” it is important to give our employees and ourselves opportunities to de-stress. Those opportunities can take many different forms, short breaks, leaving a few minutes early, or taking everyone to town for lunch. Although, it may take more time to get the work done, or all the work might not get done (it rarely does anyways), it might be time well spent if it prevents an accident.

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

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

“Feedlot Steer Performance in 2017”

Each year I retrospectively summarize the data from the K-State Focus on Feedlots. In an effort to document annual trends in fed cattle performance. The Focus on Feedlot data for steers from 2017, 2016 and 2015 is summarized in the table below. In 2017, participating feedlots marketed 358,092 steers, approximately 39,000 more steers than were marketed in 2016. In weights were slightly lower in 2017, averaging 796 lbs. Final weights of steers were notably lower (34 lbs) averaging 1387 lbs compared to 1416 lbs and 1421 lbs in 2015 and 2016, respectively. Steers were on feed approximately 164 days, an increase of five days from 2016. Average daily gain and feed conversion were similar across years. However, death loss did increase slightly to 1.52% relative to the 1.36% previously reported in 2016. Reported total cost of gain averaged \$74.34/Cwt. in 2016, which was \$2.98/Cwt. lower than 2016 and \$10.82/Cwt. lower than 2015.

Annual Closeout Summary: Steers

Year	Total Head	In Weight ³	Final Weight	Days on Feed	Avg. Daily Gain	Feed/Gain (Dry Basis)	% Death Loss	Cost of Gain/Cwt
2017	358092	796 (752-861)	1387 (1332-1429)	164 (142-174)	3.57 (3.21-3.81)	6.11 (5.94-6.34)	1.52 (1.16-2.43)	\$74.34 (71.83-77.60)
2016	319710	824 (789-850)	1421 (1388-1445)	159 (150-169)	3.66 (3.45-3.83)	6.04 (5.88-6.23)	1.36 (1.03-1.72)	\$77.32 (69.74-81.87)
2015	277107	815 (784-848)	1416 (1367-1472)	165 (153-173)	3.56 (3.34-3.79)	6.14 (5.91-6.38)	1.50 (1.09-1.80)	\$85.16 (81.07-89.45)

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

- ↪ **Trends in Source and Age Verification for Beef Calves Sold via Summer Video Auction from 2010 Through 2017** - The objective of this study was to quantify the effect of source and age verification status on the sale price of beef calf lots sold via summer video auctions from 2010 through 2017 while adjusting for all other factors that significantly influenced sale price. Information describing factors about lots sold through a livestock video auction service (Superior Livestock Auction, Fort Worth, TX) was obtained from the auction service in an electronic format. These data were collected for 36,570 lots of beef calves that were sold via 61 summer sales from 2010 through 2017. A model was developed for each year to quantify the effects of all factors describing beef calf lots that significantly affected sale price.
- Bottom Line...** Though the percent of lots qualified for source and age verification decreased from 2011 to 2016, premiums were garnered from verified lots. The percentage of lots enrolled may continue to increase with new export markets. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information contact, Karol Fike (785-532-1104; karol@ksu.edu) or Bob Weaber (785-532-1460; bweaber@ksu.edu).
- ↪ **Total Tract Dry Matter Digestibility and Proportions of Ruminal Propionate Are Increased in High-Energy Limit-Fed Diets Based Primarily on Wet Corn Gluten Feed** - The objective of this study was to study digestion and characteristics of digestion of high-energy limit-fed diets based primarily on wet corn gluten feed. Six ruminally-cannulated Jersey crossbred steers were used to measure total tract diet digestibility, passage rate, volatile fatty acid, ammonia production, and ruminal pH when limit-feeding high-energy diets based primarily on wet corn gluten feed.
- Bottom Line...** High-energy limit-fed diets based primarily on wet corn gluten feed are 15% more digestible and produce a higher concentration of energy yielding volatile fatty acid compared to low-energy full-fed diets without apparent disruptions in ruminal fermentation or health. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information contact, Dale Blasi (785-532-5427; dblasi@ksu.edu).
- ↪ **Marbling Texture Does Not Affect Muscle Fiber Type of Beef Strip Loin Steaks** - The objective of this study was to determine the effects of marbling texture and meat quality on muscle fiber type and size. Top Choice, Low Choice, and Select beef strip loins were visually categorized into fine, medium, or coarse marbling textures. The strip loins were fabricated into 1-in steaks. The second steak was used for histology analysis. From each steak, four marbling flecks and their surrounding tissue were collected. For each marbling fleck, one cryosection was collected for immunohistochemical analysis to determine muscle fiber characteristics.
- Bottom Line...** These results reveal marbling texture did not impact muscle fiber cross-sectional area. Any potential difference in tenderness with varying marbling texture is not due to muscle fiber cross-sectional area or fiber type. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information contact, John Gonzalez (785-532-3448; johngonz@ksu.edu) or Terry Houser (785-532-1253; houser@ksu.edu).

↪ **Standardized Total Tract Digestible Phosphorus Requirement of 25- to 50-lb Pigs** - A total of 1,080 barrows and gilts were used in a 21-d trial to determine the standardized total tract digestible (STTD) P requirement of nursery pigs from 25 to 50 lb. Two groups of pigs were weaned at approximately 21 d and allotted to pens according to BW and gender. There were 6 replicate pens per treatment and 23 to 27 pigs per pen. Pens of pigs were randomly allotted to experimental diets based on average BW at d 21 and 24 post-weaning, in a randomized complete block design. The seven dietary treatments consisted of 0.26, 0.30, 0.33, 0.38, 0.43, 0.48, and 0.53% STTD P. These values represented 80, 90, 100, 115, 130, 145, and 160% of the NRC (2012) requirement estimate for STTD P for pigs weighing between 25 to 55 lb, respectively. Two corn-soybean meal-based diets were formulated to contain 0.26 and 0.53% STTD P by increasing the inclusion of limestone and monocalcium phosphate at the expense of corn, maintaining a similar 1.17:1 to 1.18:1 total Ca:P ratio, with no phytase added to the diets. Diets were blended using a robotic feeding system to achieve the intermediate STTD P levels.

Increasing STTD P improved ADG, ADFI, F/G, and final BW. There was also a marginally significant quadratic response for F/G, with the greatest improvement as STTD P was increased from 0.26% to 0.33%. Income over feed cost also improved linearly through 0.53% STTD P. 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 higher than the NRC4 requirement estimates. For ADG, the linear model demonstrated best fit, estimating the maximum response at greater than 0.53% STTD P. For feed efficiency, modeled as G:F, the best-fitting models were the quadratic polynomial (QP) and broken-line linear (BLL). The QP model estimated the maximum at 0.43%, with 99% of maximum G:F achieved at 0.36% STTD P. The BLL plateau was estimated at 0.34% STTD P.

Bottom Line... In conclusion, the estimated STTD P requirement for nursery pigs from 25 to 50 lb ranged from 0.34 to at least 0.53% depending on the response criteria and statistical model used, which indicates that the NRC (2012) requirement estimate is lower than what is needed to optimize performance and economic return. 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, F. Wu, S.S. Dritz, M.D. Tokach, M.A.D. Gonçalves, U.A.D. Orlando, J.C. Woodworth, R.D. Goodband, and J.M. DeRouchey*)

↪ **Concentrations and Addition of Phytase on Growth Performance of Nursery Pigs** - A total of 720 nursery pigs were used in a 42-d growth study to determine the effects of feeding 2 calcium (Ca) and 3 standardized total tract digestible (STTD) phosphorus (P) concentrations on growth performance and bone ash content. Pens of pigs (10 pigs/pen, 12 pens/treatment) were blocked by initial pen weight, and within blocks pens were allotted randomly to 1 of 6 dietary treatments. Dietary treatments were arranged in a 2 × 3 factorial, with two levels of Ca (0.58 vs. 1.03%) and 3 levels of STTD P (0.33 and 0.45% without phytase, and 0.45% with 0.12% of the P being released by phytase). Diets were provided in 3 phases, with pigs fed experimental diets during phase 1 (d 0 to 14) and phase 2 (d 14 to 28), followed by a common phase 3 diet from d 28 to 42. For the majority of the feeding periods, Ca × P interactions were observed for growth responses. From d 0 to 28, when diets contained low Ca concentration, pigs fed 0.45% STTD P with phytase had greater ADG and ADFI compared with those fed 0.45% STTD P without phytase or 0.33% STTD P. When high Ca was fed, ADG and ADFI were similar among pigs fed 0.45% STTD P with or without phytase, but were greater than those fed 0.33% STTD P. Feed efficiency was poorer when low STTD P and high Ca were added to diet compared with other dietary treatments. During phase 3, pigs previously fed 0.33% STTD P had similar ADG, but decreased ADFI and improved F/G compared with pigs previously fed 0.45% STTD P with or without phytase. However, pigs fed 0.33% STTD P, with high Ca were not able to fully compensate for the negative effects of P deficiency, resulting in decreased overall ADG and ADFI compared with pigs fed 0.45% STTD P diet with or without phytase. On d 21, one median-weight gilt from each pen was euthanized and fibulas were collected for analysis of bone ash content. Pigs fed 0.33% STTD P had decreased bone ash concentration compared with those fed 0.45% STTD P with or without phytase when high Ca was added to diets, but this P effect was not observed when diets contained low Ca concentration.

Bottom Line... In conclusion, excess Ca in diets decreased growth performance and bone ash concentration of nursery pigs when diets were deficient in STTD P. Adding phytase to achieve 0.45% STTD P in diets improved ADG and ADFI of pigs compared with diets containing 0.45% STTD P without phytase, indicating a potential underestimation of the P release from phytase or an increased availability of other nutrients liberated by phytase. 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, M.D. Tokach, J.M. DeRouchey, S.S. Dritz, J.C. Woodworth, and R.D. Goodband*)

ASI Faculty Spotlight



Tim Rozell (trozell@k-state.edu; 785-532-2239)

Professor/Physiology

Dr. Rozell began the process of growing up in Garrison, Missouri, back in the late 20th century. He completed his B.S. and M.S. degrees at the University of Missouri and then earned his Ph.D. at Washington State University. After a three-year postdoctoral fellowship at the University of Iowa, Dr. Rozell was hired in 1997 at Kansas State University with a 70% Teaching and 30% Research appointment. His primary teaching role is ASI 533, Anatomy and Physiology, a 4-credit hour course that is taught every semester to an average of about 120 students per semester. Dr. Rozell has also taught a course on the physiology of lactation, which has now been converted to “Endocrinology and Lactation” and is co-taught with Dr. Barry Bradford. In addition, he co-teaches a lambing class with Dr. Alison Crane in the spring that offers students hands-on experience with livestock. Dr. Rozell has led study tours to

Switzerland, Germany and France.

Dr. Rozell’s current research program focuses on heat stress in dairy cattle, and the role of exercise and physical activity on heat tolerance in cows.

During the 2004-2005 school year, Dr. Rozell went on Sabbatical in Scotland to help develop new research techniques to examine expression of variant forms of the follicle stimulating hormone receptor in cows and sheep. There he collaborated with the University of Glasgow’s College of Veterinary Medicine.

Dr. Rozell resides in Manhattan with his wife, Marcia, and their Border Collie, MacKenzie. The Rozells have two children (neither of whom is smarter than the dog): Sam, who is working on his Master’s in Biomedical Engineering at the University of California – San Diego, and Josie, who is a professional writer and English teacher in Auckland, New Zealand. Dr. Rozell continues to grow up, and has no plans to finish the process anytime soon.



Scott Schaake (simmi@k-state.edu; 785-532-1242)

Associate Professor/Beef Cattle Production and Management

Dr. Scott Schaake was raised on a cow-calf ranch/row crop operation near Lawrence, Kansas. He graduated from Kansas State University in 1984 with a B.S. in Animal Sciences and Industry. He earned his M.S. at Clemson University and Ph.D. at the University of Kentucky, specializing in Meat Science.

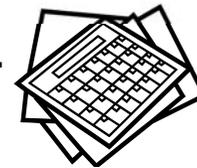
He served as the coach of the Kansas State Livestock Judging Team from 1992 to 2013, leading his teams to five consecutive national championships during his tenure. Dr. Schaake has judged livestock shows in 40 states, Canada, Mexico and South America.

He and his wife, Kandi, live in Westmoreland, Kansas, where they manage more than 80 head of registered Simmental cattle. Their program utilizes an extensive AI and ET program designed around successful, proven cow families.

They take pride in building their herd around cattle that are sound, functional and display genetic excellence not only in the show ring, but most importantly when put in production. Sons Shane, his wife, Melissa, and Shilo remain actively involved in the growth of Schaake Farms, and assist with the marketing of their genetics.

What Producers Should Be Thinking About.....

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



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

August is when forages are maturing, weaning time is approaching, and weather dictates several key management decisions.

Breeding Season

- Given high feed price inputs, ruthlessly cull all unsound cows from the herd. Cull cows that do not conceive after three services by a fertile bull.
- Limit the breeding season. Remove bulls after 60 days with cows, 45 days with heifers.

These methods contribute to a more uniform calf crop, makes winter feed management easier and increases the success rate of next year's breeding season.

Cow Herd Nutrition

- Provide ample amounts of clean, fresh drinking water.
- Conduct an inventory of forage needs for the winter feeding period.
- Plan ahead and price availability of byproducts, such as wheat-middlings, dried distillers grains, etc. prior to typical seasonal price increases.

Herd Health

- If pinkeye is likely to be a problem, consider the following preventive and therapeutic measures.

Preventive:

- ◆ Make sure the herd is receiving adequate vitamins and trace minerals in their diet.
- ◆ Consider using a medicated trace mineral package.
- ◆ Consider vaccination for pinkeye and IBR (consult your local veterinarian).
- ◆ Control face flies.
- ◆ Clip pastures with tall, coarse grasses that may irritate eyes.

Therapy:

- ◆ Administer an intramuscular injection of long-acting oxytetracycline when symptoms are first noticed.
 - ◆ Shut out irritating sunlight by patching eyes, shade, etc.
 - ◆ Control flies.
 - ◆ Consult your veterinarian.
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- Consider revaccinating for the respiratory diseases in any animals that will be taken to livestock shows.
 - Vaccinate suckling calves for IBR, BVD, PI3, BRSV, and possibly pasteurella at least three weeks prior to weaning.
 - Revaccinate all calves for blackleg.
 - Vaccinate replacement heifers for brucellosis (4 to 10 months of age).
 - Monitor and treat footrot.

Forage/Pasture Management

- ☑ Enhance grazing distribution with mineral mixture placement away from water sources.
- ☑ Observe pasture weed problems to aid in planning control methods needed next spring.
- ☑ Monitor grazing conditions and rotate pastures if possible and(or) practical.
- ☑ If pastures will run out in late summer, get ready to provide emergency feeds. Start supplemental feeding before pastures are gone to extend grazing.
- ☑ Harvest and store forages properly. Minimize waste by reducing spoilage.
- ☑ Sample harvested forages and have them analyzed for nitrate and nutrient composition.
- ☑ Plan for sufficient standing pasture for winter grazing needs.
- ☑ For stocker cattle and replacement heifers, supplement maturing grasses with an acceptable degradable intake protein/ionophore (feed additive) type supplement.

General Management

- ☑ Avoid unnecessary heat stress - Don't handle and/or truck cattle during the heat of the day.
- ☑ Repair, replace and improve facilities needed for fall processing.
- ☑ Order supplies, vaccines, tags and other products needed at weaning time.
- ☑ Consider earlier than normal weaning, but have a marketing plan in place.

*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.*