



Newsletter from the Department of Animal Sciences and Industry
 218 Weber Hall - Kansas State University - Manhattan, KS 66506
 785-532-6533 – www.asi.ksu.edu

UPCOMING EVENTS...

- **The 2014 Beef Improvement Federation (BIF) Research Symposium and Convention is set for June 18-21, 2014, in Lincoln, Nebraska.** - For nearly 50 years the Beef Improvement Federation has hosted their annual research symposium and convention. The convention serves to facilitate discussion and provide education on current issues facing the beef industry. This year, US MARC will be hosting pre-conference tours on Tuesday (all day) and Wednesday morning. Tours can be arranged by contacting Janel Nierman (Janel.Nierman@ARS.USDA.GOV; 402-762-4110). For the latest information about the 2014 BIF Symposium and Convention along with registration and hotel information, visit www.beefimprovement.org.
- **2014 Dr. Bob Hines' Kansas Swine Classic planned for July.** The 2014 Dr. Bob Hines Swine Classic is scheduled for July 11-12, 2014, 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 7 through 18 as of January 1, 2014. **All purebred pigs (both prospect and market) must have registration papers provided at time of check-in to qualify for the purebred classes.** This year's Classic will feature an Extemporaneous Speaking Contest and Swine Photography Contest along with an educational program which includes information on "PEDv: Status Update and Future Implications for Youth Projects."

For the Speaking Contest, participants will register on-site for the contest. The contestant will draw three livestock and ag-related topics out of a pool of topics. They will then select which topic they wish to speak about from the three options and will be given 30 minutes to prepare a speech. Contestants will then give their 3-7 minute speech in front of a judge and spectators who wish to listen. Guidelines and criteria for the speech will be given to the contestants at check-in.

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 11

12:00 p.m. All hogs in place
 1:00 p.m. Swine photo check-in by the show ring
 1:15 p.m. Extemporaneous Speaking Contest Check-in by the show ring
 1:30 p.m. PEDv: Status Update and Future Implications for Youth Projects
 3:30 p.m. Ice cream party by the show ring
 5:30 p.m. Showmanship Contests

Saturday, July 12

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

Entries close on July 1, 2014 (must be postmarked by June 29, 2014). More information and registration is available at www.KSUswine.org. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu), or Jim Nelssen (785-532-1251; jnelssen@ksu.edu)

June, 2014

News from KSU Animal Sciences

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We Need Your Help!

Please send questions, comments or ideas for future newsletter topics to lschrein@ksu.edu or call (785) 532-1267.





- Plans for the **K-State's Beef Conference 2014** are being finalized. New for this year, the K-State Beef Conference will be held similar to the Winter Ranch Management Conference with sessions held at different locations on August 11-14. Watch for more details available in coming weeks at <http://www.asi.k-state.edu/species/beef/k-state-beef-conference.html>.
- Flint Hills Beef Fest planned for August** - Make plans now to attend the Flint Hills Beef Fest which will be held August 22-24, 2014. Founded in 1986, the Flint Hills Beef Fest is an annual celebration of the grass cattle industry for which the Flint Hills region of Kansas is known. Cattle Division Events include a Grass Futurity Contest, Live Stocker Cattle Show, Feedlot Contest and Carcass Competition. Events will take place on the Lyon County Fairground in Emporia, Kansas. For more details and a complete schedule of events, please visit <http://www.beeffest.com>.
- The **Kansas Livestock Sweepstakes** has been scheduled for August 23-24, 2014. This all-around event will feature contests in Livestock Judging, Meats Judging, Livestock Skillathon, and Livestock Quiz Bowl. A special prize will be awarded to the county that does the best in all four contests. Rules and past winners can be found at www.YouthLivestock.KSU.edu. Registration forms will need to be postmarked by August 1. Complete information for 2014 will be available soon on the Youth Livestock Web page. For more information, contact Hilary Hawkins (hbhawkins@ksu.edu; 785-532-1264).
- The **2014 KSU Beef Stocker Field Day** will be held on Thursday, September 25 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. Watch for complete details coming soon to www.KSUbeef.org. For more information, contact Dale Blasi (dblasi@ksu.edu; 785-532-5427).
- OSU to host national beef reproduction conference** - Cow-calf producers and large-animal veterinarians should plan now to attend the 2014 Applied Reproductive Strategies in Beef Cattle Conference hosted by Oklahoma State University's Division of Agricultural Sciences and Natural Resources Oct. 8-9.

The conference is an annual Beef Reproduction Task Force event that alternates from state to state. The task force is a multi-state extension - activity in cooperation with the North Central Agricultural and Natural Resources Program Leaders Committee and the Cooperative State Research, Education and Extension Service. Key goals of the Beef Reproduction Task Force include promoting widespread adoption of reproductive technologies among cow-calf producers, educating producers in management considerations that will increase the likelihood of successful breeding of animals through artificial insemination and educating producers about marketing options to capture benefits that result from use of improved reproductive techniques.

A schedule of events is available online at <http://www.beefextension.com/genetics>. The two-day conference will take place in the OSU Student Union, located on the university's Stillwater campus. Anyone seeking additional information about the Oct. 8-9 conference should contact Megan Rolf by email at mrolf@okstate.edu or Dan Stein by email at daniel.stein@okstate.edu.

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
June 18-21, 2014	Beef Improvement Federation Symposium and Annual Meeting	Lincoln, NE
July 11-12, 2014	Dr. Bob Hines' Kansas Swine Classic	Manhattan
August 11-14, 2014	K-State Beef Conference	Various
August 22-24, 2014	Flint Hills Beef Fest	Emporia, KS
August 23-24, 2014	Kansas Livestock Sweepstakes	Manhattan
September 25, 2014	KSU Beef Stocker Field Day	Manhattan
October 8-9, 2014	Applied Reproductive Strategies in Beef Cattle	Stillwater, OK

WHAT'S NEW.....

Management Minute **“Servant Leadership”**

↪ **Management Minute** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist **“Servant Leadership”**

What is a leader? There are many appropriate responses that are all good and right and true. George Patton was a leader. As was his boss, Dwight Eisenhower (a good Kansas boy). Patton is legendary for his swagger and aggression; Eisenhower is iconic for his serious, pensive, decision-making and consensus-building. Outspoken autocrat vs. quiet, thoughtful team-builder.

Both Patton and Ike were successful and highly-effective leaders. However, which of these great generals practiced a leadership style that is likely to be applicable to your workplace in the modern business environment where good employees have options of other places to work?

In battle, democracy doesn't work above the squad level. When bullets are flying and bombs are exploding, and lives are in jeopardy, decisions must be made and orders must be followed---immediately. Patton won battles, but Ike won the war. Winning a battle requires a short-term strategy of exploiting your own strengths and your enemy's weaknesses. But winning the war required not just military strategy but political strategy as well---something Patton was likely not good at or even cared greatly about.

Most employees will follow an autocratic leader if they trust the leader's vision for the organization, and provided the work environment is not oppressive. However, if the contributions of ideas and strategy by individual employees which could help attain the corporate vision are continually ignored or suppressed by the leadership, creative, proactive employees will eventually lose their motivation. They will quit trying to make the workplace better and quit trying to improve the company. Enthusiasm wanes, and they will leave when the opportunity arises.

Your greatest strength, maximized, may be your greatest weakness. The visionary autocrat, without humility and compassion, will eventually be followed by uninspired automatons who must be dragged through their daily duties by the leadership. However, the visionary leader who routinely requests and welcomes input from the team will create a powerful synergy, harnessing the work ethic and creativity of the team to their own directional vision---the engine effectively synchronized with the steering wheel.

For more information, contact Chris at 785-532-1672 or cdr3@ksu.edu.

↪ **Feedlot Facts** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist **“Heat Stress Abatement: Prevention IS the Cure”**

Summer is upon us and is promising some record temperatures and heat conditions across the Midwest, and we're just coming into the time of greatest concern for heat stress. As beef producers and those of us who support the beef industry, it's our duty to prepare for all the possible contingencies that summer weather can bring. So, that being said, what are the tools we have in our toolbox to be better prepared to deal with the heat?

1. Pasture cattle fare better than confined cattle during heat events, provided that they can find adequate shade, elevated areas to catch more breeze, and abundant water quality and quantity to alleviate heat stress during the hottest times of the day.
2. Black-hided cattle sustain the greatest challenge due to absorption of more solar radiation compared to light-hided cattle, and the problem is exacerbated in heavy, long-fed cattle. Heat stress is caused by the combination of actual temperature, high humidity, lack of wind, and lack of cloud cover.
3. Shade works. Keeping solar radiation to a minimum during extreme heat events may eliminate the need for emergency intervention. Even some kind of temporary or portable shade structures which can be placed in pens prior to extreme heat events will give cattle relief and get you through the worst heat episodes.
4. Wind breaks contribute to heat stress. Even if no extreme heat stress may be evident, reducing potentially cooling breezes can make cattle less likely to consume and perform up to their full potential. If wind breaks are needed for the winter, consider some form of temporary wind break which can be removed for the summer months.

Feedlot Facts **“Heat Stress Abatement: Prevention IS the Cure”**

↪ **Feedlot Facts – “Heat Stress Abatement: Prevention IS the Cure....part II” (cont.)**

5. Building mounds isn't just for during wet, muddy, conditions. Cattle will climb mounds for improved access to breezes. *Cattle don't lie*: if they're using shades and using mounds, they are probably more comfortable because of the mounds and the shades.
6. Extra drinking water space may provide comfort and alleviate the demand on the water system during peak heat hours. Remember: cattle cool themselves through evaporative cooling from their lungs and this can move a tremendous volume of water which needs to be replaced. Extra water space can be in the form of steel tanks or even feed bunks with tarps and sand bags on the ends to convert part of the bunk to an extended water tank. Not only is water volume the issue, but linear access space is also critical because dominant cattle may simply stand at the water trough to breathe the cooler air directly above the water source, preventing smaller or more timid cattle from getting a needed drink. Extra tanks provide both volume and linear access space.
7. Bedding a portion of the pen with straw or light-colored hay provides a reflective surface to provide cattle a cooler place to lie down and rest, thus reducing their activity and comfort during already stressful conditions.
8. Sprinkling cattle may be essential during extreme heat events. Spraying cattle is costly, time-consuming, and can contribute to increased mud and humidity within the pen, but it also may be the difference between life and death for extremely heat-stressed cattle. Be hyper-vigilant for signs of extreme heat distress: open mouthed, labored, panting. Both cattle surface temperature and soil surface temperature are reduced as a result of spraying water which then evaporates, taking heat out of the surface. Have a full water truck on hand when the forecast calls for elevated temps, high humidity, minimal wind, and lack of cloud cover.

As summer heat comes at us, we all need to be prepared. Shade, extra water space, mounds to elevate cattle to catch extra breeze, and removal of wind breaks can help cattle effectively alleviate heat stress. Preparation is much more effective at reducing the costs of heat stress than interventions after extreme heat stress is obvious.

For more information contact Chris at cdr3@ksu.edu.

↪ The Department of Animal Sciences and Industry at Kansas State University seeks applicants for a **Research Assistant – Physiology Lab position**. This is a full-time, 12-month, term position. A Bachelor of Science degree is required. View complete position announcement at: www.asi.ksu.edu/about/job-announcements.html. Review of applications begins June 27, 2014 and continues until the position is filled.

↪ **Temperament Can Be an Indicator of Feedlot Performance and Carcass Merit in Beef Cattle** - This research investigated the relationships between cattle temperament (measured by chute score and exit velocity), immunological factors, and a range of economically relevant performance traits. Cattle temperament measured by chute score and exit velocity, weights, and gains were recorded throughout their time in the feedlot (140 days). Factors affecting immune function (interleukin-8 and cortisol) were also recorded at the time of feedlot placement. Carcass traits, including hot carcass weight, marbling score, yield grade, ribeye area, and fat thickness were recorded post-harvest. Resulting phenotypic relationships between temperament, immunological factors, and carcass merit were then determined.

Small negative correlations were found between exit velocity at the time of re-implant and weight at the time of re-implant ($r = -0.10$), weight at day 140 ($r = -0.11$), total gain in the feedlot ($r = -0.12$), and hot carcass weight ($r = 0.08$), suggesting that more temperamental cattle will have decreased feedlot performance and carcass merit than their calmer peers.

Bottom Line...Evidence from this study indicates that calmer cattle generally perform better during the finishing phase and may be more profitable as a result. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Jennifer Bormann (785-532-1222; jbormann@ksu.edu) or Bob Weaber (785-532-1460; bweaber@ksu.edu).

↪ **Wheat Straw Improved by Half-Rate Application of Anhydrous Ammonia** - This study was designed to determine if the recommended rate of 3% anhydrous ammonia application (dry weight) could be reduced by half. Anhydrous ammonia was applied to wheat straw at application rates of 1.5% (HALF) or 3.0% (FULL) on a dry matter basis (30 or 60 lb of anhydrous ammonia/ton of dry forage) to evaluate effects on forage quality and *in vitro* dry matter disappearance (an estimate of digestibility). Approximately 130 to 140 round bales of wheat straw were arranged in two separate stacks (3-2 configuration) at each of 6 independent locations. Stacks were assigned randomly to HALF or FULL rate anhydrous treatments. Forage samples were obtained prior to and 14 days after anhydrous application for analysis of dry matter, crude protein, acid detergent fiber, total digestible nutrients, and *in vitro* dry matter disappearance.

Bottom Line...The feeding value of wheat straw may be improved by treating with anhydrous ammonia at application rates as low as 1.5% of dry matter weight of the stack (30 lb anhydrous ammonia

per dry ton of forage). View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Justin Waggoner (620-275-9164; jwaggon@ksu.edu) or Dale Blasi (785-532-5427; dblasi@ksu.edu).

↪ **Evaluation of Ammoniated Wheat Straw in Receiving and Growing Diets** – The objective of this study was to compare performance of newly received and growing calves fed total mixed rations containing wheat straw, ammoniated wheat straw, or a blend of prairie hay and alfalfa hay, each fed at 30% of the diet dry matter. 288 steers were randomly assigned to three experimental diets containing 30% (dry matter basis) of either wheat straw, ammoniated wheat straw, or a blend of prairie hay and alfalfa hay. Diets also contained 40% wet corn gluten feed, dry-rolled corn, and supplement. Calves were fed their respective diets daily for 56 days, after which they were fed a common diet (the alfalfa hay prairie hay diet) for an additional 14 days to equalize gut fill. Calves were weighed on days 0, 28, 56, and 70. Dry matter intakes, average daily gains, and feed efficiencies were determined for each pen of calves.

Bottom Line...Ammoniation of wheat straw provided no advantage over untreated wheat straw under the conditions of this experiment. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Dale Blasi (785-532-5427; dblasi@ksu.edu).

↪ **Influence of Copper Sulfate and Tribasic Copper Chloride on Feed Intake Preference in Finishing Pigs** - A total of 150 pigs (PIC 327 × 1050; initially 191 lb BW) were used in a 15-d study to determine if pigs have a preference for diets that contain added Cu from either copper sulfate (CuSO₄) or tribasic copper chloride (TBCC). Pens of pigs were randomly allotted to 1 of 3 dietary preference comparisons with 10 replications per comparison. Treatment diets used were a corn-soybean meal control with no supplemental Cu, or the control diet with 150 ppm of added Cu from either CuSO₄ or TBCC. Pens contained two feeders, each with 1 of 2 treatment diets with feeders rotated once daily within each pen. The comparisons tested were: (1) control vs. CuSO₄, (2) control vs. TBCC, and (3) CuSO₄ vs. TBCC.

For comparison 1, pigs consumed more of the control diet than the added CuSO₄ diet (3.68 vs. 2.02 lb/d), which translated into pigs eating 66% of their daily intake from the control diet and 34% from the CuSO₄ diet. For comparison 2, pigs consumed more of the control diet than the TBCC diet (3.30 vs. 2.49 lb/d), which equated to 57% of their daily intake from the control diet and 43% from the TBCC diet. For comparison 3, pigs consumed more of the diet containing TBCC than that with the added CuSO₄ (3.50 vs. 1.96 lb/d), which was equivalent to 65% vs. 35% of daily intake, respectively.

Bottom Line...When given a choice, pigs preferred to consume a diet without high levels of added Cu; however, when given the choice between diets containing either Cu source, pigs preferred diets containing TBCC. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by K.F. Coble, K.N. Card, J.M. DeRouchey, M.D. Tokach, J.C. Woodworth, R.D. Goodband, S.S. Dritz, and J. Usry)

↪ **Stimulation of Estrus and Ovulation in Lactating Sows** - A total of 53 sows were used to determine the effects of a lactational estrus stimulation strategy on reproductive and litter growth performance. Treatment differences within parity group, multiparous and primiparous, were also considered. Litter size was equalized to 11.6 ± 1.2 pigs at d 2 postfarrowing. At d 18 of lactation, sows were allotted to the control or an altered suckling method (ALT). The ALT sows were placed in adjacent pairs within parity so pigs could be moved between litters by temporarily lifting the divider between the two litters. On d 18, all but the 5 lightest weight pigs from each ALT litter were weaned. The 5 lightweight pigs for each pair of litters formed a combined litter that nursed each sow of the pair 12 h/d from d 18 to 25. Therefore, pigs had nursing access 24 h/d, but each ALT sow was suckled only 12 h/d. Boar exposure was provided to ALT sows for 15 min/d by removing sows to a pen outside the farrowing room. Control and ALT sows were weaned at d 21 and d 25, respectively. Sow weights and litter growth performance during lactation was similar between treatments, although ALT sows had 16% greater total feed intake due to the extended lactation length. Primiparous sows lost a greater percentage (7.4 vs. 3.4%) of BW and consumed less feed than multiparous sows. A total of 26 ALT sows (93%) were detected in estrus and mated in lactation. Although duration from initiating ALT to estrus was greater than the wean-to-estrus interval for controls, ALT sows were in estrus earlier (23.0 vs. 24.6 d) than controls postfarrowing, with primiparous sows responding more slowly (5.4 vs. 3.8 d) than multiparous sows for both treatments.

Bottom Line... Pregnancy rate and subsequent reproductive performance were similar between treatments. ALT sows expressed lactational estrus and performed reproductively similar to sows with conventionally weaned litters. More information is available on this experiment in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by H.L. Frobose, K.M. Gourley, M.D. Tokach, J.M. DeRouchey, S.S. Dritz, R.D. Goodband, J.L. Nelssen, and D.L. Davis)

AS&I Faculty Spotlight



Hilary Hawkins (hbhawkins@k-state.edu; 785-532-1264)

Youth Livestock Coordinator

We are pleased to welcome Hilary Hawkins to the K-State Family as our new Youth Livestock Coordinator in the Animal Sciences and Industry Department. Hilary officially started June 9, 2014. She grew up in Inver Grove Heights, Minnesota on a small farm where her family still operates a small cow/calf operation. Hilary showed commercial and registered Simmental cattle at all levels of competition, and also has some experience with swine, goats, sheep, and horses. She served as the Minnesota State Fair 4-H Livestock Show Coordinator in 2011 and worked as the Registrations and Junior Activities Intern for the American Shorthorn Association. Hilary recently completed her undergraduate in Animal Science from North Dakota State University. We are excited to have Hilary as our new Youth Livestock Coordinator.



Chris Reinhardt (cdr3@ksu.edu; 785-532-1672)

Associate Professor/Feedlot Extension Specialist

A native of Wisconsin, Dr. Reinhardt received a B.S. in Meat and Animal Science from the University of Wisconsin, an M.S. in Nutrition from Texas A&M University, and a Ph.D. in Nutrition from good ol' Kansas State. Chris' focus has been on nutritional and hormonal manipulation of body composition and beef quality. After 11 years in the feed and animal health industries working throughout the High Plains and Northern Plains, he came back to K-State in 2005 as the Extension Feedlot Specialist with a 80% extension : 20% research appointment. Notable extension programs include: The Beef Cattle Institute at Kansas State University; Feedlot Nutritionist Boot Camp; Cattle Feeders' College; Feedlot Facts monthly newsletter and Management Minute monthly newsletter.

In his spare time Chris enjoys hunting, church activities, playing guitar with friends, and his family.



Dan Moser (dmoser@k-state.edu; 785-532-2459)

Associate Professor/Beef Cattle Genetics

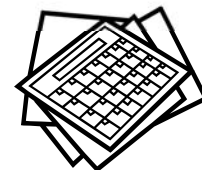
A native of Effingham, Kansas, Moser received his B.S. in Animal Sciences & Industry from Kansas State University in 1991, then earned his M.S. (1994) and Ph.D. (1997) in Beef Cattle Genetics from the University of Georgia. He returned to K-State in 1999, and currently serves as Associate Professor with 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 3 graduate students, and is faculty coordinator for the K-State Purebred Beef Unit.

Dr. Moser's recent research has expanded national cattle evaluation programs to include additional economically relevant traits, such as heifer calving rate and udder conformation. He served as Breed Association Liaison for the National Cattlemen's Beef Association's Carcass Merit Project, studying the genetics of beef tenderness and other carcass traits in fourteen breeds of cattle. He was also a member of the Ultrasound Guidelines Council that oversees certification of beef cattle ultrasound technicians and technology, and is a former board member of the National Beef Cattle Evaluation Consortium. He recently developed a program with the Angus Society of Australia to allow one of their youth to study at K-State each spring.

He remains involved in his family's Hereford and Angus seedstock operation. He and his wife Lisa have two 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.*