



Newsletter from the Department of Animal Sciences and Industry
213 Weber Hall, Kansas State University, Manhattan, KS 66506
785-532-6131 - www.asi.ksu.edu

WHAT'S NEW...

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

I'll admit that I'm the last person to lecture on equipment maintenance; I can barely change my own motor oil. But that doesn't change the fact that I've been berated by every good mechanic I've ever known on the value of periodic preventative maintenance.

Checking and changing oil, regular greasing, checking bearings and bushings, checking and changing filters, the list goes on. A small investment of time on a regular, scheduled, basis will, over time, save thousands of dollars and countless hours of lost productivity by preventing major mechanical malfunctions and providing a systematic means of detecting minor ones.

This tested and proven truism of heavy machinery is an excellent analogy for maintaining workplace relationships and morale. Late summer is a time when many agricultural operations have the opportunity to repair and recoup from the hectic spring season and when they must take the opportunity to prepare for the hectic fall work. This is true for both machinery and people.

Like mechanical devices, people need fuel, people need rest, and people sometimes wear out. In order to ensure that people are rested and refueled for the upcoming season, it is critical that managers monitor the well-being of the people in their charge, and perhaps even insist that people take time off. Suppressed tension could surface when the days get longer and the stress load increases causing a potentially volatile situation. This could easily result in friction between team members, increased sick days, or even an increase in accidents due to frustration and fatigue.

Managing people often requires uncanny observation of people's behavior and the circumstances surrounding it. Heading into a very critical season for your operation, be proactive about investigating people's attitudes, inter-relationships, stress level, energy level, and their need for some time off.

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

↪ **Research Assistant/Beef Cattle Research Center** - The Department of Animal Sciences and Industry is looking for Research Assistant for the Beef Cattle Research Center. This position is a full time, 12 months per year, non-tenure track, term position. B.S. in Animal Science or closely related field required with previous experience with research and data collection as well as demonstrated capabilities for project management. Experience in supervision of feedlot employees, operation of feedlot facilities, and conducting INAD studies is preferred. View complete position announcement at: <http://www.asi.ksu.edu/positions> Review of applications begins August 20, 2010 and continues until position is filled.

↪ **IRM Redbooks for Sale** – For more than twenty years, cattlemen have used the IRM Redbook to keep better records and track the profitability of their cow-calf operations. Some of the 2011 book highlights are calving records, Quality Assurance summary sheet, calf health records and more. The 2011 IRM Redbooks will be sold on a first come first serve basis. The price of the redbooks will be: For orders of less than 10 = \$5.25/book; Orders of 10 or more = \$5.00/book which includes postage. To order your supply of redbooks, please contact Lois (Ischrein@ksu.edu; 785-532-1267).

↳ **Feedlot Facts** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist

“Heat Stress Abatement II: Prevention IS the Cure”

This summer has been a hot one all across the state of Kansas, and the heat continues. As beef producers and as extension professionals, there is a great deal we can take away from this summer to make us better as we move forward.

The good news is that we can be sure that not EVERY summer will be as hot and oppressive as the summer of 2010. The bad news is that we can be certain to encounter some level of heat stress EVERY summer. It's our duty to prepare for exactly that inevitability. So that being said, what are the tools we have in our toolbox to be better prepared to deal with the heat next summer and those to follow?

1. Pasture cattle fare better than confined cattle during heat events. Pasture cattle can often find adequate shade and water sources 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.
3. Shade works. If properly constructed to allow convective heat to leave cattle and allow breezes to reach cattle, providing shades during extreme heat events may eliminate the need for emergency intervention. Proper orientation will also prevent permanent wet areas.
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.
5. Extra drinking water space provides comfort and alleviates the demand on the water system during peak heat hours.
6. Bedding with straw provides a lighter-colored, reflective surface to provide cattle a (relatively) cooler place to lie down and rest, thus reducing their activity and comfort during already stressful conditions.
7. Sprinkling cattle may be essential. Spraying cattle is costly, time-consuming, and can contribute to increased humidity within the pen---but it also may be the difference between life and death for extremely heat-stressed cattle. 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.

Let's make sure we get better next year:

1. Make improvements to facilities. Build mounds and shades and eliminate wind breaks.
2. Update our heat-stress remediation plans.
3. Have water spraying equipment, tanks, and straw bales on hand going into next summer.

As a very challenging summer winds to a close, we all need to make sure we maximize the value of some very difficult and costly lessons.

For more information, contact Chris Reinhardt, cdr3@ksu.edu.

↳ **Packaging Systems and Storage Times Serve as Post-Lethality Treatments for *Listeria***

monocytogenes on Whole Muscle Beef Jerky - Pieces of jerky inoculated with *L. monocytogenes* were packaged in one of four systems: heat sealed, heat sealed with oxygen scavenger, nitrogen flushed with oxygen scavenger, and vacuum. Packages were then stored at room temperature for 24, 48, and 72 hours and 30 days to determine whether storage time and packaging type would reduce *L. monocytogenes* on whole muscle beef jerky.

After 24 hours of ambient temperature storage, the heat sealed with oxygen scavenger and vacuum packaging treatments achieved a 1 log reduction of *L. monocytogenes*. The heat sealed and nitrogen flushed with oxygen scavenger packaging treatments did not achieve the 1 log reduction until 48 hours after packaging.

Bottom Line.... Small and large jerky processing facilities can use any of these four packaging systems in conjunction with a storage time of at least 48 hours as *L. monocytogenes* post-lethality control treatments. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Kelly Getty (785-532-2203; kgetty@ksu.edu) or Liz Boyle (785-532-1247; lboyle@ksu.edu).

↳ **Dried Distillers Grains Supplemented at Different Frequencies to Stocker Heifers Grazing Late-Season Flint Hills Native Pastures** - Stocker calves (n = 51, initial body weight = 619 lb) grazed late-season native grass pasture for 72 days (September 1 through November 11, 2009). Treatments were three frequencies of dried distillers grains supplementation: daily, every other day, or every third day. Dried distillers grains were fed at rates equivalent to 0.33% of body weight daily (dry basis), so similar amounts of dried distillers grains were fed to each group over the 72-day grazing season. Average daily gains were similar across treatments.

Bottom Line... With adequate grass resources, producers can reduce labor costs by supplementing dried distillers grains to cattle every second or third day without decreasing cattle performance. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Dale Blasi (785-532-5427; dblasi@ksu.edu) or Larry Hollis (785-532-1246; lhollis@ksu.edu).

↳ **Round Bale Alfalfa Processing Method Does Not Influence Feeding or Mixing Characteristics in a Total Mixed Ration** - The three processing method treatments were: 5 × 4 ft conventional alfalfa bales, 5 × 4 ft precut alfalfa bales, and 5 × 4 ft conventional alfalfa bales that were later tub ground. In the conventional baling method, alfalfa was fed through the header of a round baler and carried by packer fingers into a baling chamber. In the precut method, alfalfa was fed through the header of a round baler equipped with serrated knives that cut the alfalfa stems into 3- to 8-in. sections. Rations were prepared with a horizontal mixer and fed to 75 bulls at 2.33% (dry matter) of body weight for 15 days. Total mixed ration particle length was determined, and bale cores and discharge location (first, middle, or last third of bunk line) samples were analyzed for dry matter, crude protein, acid detergent fiber, and neutral detergent fiber.

Samples from different discharge locations and bale types had similar geometric mean lengths and standard deviations. Processing method did not influence (P>0.28) dry matter and crude protein. There was no difference in acid detergent fiber (P>0.17) between samples from the first and middle third, but samples from the first third tended to have higher (P=0.07) neutral detergent fiber. Acid detergent fiber and neutral detergent fiber levels of feed samples from the last third of the mixer discharge were greater (P=0.03) than those of samples from the beginning third and similar (P>0.44) to those of samples from the middle third.

Bottom Line... There was more ingredient segregation in total mixed rations made from conventional or precut bales than in rations made with tub-ground forage. Precutting forages resulted in responses similar to those for conventionally baled forages at the dietary inclusion levels and conditions of this experiment. 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).

↳ **Differences Among High, Medium, and Low Profit Dairy Operations: An Analysis of 2004-2008 Kansas Farm Management Association Dairy Enterprises** - The financial bottom line, or net income, is a key factor in determining how successful a dairy has been historically as well as an indicator of the financial ease or struggles the dairy might have in the future. What causes net income to vary from one operation to another is a key question for dairy farmers. For example, does milk price received, feed cost, total cost, or milk production have the greatest impact on net return variability? In this study, we evaluated Kansas Farm Management Dairy Enterprise data from the past 5 years to determine correlation of revenue, production, and cost factors among groups of high, medium, and low profit dairy operations. High-profit producers had larger operations, had slightly greater total costs (\$62.63 per cow), and received slightly lower milk prices (\$0.56/100 lb of milk) compared with low-profit producers. In contrast, the high profit group produced significantly more milk per cow. Milk price received and cost per cow did not affect profit nearly as much as total milk produced per cow. This study was conducted with data reported by small to midsize dairy herds. Further research should examine whether these results hold true for large herds. View the complete research report at www.asi.ksu.edu/dairy under the *Dairy Publications and Presentations* link. (This study conducted by K.M. Schulte and K.C. Dhuyvetter.)

↳ **Effects of Feeding Varied Levels of Balanced Protein on Growth Performance and Carcass Composition of Growing and Finishing Pigs** - A total of 1,003 barrows and gilts (PIC 337 × 1050, initially 113.5 lb) were used in an 88-d study to determine effects of various levels of balanced amino acid density on growth performance and carcass characteristics. Balanced amino acid refers to balancing the dietary amino acids according to the ideal protein ratio, at least for the first 4 limiting amino acids; the other amino acids may be at or higher than required levels. In this study, this balance was accomplished by using supplemental amino acids and formulating to meet the first 4 limiting amino acids: lysine, threonine, methionine, and tryptophan. Three experimental diets were tested using 6 replicate gilt and 7 replicate barrow pens per treatment. These diets were tested over 2 different phases, a grower phase (d 0 to 28) and a finishing phase (d 28 to 88). Dietary treatments included a diet that met the NRC (1998) requirements, a diet that met Evonik Degussa (Hanau, Germany) requirements, and a diet that was formulated to be 10% greater than Evonik Degussa recommendations. No gender × dietary treatment interactions were observed ($P > 0.30$) for any of the growth or carcass characteristics. During the growing phase, ADG and F/G improved (linear; $P < 0.03$) as amino acid density increased in the diet. Also, gilts had decreased ($P < 0.001$) ADFI and improved ($P < 0.001$) F/G from d 0 to 28 compared with barrows. During the finishing phase, no differences were observed ($P > 0.62$) in ADG, ADFI, or F/G from increasing dietary lysine or balanced protein levels. Gilts had decreased ($P < 0.001$) ADG and ADFI compared with barrows. Over the entire 88-d trial, F/G improved (linear; $P < 0.04$) and a trend was detected for improved (linear; $P < 0.06$) ADG as dietary amino acid density increased. No dietary treatment differences were observed ($P > 0.28$) for carcass yield, backfat depth, loin depth, percentage lean, live value, or calculated income over feed cost.

Bottom Line...In this experiment, increasing the amino acid density (dietary lysine level) over the NRC (1998) requirement offered improvements in the grower phase but not the finishing phase. 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, J.K. Htoo, M. Redshaw, R.D. Goodband, M.D. Tokach, S.S. Dritz, J.L. Nelssen, and J.M. DeRouchey.)

↳ **Effect of Constant or Step-Up Ractopamine HCl (Paylean) Feeding Programs on Growth Performance and Carcass Characteristics of Late-Finishing Pigs** - A total of 1,099 pigs (PIC 337 × C22; initial BW = 208 lb) were used to evaluate the effect of ractopamine HCl (RAC) feeding programs on growth and carcass traits of late-finishing pigs. Pigs were randomly assigned to 1 of 3 treatments balanced by average BW within gender. There were 14 pens per treatment and 26 pigs per pen. Treatments were a basal diet with: (1) 0 g/ton RAC for 28 d (control), (2) 0 g/ton RAC from d 0 to 7 and 4.5 g/ton RAC from d 7 to 28 (constant), and (3) 4.5 g/ton from d 0 to 14 and 6.75 g/ton from d 14 to 28 (step-up). Pig ADG, ADFI, and F/G were determined weekly, and carcass data were collected at the end of experiment. From d 0 to 7, step-up pigs had improved ($P < 0.04$) ADG, ADFI, and F/G compared with pigs in all other treatments. From d 0 to 14, RAC-fed pigs, regardless of the feeding program, had greater ($P < 0.01$) ADG and better ($P < 0.01$) F/G than control pigs. From d 14 to 28, although pigs in both RAC-fed treatments had greater ($P < 0.01$) ADG than control pigs, the step-up pigs had lower ($P < 0.05$) ADG and ADFI than the constant-fed pigs. Regardless of the RAC feeding program, all RAC-fed pigs exhibited better ($P < 0.01$) F/G than control pigs. From d 7 to 28, pigs fed the constant and step-up treatments exhibited greater ($P < 0.01$) ADG and better ($P < 0.05$) F/G than control pigs. However, when pigs fed the RAC-fed treatments were compared, step-up pigs had lower ($P < 0.01$) ADG and ADFI but similar ($P > 0.27$) F/G. Overall (d 0 to 28), ADFI ($P = 0.15$) was similar between treatments, but RAC-fed pigs had greater ($P < 0.01$) ADG than control pigs, which led to improved ($P < 0.01$) F/G. Pigs fed either RAC feeding strategy had similar performance overall. RAC-fed pigs had heavier ($P < 0.05$) carcass weights and tended ($P < 0.10$) to have greater yield than control pigs. Among the 3 groups, step-up pigs had the greatest ($P < 0.05$) percentage lean, loin depth, and fat-free lean index as well as the lowest ($P < 0.01$) backfat depth. The pigs fed either RAC program had greater ($P < 0.05$) revenue than control pigs. Although feed cost was higher ($P < 0.01$) in the RAC-fed pigs than in the control, income over feed cost tended ($P < 0.07$) to be higher for RAC-fed pigs than for control pigs.

Bottom Line....In conclusion, feeding a constant level of 4.5 g/ton RAC for 21 d improved growth similarly to feeding the 28-d step-up program. However, the 28-d RAC step-up program resulted in additional improvement in carcass traits of late-finishing pigs. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by J.Y. Jacela, S.S. Dritz, M.D. Tokach, J.M. DeRouchey, R.D. Goodband, and J.L. Nelssen.)

UPCOMING EVENTS...

↪ **KLA/K-STATE Ranch Management Field Days set for August** - Two KLA/K-State Field Days have been scheduled. The first event will be held on August 19th at the Meldrum Ranch in Cowley County. The Silkville Ranch in Franklin County will host the second field day on August 25th.

The Meldrum Ranch, located near Dexter, is owned and operated by the J.J. Gilliland family. The family grazes yearlings on a custom basis and runs a commercial cow-calf herd. Bichelmeyer Land and Cattle owns the Silkville Ranch, which is a commercial cow-calf operation. The ranch is near Williamsburg. Both field days will begin in the late afternoon and include educational breakout sessions. A complimentary evening meal will conclude each event.

A third field day will be scheduled in western Kansas this fall. For complete details, visit www.KLA.org.

↪ **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. 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. Round 4 of the quiz bowl will be held just prior to the award ceremony for all events. Information and past winners can be found at www.YouthLivestock.KSU.edu For questions, contact Brian Faris (brfaris@ksu.edu; 785-532-1255) or Kayla Lee (leek@ksu.edu; 785-532-1264).

↪ The **2010 KSU Beef Stocker Field Day** will be held on Thursday, September 30 at the KSU Beef Stocker Unit in Manhattan. The program includes:

- 9:30 a.m. Registration/coffee
- 10:15 a.m. Introductions
- 10:30 a.m. What is in Store for the Stockers? – *Dr. Glyn Tonsor*
- 11:15 a.m. Panel: Receiving Protocols: What We Do - Moderator: *Wes Ishmael, BEEF*;
Panel: *Frank Brazle, Rich Porter, Hal Mayer*
- 12:00 noon Lunch – View posters and demonstrations on innovations and applications for the stocker segment
- 1:30 p.m. Managing BRD Risk by Controlling Variation of Incoming Cattle with Micotil – *Dr. Jared Gould, Elanco*
- 2:15 p.m. Cutting Bull Management – *Dr. Hans Coetze*
- 2:30 – 5:00 p.m. *Breakout Sessions*
Rethinking Growth Implants: Where Do They Fit – *Dr. Gerry Kuhl*
Tips for the Mixer Wagon – *Dr. Scott Laudert*
Current Thinking on Mycoplasma – *Dr. Bob Larson*



The day will conclude with a good old-fashioned pit barbecue with dutch oven cobbler. Pre-registration is \$25 by September 15. For complete details and registration, visit www.KSUbeef.org. For more information, contact Dale Blasi (dblasi@ksu.edu; 785-532-5427).

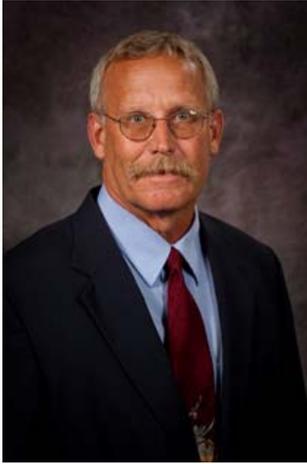
↪ **Developing and Implementing Your Company's HACCP Plan for Meat, Poultry, and Food Processors** will be held October 13-15, 2010, in Regnier Hall, University of Kansas Edwards Campus, 127th & Quivira Road, Overland Park. Registration for the 2.5 day International HACCP Alliance accredited workshop is online at <http://HACCP.unl.edu>. The workshop fee is \$295, and meets USDA training requirements to become a HACCP trained individual. For more information, contact Liz Boyle (lboyle@ksu.edu; 785-532-1247).

↪ The **2010 KSU Swine Day** will be held Thursday, November 18, at the KSU Alumni Center. Mark the date on your calendar and watch for more details.

CALENDAR OF UPCOMING EVENTS

Date	Event	Location
August 19, 2010	KLA/K-State Ranch Management Field Day	Dexter, KS
August 20-22, 2010	Flint Hills Beef Fest	Emporia, KS
August 21-22, 2010	4-H Livestock Sweepstakes	Manhattan
August 25, 2010	KLA/K-State Ranch Management Field Day	Williamsburg, KS
September 30, 2010	KSU Beef Stocker Field Day	Manhattan
October 13-15, 2010	HACCP Plan for Meat, Poultry and Food Processors	Overland Park, KS
November 18, 2010	KSU Swine Day	Manhattan

AS&I FACULTY SPOTLIGHT



Charles Lee (clee@k-state.edu; 785-532-5734)
Extension Specialist - Wildlife Control/Instructor

Charlie completed a B.S. degree in 1975 at Kansas State University in Wildlife Biology. After several years of business and being involved with the family farm and feedlot he returned to Kansas State where he completed a M.S. degree in 1988 in Animal Science. He is currently a Ph.D. candidate in Animal Science at Kansas State. He previously worked for Kansas Department of Wildlife and Parks for six years directing private land wildlife management programs and Farm Bill conservation issues. Charlie has been employed by K-State Research and Extension for 13 years, first as an extension assistant and now as Extension Specialist, Wildlife. Responsibilities include conducting a statewide program in wildlife damage control, wildlife enhancement on private lands, youth outdoor environmental programs, and aquaculture. Current areas of interest include prairie dog and cattle interactions, bird damage control at feedlots and rodent damage in conservation tillage systems.

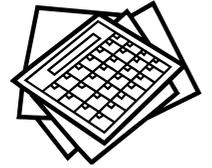


David Grieger (dgrieger@k-state.edu; 785-532-1229)
Associate Professor/Beef Cattle Reproduction

Dr. Grieger is from a small town in Indiana, just like John Mellencamp. His major teaching and research interests are applied and basic reproductive physiology with an emphasis in cattle. David teaches courses that include topics on estrous synchronization, ultrasonography, pregnancy diagnosis, and calving. He also teaches a course on applications of biotechnology to animal agriculture and, with Dr. Duane Davis, he co-teaches Farm Animal Reproduction each spring. In addition to his teaching responsibilities he advises undergraduate students. His applied research interests focus on estrous synchronization and timed artificial insemination protocols for beef heifers. David's basic research focuses on genes important to reproductive function in livestock. He has a 70% Teaching and 30% Research appointment within the department. (He also really likes to fish, but Charlie never takes him).

WHAT PRODUCERS SHOULD BE THINKING ABOUT...

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



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

Cowherd Management

- Given unforeseen weather and market price volatility, price byproducts, grains and other feedstuffs on a per nutrient basis.
- Do you have sufficient harvested forage to encounter a potentially severe winter feeding season? Conduct an inventory of harvested forages and determine if you have an adequate supply on hand.
- Pregnancy Check.
- Cull cows because of:
 - ◆ Open.
 - ◆ Late vs. Early calving.
 - ◆ Soundness - udder, feet/legs, eyes, teeth, disposition.
 - ◆ Productivity - Most Probable Producing Ability (from herd performance records).
 - ◆ Disposition
- Body Condition Score
 - ◆ Provide thin cows (body condition score 3's and 4's) extra feed now. Take advantage of weather, stage of pregnancy, lower nutrient requirements, and quality feedstuffs.
- If body condition scores warrant it, you may want to start feeding supplements in late October 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
 - (heifers may need more supplement than older cows)
 - ◆ Supplement nutrients that are most deficient.
 - ◆ Compare supplements on a cost per pound of nutrient basis.
 - ◆ KSU research has reported early winter supplementation is not necessary if grazing forage supplies are adequate. Third trimester cows have had the ability to achieve their target calving weights with supplementation.
- Utilize crop residues. Grazing crop aftermath can reduce daily cow costs by 50¢ or more.
 - ◆ Strip graze or rotate fields to improve grazing efficiency.
 - ◆ Average body condition cows can be grazed at 1 to 2 acres/cow for 30 days assuming normal weather.
- Consider feeding cull cows to increase value, body weight, and utilize cheap feedstuffs. Seasonal price trends have allowed producers to take advantage of maximum profit opportunities with cull cow feeding programs. Healthy cows can gain extremely well on well balanced diets.
- Check individual identification of cows. Replace lost tags or redo brands.

Calf Management

- ☑ Wean calves:
 - ◆ Reduce stress. Provide a clean, dust-free, comfortable environment.
 - ◆ Provide balanced nutritional program to promote weight gain and health.
 - ◆ Observe feed and water intake. Healthy, problem free calves have large appetites.
 - ◆ Observe calves frequently, early detection of sickness reduces medical costs and lost performance.
 - ◆ Vaccinate calves and control internal/external parasites through veterinary consultation (ideally done prior to weaning).
 - ◆ Vaccinate all replacement heifer candidates for brucellosis if within 4-10 months of age.
 - ◆ Use implants and feed additives to improve efficient animal performance.
- ☑ Weigh all calves individually. Allows for correct sorting, herd culling, growing programs, replacement heifer selection, and marketing plans.
- ☑ Participate in Whole Herd Rewards, Performance Plus, and(or) other ranch record/performance systems.
- ☑ Finalize plans to merchandise calves or to background through yearling or finishing programs.
 - ◆ Consider feedstuff availability.
 - ◆ Limit feeding high concentrate diets may be a profitable feeding program.
- ☑ Select replacement heifers which are:
 - ◆ Born early in the calving season. This should increase the number of yearling heifers bred during the early days of the subsequent breeding season.
 - ◆ Daughters of above average producing cows. Performance traits are moderately heritable traits.
 - ◆ Of the proper frame size to compliment desired mature size and weight.
 - ◆ Structurally correct. Avoid breeding udder, feet and leg problems into the herd.
- ☑ Vaccinate replacement heifers with first round of viral vaccines.
- ☑ Plan replacement heifer nutrition program so that heifers will be at their “target weight” (65% of their mature weight) by the start of the breeding season.

Forage/Pasture Management

- ☑ Observe pasture weed problems to aid in planning control methods needed next spring.
- ☑ Monitor grazing conditions and rotate pastures if possible and(or) practical.
- ☑ Plan winter nutritional program through pasture and forage management.
- ☑ For stocker cattle and replacement heifers, supplement maturing grasses with an acceptable degradable intake protein/ionophore(feed additive) type supplement.

General Management

- ☑ Avoid unnecessary stress - Handle cows and calves to reduce shrink, sustain good health, and minimize sickness.
- ☑ Forage analyze for nitrate and nutrient content. Use these to develop winter feeding programs.
- ☑ Repair, replace and improve facilities.
- ☑ 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.*