

**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](http://www.asi.ksu.edu)**

# UPCOMING EVENTS...

↪ Kansas State University will host a **Sheep & Goat Conference** on November 4-6, 2011 on the KSU campus. The objective of the conference is to educate sheep and/or goat producers on current industry practices and trends, and provide an introduction for new producers to the respective industries. The tentative schedule includes:

## **Friday, November 4 – Live Animal Evaluation**

- 1:00 p.m. Welcome
- 1:30 p.m. Market Animal Evaluation  
Sheep – *Dr. Frank Craddock*; Goats – *Mr. Preston Faris*
- 3:30 p.m. Breeding Animal Evaluation: Keep/Cull  
Sheep – *Dr. Frank Craddock*; Goats – *Mr. Preston Faris*
- 5:00 p.m. Break
- 6:00 p.m. Dinner and Entertainment

## **Saturday, November 5**

- 8:00 a.m. Coffee and Donuts
- 9:00 a.m. Commercial Crossbreeding Programs  
Sheep – *Dr. Kreg Leymaster*; Goats – *Mr. Preston Faris*
- 10:15 a.m. Break
- 10:45 a.m. Multi-species Grazing – *Dr. Brian Faris*
- 12:00 noon Lunch
- 1:00 p.m. – 5:45 p.m. Breakout Sessions including:
  - Predator Management & Guardian Dogs – *Dr. Charlie Lee and/or Mr. Bob Buchholz*
  - Common Diseases and Abortion Storm Prevention and Treatment – *Dr. Shelie Laflin*
  - Managing Internal and External Parasites – *Dr. Brian Faris and/or Dr. Frank Craddock*
  - Working with Natural Fiber – *Mrs. Melissa Urick*
  - Use of distiller's grains in sheep and goat diets – *Dr. Justin Waggoner*
  - Fencing and Facilities – *Dr. Frank Craddock*
  - Reproductive Management & New Technologies – *Dr. Brian Faris*
  - More than meat: Milk, cheese, dips and more - TBA
  - Disbudding, Hoof trimming, Tattooing – *Mr. Preston Faris*
- 6:30 p.m. Dinner

## **Sunday, November 6 – Reproduction and Carcass Evaluation**

- 8:30 a.m. Marketing Value Added Lamb/Chevon Products – *Mr. Steve Burton*
- 10:00 a.m. Break
- 10:15 a.m. Carcass Evaluation – *Dr. Terry Houser*
- 11:45 a.m. Closing Remarks
- 12:00 noon Adjourn

Registration for this educational weekend is \$100 for the primary registrant and \$75.00 for additional attendees from the same family or company if received by October 21. Registration is also available for Saturday only. For a complete schedule and registration information, visit [www.asi.ksu.edu/sheep](http://www.asi.ksu.edu/sheep) and click on the Upcoming Events tab. If you have any questions or would like more information, please contact Dr. Brian Faris at 785-532-1255 or [brfaris@ksu.edu](mailto:brfaris@ksu.edu).

↪ The **International Conference on Feed Efficiency in Swine** will be held November 8-9, 2011 in Omaha, Nebraska. This conference, hosted by Kansas State University and Iowa State University, is being organized as a forum to present the full breadth of knowledge on swine feed efficiency. As such, it will cover topics that range from the influence of feed processing on feed efficiency, or the role of dietary amino acids (or energy) on feed efficiency through to the role of genetic selection on feed efficiency. The program will appeal to anyone involved in the more technical aspects of pork production, including producers, nutritionists, veterinarians, geneticists, etc. Information on the complete program, registration, lodging, etc. can be found at <http://www.ans.iastate.edu/ICFES/?pg=index>. For more information, contact Mike Tokach ([mtokach@ksu.edu](mailto:mtokach@ksu.edu); 785-532-2032) or Joel DeRouchey ([jderouch@ksu.edu](mailto:jderouch@ksu.edu); 785-532-2280).

↪ The **2011 Dairy Cattle Reproduction Council Annual Meeting** will be held November 10-11 at the Kansas City Airport Hilton Hotel. All dairy producers, veterinary practitioners, dairy industry personnel, and members of academia are invited. To register for the convention and more information, go to [www.dcrccouncil.org](http://www.dcrccouncil.org). The program will begin with a DCRC-sponsored continental breakfast at 6:30 a.m. on Thursday, November 10<sup>th</sup> and conclude with closing remarks at 12:00 p.m. on Friday, November 11<sup>th</sup>.

The Dairy Cattle Reproduction Council (DCRC) was organized in 2005 and strives to be an organization that addresses unmet needs of the dairy sector in this area. DCRC welcomes all who wish to contribute to the organization and urges individuals to assume leadership responsibilities. For more information, contact Dr. Jeff Stevenson ([jss@k-state.edu](mailto:jss@k-state.edu); 785-532-1243).

↪ The **23rd Range Beef Cow Symposium** will be Nov. 29 - Dec. 1, 2011 in Mitchell, Nebraska. For more information, contact Sandy Johnson, [sandyj@ksu.edu](mailto:sandyj@ksu.edu).

↪ The **2011 KSU Swine Day** will be held Thursday, November 17, at the KSU Alumni Center. The schedule for the day includes:

8:00 a.m. – 5:00 p.m. Trade Show

9:45 a.m. *Welcome*

*Dr. Ken Odde, Department Head, Animal Sciences and Industry*

10:00 a.m. *Current K-State Swine Research to Help Improve Net Return of a Swine Business*  
*KSU Swine Team*

11:00 a.m. *Failure to Thrive: The Effect of Vitamin D at Processing*

*Dr. Steve Henry, Dr. Lisa Tokach and Dr. Megan Potter, Abilene Animal Hospital*

12:00 noon Lunch with Trade Show

1:30 p.m. Current K-State Swine Research Information - KSU Swine Team

2:00 p.m. Global Grain and Livestock Outlook: How It Will Impact You

*Mr. Joe Kerns, International Agribusiness Group, Ames, Iowa*

3:30 p.m. Reception with K-State Ice Cream

Pre-registration fee is \$25 per participant by November 10; with registration at the door \$35 per participant. There is no charge for any students if they are pre-registered. Visit [www.KSUswine.org](http://www.KSUswine.org) for complete schedule and registration information. For more information, contact Jim Nelssen ([jnelssen@ksu.edu](mailto:jnelssen@ksu.edu); 785-532-1251).

↪ **Kansas Junior Beef Producer Day: CHANGE OF DATE** - Kansas Junior Beef Producer Day will be changed to January 7, 2012 at Weber Hall and Arena due to a scheduling conflict with K-State's last home football game. The event will feature K-State Faculty and staff covering topics such as: Selecting Your Youth Beef Project, Facilities and General Care, Nutrition, Showmanship and Nose Printing/Tattooing/Fitting Demonstration. Additional topics, tailored to age will include Breeds and Beef Identification, Meat and Carcass Evaluation, and Beef Quality Assurance. More information and registration forms will be posted on the Youth Livestock Programs website [www.YouthLivestock.KSU.edu](http://www.YouthLivestock.KSU.edu) by November 1.

↪ The **2012 Winter Ranch Management Seminar** has been scheduled for Tuesday, January 10, 2012 in Weber Hall. Mark the date on your calendar and watch for more details.

<b>CALENDAR OF UPCOMING EVENTS</b>		
<b>Date</b>	<b>Event</b>	<b>Location</b>
November 4-6, 2011	KSU Sheep and Meat Goat Conference	Manhattan
November 8-9, 2011	International Conference on Feed Efficiency in Swine	Omaha, NE
November 10-11, 2011	Dairy Cattle Reproduction Council Annual Meeting	Kansas City, MO
November 17, 2011	KSU Swine Day	Manhattan
Nov. 29 – Dec. 1, 2011	Range Beef Cow Symposium	Mitchell, NE
January 7, 2012	Kansas Junior Beef Day	Manhattan
January 10, 2012	Winter Ranch Management Seminar	Manhattan

# WHAT'S NEW....

↪ **Management Minute** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist

## *“Let’s change something”*

Ranchers are as independent thinkers and actors as any group of people in America---it’s perhaps their defining trait. But ranchers have also proven to America’s beef consumers that The Beef Industry can make positive changes when those changes are mutually determined to be in the best interest of the cattle and the product we produce.

Moving injections from the top butt to the neck was a “no-brainer”---except that we ruined 22% of our top butts annually since the invention of the needle and syringe. That means we were not using our brains, and that SOMEBODY, finally, had to engage their brain to get the rest of us to change something that had always been done. We all agree it’s better now.

It’s been said that we should run our operation like there’s a busload of 3<sup>rd</sup> graders coming from town for a tour. What are you doing today that you’d rather your consumers not know about? If there’s anything, it needs to change and go away. The easiest way to take ammo out of your enemy’s weapon is by not giving it to them in the first place.

It’s time to admit and identify those things that we do poorly as an industry, seek out ways to improve those practices, make the hard changes on our own operations, and condemn those who refuse to change. This should be as easy and as important to us as moving the injections to the neck and sub-Q.

Sorting sticks, rattle-paddles, and electric prods are tools, not weapons. If we’re using contact on the cattle more than 5% of the time, something is wrong with our handling, our facilities, or both. Cattle will flow through a functional, well-designed facility based on the handler’s body position. If the cattle don’t know where you want them to go, yelling or prodding only increases their confusion and may lead to dangerous situations. It’s also been said, “The cattle are never wrong.” They’re designed, as prey animals, to go where the handler asks them to go, if the message is clear and the escape path is obvious. If they don’t go, it’s because something is wrong with the handler’s message, the facilities, or both.

We should constantly be in the process of assessing our operations with respect to cattle flow and handling. If we’ve got more than 5% of cattle jumping, running, slipping or falling when coming out of the chute, there is something wrong with the facilities, the handling, or both. If the result of a processing event is fear, discomfort, and confusion on the part of the cattle, we can be fairly certain, the next time we process these animals will be harder, not easier. Let’s strive to always get better.

Venturing to tell cattle people how to more effectively handle cattle is a risky proposition, but fortune favors the bold. 30 years ago we just *knew* that injecting in the top butt was ok; now our jaw drops if we see someone inject into that area. Dogma can change. When the majority of the beef industry sees and admits the errors of our ways, we can make tremendous change.

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

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

## *“Body Condition Scoring Beef Cows”*

After this record-hot summer of 2011, we’ll need to be vigilant to the condition in which our cows go into winter. If they’re thin at calving time, we will sacrifice colostrum quality and quantity, calf vigor, and subsequent fertility during next summer’s breeding season.

Body condition score (BCS) on a beef cow is the closest thing we have to a dip stick for determining, at a glance, her nutritional status. But scoring cows properly and really benefitting from this tool requires a bit more effort and observation than simply looking and thinking, “They look a little thin”. The reason for talking about BCS *now* is that there’s still time to adjust nutrient supply to get the cows into the target BCS by calving time.

To properly evaluate an individual cow, you should look at her topline, brisket, ribs, flank, round, and tail head. The “ideal” or “target” BCS for cows at the time of calving is the BCS = 5. This cow will show the last 1-2 ribs first thing in the morning before feeding, have good fullness of muscle in the round with definite muscle definition, the spine will be apparent but individual vertebrae will not be discernable, and there are no obvious fat depots behind the shoulder or around the tailhead. We would say this cow has a good “bloom”. A borderline thin cow (BCS = 4) will clearly show 3-4 ribs first thing in the morning, will have no obvious fat depots in the brisket or tailhead, and you can see the

individual vertebrae along the topline. The cow still shows some muscle through the round, and you could say she looks “healthy but thin”. In a borderline fleshy cow (BCS = 6) the ribs and vertebrae will not be obvious, as they are covered by fat. The muscling down through the round will be plump and full, but muscle definition is still apparent, and there will be small but noticeable fat deposits behind the shoulder, in the flank, brisket, and around the tailhead.

A change in BCS (from BCS 4 to 5, for example) requires addition of from 75 to 100 lbs live body weight, depending on the mature size or frame size of the cows. If you’re 2 months from the start of calving and need to add 1 BCS, you’ll need to feed the cows for maintenance, last 1/3 of gestation, and an additional 1.0 to 1.5 lb/day gain. This means increasing the amount of good quality hay as well as the amount of supplement. Thin cows (BCS 4 or below) can be separated off and fed a higher plane of nutrition. The argument can be made that this creates “welfare cows”. However, good record-keeping will indicate whether these cows are perennial “hard-keepers” or if they are simply too young or too old to compete with the mature cows. If they’re too young, another year of maturity should cure this; if they’re too old, you may consider culling them after weaning time. The key here is that good record keeping allows YOU to cull intentionally based on productivity, not based on lack of observation and management.

Cows which calve below a BCS 5 will delay their return to estrus and breed back late. If these cows do not maintain a 365-day calving cycle, they could after 1-2 late breedings effectively “cull themselves” due to being open at preg check time. Young cows are especially susceptible to this possibility because they are gestating a calf, nursing a calf, and still growing frame and muscle themselves. Unfortunately, young cows are the future of your herd and possibly your most progressive genetics. Hopefully these cows aren’t culled simply for lack of nutrients.

Body condition scoring the herd is a simple process, and can be done on a large paper tablet. Make columns for BCS 3, 4, 5, and 6 and as you pass through the herd first thing in the morning, make a tick mark for each cow in each of the columns. Multiply the number of 3’s by 3, the 4’s by 4, etc., add up the total score and divide by the total number of tick marks. This should give you an average BCS for the herd. But more important than the average is how many cows you’ve got in the critical scores of 3 and 4. 4’s can be easily fed into the 5 range, but 3’s could potentially not cycle in time to stay in the herd. If 3’s can be fed up into the 4-range, they’ll at least have a chance to breed, albeit late during the normal breeding season.

Take a little time to truly, critically evaluate the nutrient status of your cow herd this winter, and use this simple, but powerful tool to manage the fertility and health of your herd going into next spring, and give yourself full control over the genetics of your herd for years to come.

For more information, contact Chris Reinhardt at [cdr3@ksu.edu](mailto:cdr3@ksu.edu) or 785-532-1672.

↪ **2011 KSU Beef Stocker Field Day Proceedings available online** – Topics for this year’s KSU Beef Stocker Field Day included a Cattle Market Outlook, How Much Can I Pay for Grass, A Systems Perspective to Managing Yearlings, and much more. A copy of the proceedings is available at [www.KSUbeef.org](http://www.KSUbeef.org) under the Stocker Conference link. Printed copies are available for \$10.00 each. If you are interested in receiving the printed version, contact Lois Schreiner (785-532-1267; [lschrein@ksu.edu](mailto:lschrein@ksu.edu)).

↪ **IRM Redbooks for Sale** – The 2012 IRM Redbooks have arrived and 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 ([lschrein@ksu.edu](mailto:lschrein@ksu.edu); 785-532-1267).

↪ **Is GnRH Necessary at CIDR Insertion Using a 7-Day CIDR Synchronization Protocol for Beef Heifers?** - Many producers use an injection of GnRH when they insert a CIDR for estrous synchronization. To test the effectiveness of this strategy, we compared groups of heifers synchronized and inseminated with or without an injection of GnRH when the CIDR is inserted. We found similar pregnancy rates, synchronization rates, and conception rates regardless of whether an initial injection of GnRH was given using a 7-day CIDR protocol in beef heifers.

**Bottom Line...** An injection of GnRH is not necessary when implementing a 7-day CIDR protocol synchronization method for beef heifers. View the complete research report at [www.asi.ksu.edu/cattlemensday](http://www.asi.ksu.edu/cattlemensday). For more information, contact David Grieger (785-532-1229; [dgrieger@ksu.edu](mailto:dgrieger@ksu.edu)) or Larry Hollis (785-532-1246; [lhollis@ksu.edu](mailto:lhollis@ksu.edu)).



↳ **Nutrient Restriction Does Not Affect Implant Efficacy** - Crossbred steers (n = 16; 650 lb) were used in a 2 × 2 factorial arrangement of treatments to evaluate the effects of nutritional plane and implant status on growth, plasma urea nitrogen, and insulin-like growth factor 1. All calves were individually fed a common, pelleted, complete diet. Four calves each were randomly assigned to receive: (1) implant + 2x maintenance intake; (2) implant + 1x maintenance intake; (3) no implant + 2x maintenance intake; or (4) no implant + 1x maintenance intake. Blood samples were drawn on days 0, 14, and 28 of the study for analysis of plasma urea nitrogen and insulin-like growth factor 1. Animals fed at 2x the maintenance feeding level had greater average daily gain and greater plasma concentrations of plasma urea nitrogen and insulin-like growth factor 1 than animals fed at 1x the maintenance feeding level; however, neither the implant nor the interaction between implant and diet showed any effects.

**Bottom Line...** Nutrient intake, but not implant status, affected plasma hormones and metabolites in cattle under the conditions of our study. View the complete research report at [www.asi.ksu.edu/cattlemensday](http://www.asi.ksu.edu/cattlemensday). For more information, contact Dan Thomson (785-532-4254; [dthomson@vet.ksu.edu](mailto:dthomson@vet.ksu.edu)) or Chris Reinhardt (785-532-1672; [cdr3@ksu.edu](mailto:cdr3@ksu.edu)).

↳ **The Effects of Diet Form and Feeder Design on the Growth Performance and Carcass Characteristics of Growing-finishing Pigs** - A total of 1,290 growing pigs (PIC 1050 × 337, initially 103.1 lb) were used in a 91-d study to evaluate the effects of diet form (meal vs. pellet) and feeder design (conventional dry vs wet-dry) on finisher pig performance. The treatments were arranged in a 2 × 2 factorial with 11 replications per treatment and 25 to 27 pigs per pen. Half of the pens were equipped with a 5-hole conventional dry feeder while the other half had a double-sided wet-dry feeder. All pigs were fed a corn-soybean meal-based diet containing 45 to 65% by-products in 4 phases. The only difference among treatments was diet form (meal vs. pellet). Pen weights and feed disappearance were measured on d 0, 16, 21, 43, 57, 71, and 91. Pictures of feeder pans were taken during Phase 4 and then evaluated by a panel of 4 for percentage of pan coverage. From d 0 to 91, no diet form × feeder design interactions were observed for ADG. Pigs fed pelleted diets had a tendency for improved ADG compared to those given meal diets. In addition, pigs fed with wet-dry feeders had improved ADG compared to those with conventional dry feeders. A diet form × feeder design interaction was observed for ADFI. When using a wet-dry feeder, pigs given meal diets had similar ADFI as those fed pelleted diets. However, when using dry feeders, pigs given pelleted diets had a much greater ADFI than pigs fed meal diets. In addition, a diet form × feeder design interaction was observed for F/G. Pigs fed both meal and pelleted diets via wet-dry feeders had similar F/G, but pigs fed pelleted diets in a conventional dry feeder had poorer F/G compared to pigs given meal diets in a conventional dry feeder. The pellets used during this experiment had average percentage fines of 35.1 ± 19% and an average pellet durability index (PDI) of 75.8 ± 8.4. We attribute the interactions to the poor pellet quality, leading to more feed wastage from the dry feeders.

**Bottom Line...** These results suggest that pellet quality is important to decrease feed wastage and sorting by the pigs and to optimize growth performance. More information is available on this experiment and others in the KSU Swine Day Report at [www.KSUswine.org](http://www.KSUswine.org). (This study conducted by A.J. Myers, J.R. Bergstrom, M.D. Tokach, S.S. Dritz, R.D. Goodband, J.M. DeRouche, and J.L. Nelssen.)

↳ **Effects of Increasing Stocking Density on Finishing Pig Performance** - A total of 1,201 finishing pigs (initially 63 lb) were used in a 99-d growth trial to evaluate the effects of increasing stocking density on finishing pig growth performance. Single-sex pens of barrows and gilts were blocked to minimize variation due to gender and barn location. There were 12 pens per block with 3 replication pens per treatment within each block. Pens of pigs were randomly allotted to 1 of 4 treatments with 12 pens per treatment. Treatments were stocking pens with 22, 24, 26, or 28 pigs each, allowing 8.2, 7.5, 6.9, and 6.4 ft<sup>2</sup> per pig, respectively. Pens of pigs were weighed and feed intake was determined on d 0, 14, 28, 42, 56, 70, 84, and 99 to calculate ADG, ADFI, and F/G. Pigs were fed common diets throughout the trial. No adjustments were made at the pen level to account for space increases because of removed pigs. Overall, as stocking density increased, ADG and ADFI decreased, but there were no differences in F/G. These performance differences resulted in off-test (d 99) pig weights decreasing as stocking density increased.

**Bottom Line...** These data indicate that in this commercial barn, finisher pig ADG and ADFI improved as the number of pigs in each pen was reduced. However, based on an economic model, income over feed and facility cost per pig placed was numerically optimized when pens were stocked with 24 pigs each, allowing 7.5 ft<sup>2</sup> of floor space per pig. More information is available on this experiment and others in the KSU Swine Day Report at [www.KSUswine.org](http://www.KSUswine.org). (This study conducted by M.L. Potter, S.S. Dritz, M.D. Tokach, J.M. DeRouche, R.D. Goodband, and J.L. Nelssen.)

# AS&I FACULTY SPOTLIGHT



**John Unruh (junruh@k-state.edu; 785-532-1245)  
Professor/Chair Food Science Undergraduate Program**

Dr. John Unruh grew up on a diversified crop and registered Angus farm near Warden, Washington. The family ranch was also involved in commercial sheep production and was a charter member of the American Simmental Association.

John attended Washington State University and received his B.S. and M.S. degrees in Animal Sciences. He enjoyed competition on the Livestock and Live Animal and Carcass Evaluation Teams and later coached both teams while pursuing a M.S. degree. John received his Ph.D. in Meat Science (Animal Sciences and Industry) at Kansas State University.

Following completion of his graduate studies, John joined the faculty in the Department of Animal Sciences at Washington State University. He was the State Extension Specialist for Meat Science and Swine Production and later became Project Leader for Livestock Production, Management and Marketing.

John returned to KSU accepting a teaching and research position in the Department of Animal Sciences and Industry. While coaching the meat judging team from 1989 to 1996, the team won two national and four reserve national championships. Internationally, he has worked with university and producer organizations in Mexico and Costa Rica to improve the production, composition, and quality of meat. He has also led student agriculture study abroad groups to Costa Rica, Mexico, New Zealand, and Italy. His research interests integrate live animal production and management, carcass composition and quality, and sensory evaluation of meat.

In 2009, John became chair of the Undergraduate Food Science program. He has been recognized with several teaching awards including the American Meat Science Association Distinguished Teaching Award and Meat Judging Meritorious Service Award. John and his wife, Judy, live in Manhattan, KS and enjoy a variety of outdoor activities.



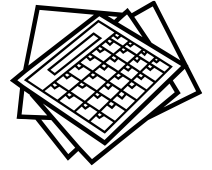
**Ron Pope (rvpope@k-state.edu; 785-532-5404)  
Instructor/Beef Cattle Production and Management**

Ron Pope is from Oklahoma and Texas. He teaches three sections of ASI 105, Animal Sciences & Industry laboratory, during the fall semester and two sections in the spring semester. He advises 45 undergraduate students. He is also responsible for conducting tours of the department for outside visitors. This includes school field trips, prospective students, and interested groups.

Ron and his wife Nita have four children (all K-State alums), two grandsons, Blake and Rhett, and one granddaughter, Vanessa. Their children are Russell ASI, BS 1999 and his wife Misty EDEL, BS 1999; Marie EDEL, BS 2002 and her husband Jeff Jones ASI, BS 1999; Bill ASI, BS 2005 and his wife Heather AS, BS 2005, DVM 2010 from Colorado State University; and Ronny ASI, BS 2006 and his wife Kelsey AGECE, BS 2008, MS 2009.

# WHAT PRODUCERS SHOULD BE THINKING ABOUT...

## WHAT PRODUCERS SHOULD BE THINKING ABOUT IN DECEMBER.....



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

#### **Cow herd management for spring-calving cows**

- In late fall and early winter, start feeding supplement to mature cows using these guidelines:
  - Dry grass — 1-2 pounds (lb.) per day of a 40% crude protein (CP) supplement
  - Dry grass — 3-4 lb. per day of a 20% CP supplement
  - Dry grass — 10 lb. good nonlegume hay, no supplement needed
- Compare supplements based on cost per pound of nutrient.
- Utilize crop residues.
- Strip-graze or rotate cattle to improve grazing efficiency.
- Cows in average body condition can be grazed at 1-2 acres per cow for 30 days, assuming normal weather. Available forage is directly related to grain production levels.
- Limiting nutrients are usually rumen degradable protein, trace minerals and vitamin A.
- Control lice.

#### **General management**

- Document your cost of production by participating in Standardized Performance Analysis (SPA) programs.
- Review management decisions; lower your costs per unit of production.
- Check your financial management plan and make appropriate adjustments before the end of the year.

*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](mailto:lschrein@ksu.edu), or phone 785-532-1267.*