



WEBER HALL
ANIMAL SCIENCE & INDUSTRY



Newsletter from the Department of Animal Sciences and Industry
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WHAT'S NEW...

↪ **Management Minute/Feedlot Facts** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist *“What Grade Do You Deserve?”*

How often do you grade your operation? Or do you regularly bring in an outside consultant to evaluate your organization? There is great value in having an outside expert critique your actual operating practices.

Do you view your operation with critical eyes? Or do you believe you're already doing everything as "right" as possible? The problem with self-evaluation is that it's hard for us to know what "normal" should be when we are immersed in what is "normal" for our operation.

I have visited some operations where "normal" animal handling procedures are less than ideal based on current standards and best management practices. How frequently do your animal handlers use a whip or hot shot? What is "normal" for your operation may not be considered "normal" for the rest of the cattle industry or, more importantly, acceptable by your ultimate customer---the beef consumer. Do your cattle handlers routinely yell and whistle while moving stock? If this has become "normal" for your operation, it may be time for you to either critically evaluate your standard animal handling practices or bring in an outside expert to do it for you.

How you train and monitor animal handling practices determines the message you send your cattle crew as to what is appropriate. People will fall into old habits when permitted. Just like any other operational procedure, good habits can be trained and reinforced. Catch people doing things wrong and re-direct them; catch people doing things right and commend them. Be intentional. Make this a priority. Have regular training sessions and solicit feedback. Communicate the importance and value of appropriate animal handling practices. Be transparent. Most folks desire to do things right, once they know what the right thing is. Animal caregivers by their nature want to know they are doing right by the animals in their care.

We are at a critical time in all of animal agriculture with respect to our management practices; we are being observed and graded by our customer. The question you must ask yourself is, "What grade do I deserve?" For more information, contact Chris at 785-532-1672 or cdr3@ksu.edu.

↪ **FMD Outbreak in Japan** - Japan has recently encountered an outbreak of Foot and Mouth Disease involving pigs, beef and dairy cattle. In spite of an aggressive response to the disease situation, new herds are being diagnosed with FMD almost daily. Japanese authorities have initiated ring vaccination around positive herds but many of these herds have broken with the disease before the vaccine has had time to take effect. To date authorities have euthanized over 35,000 pigs, beef and dairy cattle in an effort to control spread of the disease. This includes one major bull stud where 49 bulls had to be destroyed.

The USDA has issued a ban on beef and pork products from Japan. Visitors from Japan or those returning from visiting Japan should not bring any beef or pork products into the U.S. Visitors to Japan should avoid visiting livestock operations in the Miyazaki Prefecture on the island of Kyushu where the outbreak is occurring. Tour groups desiring to visit U.S. livestock operations should be asked if they are from Kyushu, and if so, the visit postponed until the FMD situation in Japan is eradicated. Other visitors from Japan should not be allowed on U.S. livestock operations until they have been in the country for a minimum of 5 days (FMD virus does not affect humans, but the virus can live in human nasal passages for 3 days). Also, visitors should have bathed since reaching the U.S. and wear only freshly laundered clothing and new shoes that have not been worn on any Japanese livestock facility. U.S. facilities hosting Japanese visitors should consider providing disposable coveralls and boots if they plan to allow these visitors to step onto their operations. Whenever possible, a "windshield tour" where visitors view livestock only from a tour vehicle would be the preferred biosecurity procedure. For more information, contact Larry Hollis, D.V.M. (lhollis@ksu.edu; 785-532-1246).

↙ The **National Poultry Improvement Plan (NPIP) webpage** has recently been updated. The link is: <http://www.asi.ksu.edu/DesktopDefault.aspx?tabid=1039>. All the information necessary to become a certified tester for pullorum typhoid is now available online. Check out this website for the latest on the NPIP Testing Program and more. For more information, contact Scott Beyer (sbeyer@ksu.edu; 785-532-1201).

↙ **Precutting Round Alfalfa and Cornstalk Bales Decreases Time and Fuel Required for Bale Breakup in a Vertical Mixer** - - The conventional baling method fed alfalfa through the header of a round baler and carried it by packer fingers into a baling chamber. The precut baling method fed alfalfa through the header of a round baler equipped with serrated knives that cut the alfalfa stems into 3- to 8-in. sections. In experiment 1, alfalfa round bales were used to evaluate differences in mixing time of alfalfa baled with different techniques (precut vs. conventional) and in different bale sizes (5 × 4 ft vs. 6 × 4 ft). In experiment 2, cornstalk round bales were used to evaluate differences in mixing time of cornstalks baled with different techniques (precut vs. conventional) and field cutting methods (swathed, flail shredded, brush hog).

In experiment 1, precut bales had a shorter ($P < 0.05$) mixing time than conventional bales regardless of bale size (72 vs. 142 seconds for 5 × 4 ft and 110 vs. 237 seconds for 6 × 4 ft, respectively). Fuel usage was lower ($P < 0.05$) for 5 × 4 ft precut bales than for 5 × 4 ft conventional bales but similar between bale types for 6 × 4 ft bales. Precut alfalfa bales used less fuel ($P < 0.001$) than conventional bales. Also, the 5 × 4 ft alfalfa bales used less fuel per bale ($P < 0.001$) than the 6 × 4 ft bales. In experiment 2, precut bales had a shorter ($P < 0.001$) mixing time than conventional bales. Precut bales also used less fuel per bale ($P < 0.01$) than conventionally processed bales for each field cutting method.

Bottom Line... Precut forage bales required less time to break apart in a vertical mixer, which translated into less fuel required per bale. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu) or Justin Waggoner (620-275-9164; jwaggon@ksu.edu).

↙ **SmartLic Hi-Pro 40 Block Supplements Improve Forage Digestion** - Four ruminally fistulated steers fed prairie hay were used to evaluate effects of the SmartLic Hi-Pro 40 block supplement on ruminal fermentation and microbial growth. Two of the steers were provided free-choice access to the block supplements, and the other two steers received no supplement (control). Ruminal fluid was obtained from each animal and used to compare differences in microbial populations and capacity for cellulose digestion.

Bottom Line... Feeding SmartLic Hi-Pro 40 block supplements substantially increased microbial growth within the rumen, as evidenced by greater bacterial colonization of cellulose and increased numbers of protozoa. Furthermore, digestive activity was improved markedly, resulting in faster disappearance of cellulose from the rumen. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Jim Drouillard (785-532-1204; jdrouill@ksu.edu) or Dale Blasi (785-532-5427; dblasi@ksu.edu).

↙ **High Sulfur Content in Distillers Grains with Solubles May be Deleterious to Beef Steer Performance and Carcass Quality** - Eighty crossbred yearling steers were used in a 140-day finishing trial. Steers were fed finishing diets based on steam-flaked corn or dry-rolled corn containing 30% (dry matter basis) dried distillers grains with solubles with 0.42% or 0.65% (dry matter basis) dietary sulfur. Steers were housed in individual pens. Ruminal gas samples were aspirated from the ruminal head space and analyzed for hydrogen sulfide concentration. Animals were evaluated daily for symptoms of polioencephalomalacia.

Bottom Line... Feeding distillers grains with a high sulfur content decreased feed intake and compromised growth performance and carcass characteristics of feedlot cattle. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Jim Drouillard (785-532-1204; jdrouill@ksu.edu) or Larry Hollis (785-532-1246; lhollis@ksu.edu).

↳ **Influences of Heat Stress on Serological Response and Performance of Dairy Calves** - Objectives of this study were to investigate the possible effects of heat stress on calf growth and the development of active immunity. Eighteen heifer calves born between July 21 and August 24, 2008, were housed in individual hutches, and half of the calves were provided supplemental shade from birth to 8 weeks of age. During this time, milk replacer intake, dry feed intake, and fecal scores were recorded daily. Calf weight and hip and shoulder heights were measured and recorded weekly. The bovine viral diarrhea portion of the vaccine given at 5 weeks of age was used as an indicator to track the development of humoral immunity. Intake, growth, temperature response after vaccination, and serum titers did not differ significantly between treatments. In contrast, differences in hutch temperature, relative humidity, and temperature humidity index were observed between treatments.

Bottom Line....Results indicated that supplemental shade provided to calves housed in hutches does not affect their performance or ability to develop active immunity. View the complete research report at www.asi.ksu.edu/dairy under the *Dairy Publications and Presentations* link. (This study conducted by D.M. Meyer, M.J. Brouk and L.C. Hollis.)

↳ **Effects of Copper Sulfate and Zinc Oxide on Weanling Pig Growth and Plasma Mineral Levels** – A total 216 weanling pigs (PIC TR4 × 1050, initially 13.6 lb and 21 d of age) were used in a 42-d growth trial to compare the effects of supplemental zinc and copper and changing mineral regimens on growth performance and plasma mineral levels. The 6 dietary treatments included a 2 × 2 factorial arrangement with main effects of added copper from copper sulfate (0 or 125 ppm) and added zinc from zinc oxide (0 or 3,000 ppm from d 0 to 14 and 0 or 2,000 ppm from d 14 to 42). For the final 2 treatments, either zinc oxide alone or the combinations of zinc and copper were fed from d 0 to 14, with copper sulfate fed from d 14 to 42. There were 6 pens per treatment with 6 pigs per pen. All diets were supplemented with an additional 165 ppm zinc and 16.5 ppm copper from the trace mineral premix. Plasma was collected from 2 pigs per pen on d 14 and 42. From d 0 to 14, ADG, ADFI, and F/G were improved with the addition of dietary zinc. Copper supplementation also tended to increase ADFI from d 0 to 14. From d 14 to 42, added copper increased ADG and ADFI. Over the entire trial, continuous supplemental zinc increased ADG and tended to increase ADFI. Dietary copper also increased ADG and ADFI when fed from d 0 to 42. The most advantageous values for ADG and ADFI were seen in the treatment containing high levels of zinc from d 0 to 14 and high copper levels from d 14 to 42. The addition of either zinc or copper increased feed cost per pound of gain. However, income over feed cost was improved with the addition of copper, with the greatest value obtained when high zinc was fed from d 0 to 14 and high copper was fed from d 14 to 42. Plasma zinc levels were increased with zinc supplementation on d 14.

Bottom Line....These results indicate the optimal mineral regimen was supplementing zinc oxide from d 0 to 14 and copper sulfate from d 14 to 42. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by N.W. Shelton, M.D. Tokach, J.L. Nelssen, R.D. Goodband, S.S. Dritz, J.M. DeRouchey, G. M. Hill, R.G. Amachawadi, and T.G. Nagaraja.)

↳ **Effects of Feeding Ractopamine HCl (Paylean) for Various Durations on Late-Finishing Pig Performance and Carcass Characteristics** - A total of 627 pigs (241.5 lb) were used in a 21-d finishing trial to evaluate the effects of feeding ractopamine HCl (RAC; Paylean, Elanco Animal Health, Greenfield, IN) for different durations on growth performance and carcass characteristics. On d 0, pens of pigs containing both barrows and gilts in approximately equal numbers were blocked by average BW and randomly allotted to 1 of 3 dietary treatments (8 pens per treatment) with average initial weight balanced across treatments. Dietary treatments were feeding a control diet without RAC and feeding a diet containing 4.5 g/ton RAC for the last 14 or 21 d prior to marketing. Pens of pigs were weighed and feed intake was collected on d 0, 7, and 21 to calculate ADG, ADFI, and F/G. Carcass data were collected from the 4 heaviest pigs per pen marketed on d 7 and from all pigs marketed on d 21. Pigs fed RAC starting on d 0 gained faster and consumed less feed from d 0 to 7 than control pigs and pigs not yet fed RAC. From d 7 to 21, pigs started on RAC at d 7 had improved ADG and F/G compared with control pigs and pigs that remained on RAC. There was no difference in overall ADG between the treatment groups; however, ADFI was lower and F/G improved for pigs fed RAC, regardless of duration, compared with control pigs. There were no differences in overall live weight or HCW at market in this trial. Compared with control pigs, pigs fed RAC for 21 d had reduced backfat depth, increased loin depth, and improved percentage lean. Pigs fed RAC for 14 d had intermediate responses to these 2 treatments for loin and backfat depth but had a higher percentage lean than control pigs.

Bottom Line....These data demonstrate that feeding RAC to pigs for 14 d reduced ADFI, improved F/G, and improved percentage lean compared with control pigs. Feeding RAC for an additional 7 d did not influence overall ADFI or F/G compared with feeding RAC for 14 d total but further improved percentage lean compared with feeding RAC for 14 d. Pigs fed RAC for 21 d had decreased backfat and increased loin depth compared with control pigs. This study demonstrates that for heavyweight pigs, F/G and ADFI responses are achieved with either duration of RAC feeding, but the magnitude of the carcass response to feeding RAC appears to be duration dependent. More information is available at www.KSUswine.org. (This study conducted by M.L. Potter, S.S. Dritz, M.D. Tokach, J.M. DeRouchey, R.D. Goodband, and J.L. Nelssen.)

UPCOMING EVENTS...

- ↳ The **2010 Dr. Bob Hines Swine Classic** is scheduled for July 9-10, 2010, at CiCo Park in Manhattan. Come and help us celebrate the 25th anniversary of the Swine Classic. This two-day event includes educational workshops, showmanship contest, and a prospect and market hog show. It is open to all Kansas youths ages 7 through 18 as of January 1, 2010. This year's Classic will feature the K-State Swine Knowledge Challenge along with a Swine Photography Contest.

For the Swine Photography Contest, youth may submit up to 2 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 9

12:00 p.m.	All hogs in place
1:00 p.m.	Photo Check-in by the show ring
1:30 p.m.	K-State Swine Knowledge Challenge
4:00 p.m.	Ice cream party by the show ring
5:30 p.m.	Showmanship Contests

Saturday, July 10

8:30 a.m. Prospect Hog Show followed by Barrow and Gilt Market Hog Show

Visit www.KSUswine.org for a registration form. For more information, contact Joel DeRouche (785-532-2280; jderouch@ksu.edu), Sharon Breiner (785-532-1264; sbreiner@ksu.edu), or Jim Nelssen (785-532-1251; jnelssen@ksu.edu)

- ↳ The **2010 Applied Reproductive Strategies in Beef Cattle Symposium** will be held August 5-6, 2010, in Nashville, Tennessee. This symposium will inform producers on cutting edge reproductive strategies. The speakers will provide the knowledge needed to improve herd productivity and decrease input costs by shortening the calving and breeding season. The symposium will also help producers understand how to improve overall reproductive management through enhancement of both male and female reproduction, as well as innovations in protocols such as estrous synchronization. Program details and registration are available at <http://westcentral.unl.edu/beefrepro/>. For more information, contact Sandy Johnson (sandyj@ksu.edu; 785-462-6281)

- ↳ **2010 K-State Beef Conference – Value Optimization** is the theme for the upcoming 2010 K-State Beef Conference scheduled for Thursday, August 12, 2010. The conference will be held at Frick Auditorium in Mosier Hall of the KSU Veterinary Medicine Complex. Alternate live remote viewing sites will also be held at Pratt Community College, Butler Community College and the Wakeeney Public Library. The schedule for the day includes:

8:00 a.m.	Registration
9:00 a.m.	Welcome – <i>Dr. Ken Odde, K-State</i>
9:15 a.m.	Challenges facing the cow/calf industry – <i>Sam Hands, Triangle H Cattle Company</i>
9:45 a.m.	characterizing change in the beef industry – <i>Justin Waggoner, K-State</i>
10:15 a.m.	What are buyers looking for? – Panel Discussion Moderator: <i>Larry Hollis, K-State</i> <ul style="list-style-type: none">◆ Order buyer/Sale barn – <i>Mark Harmon, Joplin Regional Stockyards</i>◆ Feed yard – <i>Tom Brink, Five Rivers Cattle Feeding</i>◆ Video Auction – <i>Paul Branch, Super Livestock</i>
12:00 noon	Lunch
1:30 p.m.	Backgrounding Systems – Panel Discussion Moderator: <i>Dale Blasi, K-State</i> <ul style="list-style-type: none">◆ Drylot Strategies – <i>Gene Holthaus, Holthaus Farms</i>◆ Limit feeding on grass traps – <i>Rich Porter, Porter Farms</i>◆ Staging cattle for the feedlot – <i>Kenny Knight, Knight Feedlot</i>
3:00 p.m.	Break
3:30 p.m.	Pasture lease rates – <i>Kevin Dhuyvetter, K-State Department of Ag Economics</i>
4:00 p.m.	Wet Distillers storage: no bags, no forage required – <i>Justin Waggoner, K-State</i>
4:30 p.m.	What have we learned today? – <i>Greg Henderson, Drivers Magazine</i>

For more details and registration, visit www.KSUbeef.org and follow the K-State Beef Conference link. For more information, contact Larry Hollis (lhollis@ksu.edu; 785-532-1246).

↪ Make plans now to attend the **Flint Hills Beef Fest** which will be held August 20-22, 2010. Cattle Division Events include a Grass Futurity Contest, Stocker Cattle Show, Best of Grass and Show, Feedlot Contest and Carcass Show. Events will take place on the Lyon County Fairground in Emporia, Kansas. Other Beef Fest Activities include Arena Events such as Ranch Rodeo, Team Roping, Ranch Horse Competition and more. For more details and a complete schedule of events, please visit <http://www.beefest.com>.

↪ **4-H Livestock Sweepstakes** – Make plans to attend the 4-H Livestock Sweepstakes to be held on August 21-22, 2010! This all-around event will feature contests in Livestock Judging, Meats Judging, Livestock Skillathon, and Livestock Quiz Bowl. Belt Buckles will be awarded to the county that does the best in all four contests. A county or district may choose to use the same four 4-Hers for all contests or use any combination of students for each contest. Teams may also come for only a portion of the contests. The Livestock Judging Contest will be held on Saturday with rounds 1-3 of the Quiz Bowl. On Sunday, participants will compete in the Livestock Skillathon and Meats Judging Contest. We will hold Round 4 of the quiz bowl just prior to the award ceremony for all events. Each participating county will be required to provide a minimum of one volunteer for the event. Please look for a sign-up sheet, complete rules, and registration material coming soon. Information and past winners can be found at www.YouthLivestock.KSU.edu.

Please Note: The event will be held during K-State Move-in Weekend. Please reserve your room as soon as possible. No activities will take place at the hotel. For your convenience two sets of room blocks have been made for August 20-22:

Clarion Hotel - \$90 – “KSU Department of Animal Science and Industry” Block – (785) 539-5311

Quality Inn - \$65 – “KSU Department of Animal Science and Industry” Block – (785) 770-8000

For questions, contact Brain Faris (brfaris@ksu.edu; 785-532-1255).

↪ The **2010 KSU Beef Stocker Field Day** will be held on Thursday, September 30 at the KSU Beef Stocker Unit in Manhattan. Registration will begin at 9:30 a.m. and the day will conclude with a good old-fashioned Prairie Oyster Fry complete with Dutch Oven Cobbler.

Watch for complete details on www.KSUbeef.org. For more information, contact Dale Blasi (dblasi@ksu.edu; 785-532-5427).

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
June 15-17, 2010	Champion Livestock Judging Camp	Manhattan
June 18-20, 2010	Champion Livestock Judging Camp	Manhattan
June 21-23, 2010	Champion Livestock Judging Camp	Manhattan
July 9-10, 2010	Dr. Bob Hines Swine Classic	Manhattan
August 5-6, 2010	Applied Reproductive Strategies in Beef Cattle Symposium	Nashville, TN
August 12, 2010	K-State Beef Conference	Manhattan
August 20-22, 2010	Flint Hills Beef Fest	Emporia, KS
August 21-22, 2010	4-H Livestock Sweepstakes	Manhattan
September 30, 2010	KSU Beef Stocker Field Day	Manhattan

AS&I FACULTY SPOTLIGHT



Bob Goodband (goodband@k-state.edu; 785-532-1228)
Professor/Extension Swine Specialist

Dr. Bob Goodband was born in 1961 in Walpole, Massachusetts. He graduated from The Pennsylvania State University in 1984. He obtained his M.S. (1986) and Ph.D. (1989) in Swine Nutrition at Kansas State University, and then joined the Department of Animal Sciences and Industry as an Assistant Professor with a 60% extension and 40% teaching appointment. In 1995, Bob was promoted to associate professor and in 2001 full professor with a 40% extension, 40% teaching, and 20% research appointment.

Bob's current teaching assignment includes ASI 535, Swine Science which is taught both fall and spring semesters. This class covers the basics of modern, sustainable swine production and includes a laboratory session where students are exposed to hands-on training at the Swine Teaching and Research Farm. Other classes include ASI 320 (Fall) Principles of Feeding taught with Dr Mike Brouk and ASI 679, Swine Nutrition also taught in the fall semester. In addition Dr. Goodband has two classes, ASI 318, Fundamentals of Nutrition and ASI 535 Swine Science that are offered through the Department of Continuing Education and can be taken by students off campus. Bob also advises approximately 25 undergraduate students each year and has been the major professor for 9 M.S. and 5 Ph.D. students. Bob has excelled in his teaching appointment by his enthusiastic and practical approach to classes. As a result of his accomplishments, in 1995 and 1998 Bob was selected by the students as the College of Agriculture Faculty of the Semester. Bob, his wife Dani, and son Brady enjoy K-State football games, and spending time on their small farm outside of Riley, KS.



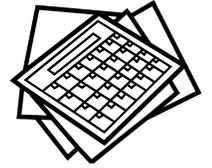
Dan Moser (dmoser@k-state.edu; 785-532-2459)
Associate Professor/Beef Cattle Genetics

A native of Effingham, Kansas, Moser received his B.S. in Animal Sciences & Industry from Kansas State University in 1991, and then earned his M.S. (1994) and Ph.D. (1997) in Beef Cattle Genetics from the University of Georgia. He returned to K-State in 1999, and currently serves as Associate Professor with a 50% teaching, 50% research appointment. His teaching responsibilities include undergraduate and graduate courses in genetics and animal breeding. He serves as advisor to 55 undergraduates and 1 graduate student.

He remains active in his family's Hereford and Angus seedstock operation. He and his wife [Lisa](#) have two young sons, Justin and Ryan, and a daughter, Allison.

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.

Cowherd 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 mineral 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 any animals that will be taken to livestock shows.
 - Vaccinate suckling calves for IBR, BVD, PI3, BRSV, and possibly pasteurella at least 3 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.*