

NEWS FROM KSU ANIMAL SCIENCES

November, 2011



WEBER HALL
ANIMAL SCIENCE & INDUSTRY



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

UPCOMING EVENTS...

- ↳ It's not too late to attend the **2011 KSU Swine Day** which 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 CreamFor more information, contact Jim Nelssen (jnelssen@ksu.edu; 785-532-1251).
- ↳ 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.
- ↳ **Human Resources for Agricultural Producers** will be held on December 13, 2011 at the Mayberries Restaurant in Washington, KS. This is an opportunity learn how to advertise, select, and train good employees as well as get familiar with legal issues of being an employer. For more information, contact Robin Slattery (785-325-2121; rslat@ksu.edu).
- ↳ **Kansas Junior Beef Producer Day** will be held on January 7, 2012 at Weber Hall and Arena. 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 by November 1.
- ↳ Make plans now to attend the **K-State Winter Ranch Management Seminar** to be held on Tuesday, January 10, 2012, from 4:00 – 8:30 p.m. Locations for the event include Manhattan (Kansas State University), Ashland (Ashland Community Center), Osborne (Kansas National Guard Armory), Highland (Highland Community College) and Russell (Russell County 4-H Building). The tentative schedule is as follows:
 - 4:00 p.m. Registration
 - 4:30 p.m. Winter Ration Development
 - 5:15 p.m. Ranch Management Focus (Trey Patterson, Padlock Ranch, via webinar)
 - 6:00 p.m. Dinner
 - 7:00 p.m. Cattle Business Outlook (Glynn Tonsor, K-State Ag Economist, via webinar)
 - 7:45 p.m. Hunting Lease Management

The webinar speakers will be addressing the audiences at all 5 locations simultaneously. Local speakers at each location will address winter ration development using a computerized ration balancing program and diversifying ranch income with hunting leases. Brochures for the event will be available through your local county office shortly and will be available at www.KSUbef.org. For additional information, contact Larry Hollis (lholli@ksu.edu; 785-532-1246).

- ↳ **Cattle Disease Identification and Management** will be held on January 19, 2012 from 5:00 – 8:00 p.m. at the American Legion in Linn, KS. This is an opportunity to learn how to identify, prevent and manage common cattle diseases as well as understand how vaccines work and proper administration. For more information, contact Robin Slattery (785-325-2121; rslat@ksu.edu).
- ↳ **EPD/Genetics School** will be held on January 25, 2012 from 11:30 a.m. to 3:00 p.m. at the Community Hall in Cuba, KS. This is an opportunity to learn how to evaluate bulls and heifers using EPD's to select the best genetics for your environment and management style as well as evaluate the genetics of your herd relative to the goals of your operation. For more information, contact Robin Slattery (785-325-2121; rslat@ksu.edu).
- ↳ **Prescribed Burning Workshop** will be held on February 16, 2012 from 5:30 – 9:00 p.m. at the Fire Department Meeting Room in Miltonvale, KS. This program covers the reasons why to burn, when to burn to meet your pasture goals, and procedures to conduct a safe and effective burn. For more information, contact Robin Slattery (785-325-2121; rslat@ksu.edu).
- ↳ The **2012 KSU Swine Profitability Conference** will be held Tuesday, February 28 in Forum Hall of the K-State Student Union. A great program has been lined up including presentations from Dr. Gene Nemechek, Tyson Foods; Kent Condray, Clifton, KS; Glynn Tonsor, KSU; and Cindy Cunningham, National Pork Board as well as a presentation on "Humor for the Heart of Agriculture" from Damian Mason. The schedule is as follows:

9:15 a.m.	Coffee and Donuts
9:30 a.m.	<i>Special Lecture: Jack and Pat Anderson Lecture in Swine Health Management: Lessons from Large Production Systems that Can Help the Competitiveness of Land-Based Producers - Dr. Gene Nemechek, Tyson Foods, Springdale, AR</i>
10:30 a.m.	What Have I Done to Make My Land-based System Successful - <i>Kent Condray, Clifton, KS</i>
11:15 a.m.	Short and Long-Term Price Outlook: How Will Consumer Preferences on the Welfare Front Impact Your Operation? - <i>Dr. Glynn Tonsor, Kansas State University</i>
12:00 noon	Lunch
1:15 p.m.	How to Keep Your Swine Operation off You-Tube - <i>Cindy Cunningham, National Pork Board</i>
2:00 p.m.	Humor for the Heart of Agriculture - <i>Damian Mason</i>
3:00 p.m.	Adjourn

Registration fee of \$30 per participant is due by January 25, 2012. Watch for more details on the conference at www.KSUswine.org. For more information, contact Jim Nelssen (785-532-1251; jnelssen@ksu.edu).

CALENDAR OF UPCOMING EVENTS

Date	Event	Location
November 17, 2011	KSU Swine Day	Manhattan
Nov. 29 – Dec. 1, 2011	Range Beef Cow Symposium	Mitchell, NE
December 13, 2011	Human Resources for Agricultural Producers	Washington, KS
January 7, 2012	Kansas Junior Beef Day	Manhattan
January 10, 2012	Winter Ranch Management Seminar	Manhattan
January 19, 2012	Cattle Disease Identification and Management	Linn, KS
January 25, 2012	EPD/Genetics School	Cuba, KS
February 16, 2012	Prescribed Burning Workshop	Miltonvale, KS
February 28, 2012	KSU Swine Profitability Conference	Manhattan
March 2, 2012	KSU Cattlemen's Day	Manhattan
March 3, 2012	KSU Sheep Day and Ribbon Cutting Ceremony	Manhattan

WHAT'S NEW....

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

"Team Leadership – What Comes First?"

I recently had a family emergency which required me to travel out of state, and miss an important planning meeting. When I contacted the organizer of the meeting to explain my necessary absence, the response was immediate and sincere: "Go take care of your business."

Not, "fill out the proper forms", or "let's check the employee handbook for compliance issues", but "Go take care of your business."

My sister also needed to cut short a business trip on the East coast. In fact, her colleagues did not give her a choice---they insisted she leave and took over the needed duties.

It raises the question of "How does your team deal with personal adversity?" It is not something that can be managed or mandated, but instead can only be instilled and encouraged, trickling down daily from the team leader. Concern for colleagues cannot be directed or taught, or learned from a manual. It is experienced, daily, starting at the beginning of the hiring process, through sick leave and holidays, and culminates when personal challenges arise that will interfere with the individual's physical or psychological ability to perform.

Like the Culture of Safety, the Culture of Caring cannot be simply "turned on" whenever a teammate is challenged but instead must be practiced daily by all team members. Do we demand all people use eye protection when using grinders because it's company policy or because we genuinely care about preserving people's eyesight? Do we insist on helmet use with ATVs because it lowers our workman's comp premiums or because we care about people's safety?

While we can insist on compliance BOTH because it makes business sense AND because we care for people, "box-checking" doesn't change long-term beliefs, behaviors, or attitudes, but a rising tide of Culture change does.

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

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

"Creative Feeding Solutions"

After the summer that was 2011, it's time to get creative. It's time to re-think everything we've always done and known about winter beef cow nutrition. Feed and forage are scarce, and what is available is costly.

But the beauty of the beef cow is that she can use feeds that non-ruminants and higher-performance ruminants cannot. Pigs, chickens, feedlot steers, and dairy cows can't make use of much wheat straw, corn stalks, or milo stubble. With proper protein supplementation, the non-lactating brood cow has the capacity---and the time---to consume and digest a sufficient volume to meet her energy needs.

The other factor which makes the use of low quality forages feasible is the abundance of ethanol byproducts. These products---either wet or dry---are an excellent source of protein, energy, and phosphorus for use in brood cow rations. And they oftentimes are priced similar to or at a discount to corn.

If cows are in the middle 1/3 of gestation and not lactating, a blend of distillers grains and wheat straw or corn stover can meet their protein and energy needs. And when the cows move to the last 1/3 of gestation, increasing the amount of distillers grains or blending a moderate quality prairie hay with the wheat straw or corn stover will meet the needs.

Grinding these low-quality forages and feeding in a bunk may slightly improve digestion and intake but will certainly reduce waste. Mixing the forage with the supplemental concentrates will also improve your ability to provide a balanced diet to all cows in the group. If this is feasible, producers should consider separating cows by age and condition score and balancing the ration differently depending on nutrient needs. We do not want to create long-term welfare cows, but if we do not take care of the cow through inter, she will not be ready to optimally care for her calf come the spring. The decision to sell either the pair in the spring or the cow as a bred female the following fall can then be made AFTER she's done her job in the spring.

Ranchers have traditionally relied on hay and commercial cubes to maintain the cow herd through winter. If ever there was a year to think outside the feed box, this is it.

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

↳ **Assistant Professor, Dairy Science** - The Department of Animal Sciences and Industry is looking for an Assistant Professor in Dairy Science. This position is a full time, 12 month, tenure track position with 0.7 teaching and 0.3 research. Ph.D. or DVM at time of hire is required. Practical knowledge and experience with dairy cattle is preferred. Salary is commensurate with training, experience, and demonstrated ability. View complete position announcement at: <http://www.asi.ksu.edu/positions>. Review of applications begins December 9, 2011, and continues until a suitable candidate is identified.

↳ **IRM Redbooks** – 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 (Ischrein@ksu.edu; 785-532-1267).

↳ **Tenderness and Intramuscular Lipid of Most Major Muscles from *Bos Indicus* Cattle is Less than for *Bos Taurus* Cattle** - Twenty *Bos taurus* (Hereford x Angus) and 20 *Bos indicus* (Brahman and Sahiwal sires mated to Hereford x Angus crossbred cows) were used. Calves were weaned at approximately 200 days of age, preconditioned 30 days, and then fed a corn and corn silage diet until harvest after 169 days on feed. Carcasses were evaluated by USDA graders for carcass traits. At 8 days postmortem, right sides were fabricated to obtain the *supraspinatus* (SS), *infraspinatus* (IF), and *triceps brachii* (TB) from the chuck; *deep pectoral* (DP) from the brisket; *longissimus lumborum* (LL), *psoas major* (PM), and *gluteus medius* (GM) from the loin; and *biceps femoris*, *semitendinosus* (ST), and *semimembranosus* (SM) from the round. Muscles were vacuum packaged and aged until 10 days postmortem. Warner- Bratzler shear force was measured on cores from steaks and roasts cooked to 150°F internal temperature.

Bos taurus carcasses were heavier, fatter, and had larger ribeye areas than *Bos indicus* carcasses. In addition, *Bos taurus* carcasses had higher marbling scores. Yield grade tended to be higher for *Bos taurus* but it was not statistically significant. Intramuscular fat percentage was higher in all *Bos taurus* muscles. For all muscles except TB, roasts took less time per oz to reach the final end point temperature than steaks. Cooking losses were less for TB, LL, and SM steaks than for roasts and greater for PM and GM roasts than steaks. In the forequarter, tenderness of SS and IF muscles was not affected by breed or cut size. *Bos indicus* TB muscles were less tender than *Bos taurus*, and DP muscles cooked as roasts were less tender than those cooked as steaks. *Bos taurus* LL, GM, and SM muscles cooked as steaks were more tender than those from *Bos indicus*, and *Bos taurus* LL, GM, ST, and SM muscles cooked as roasts were more tender than those from *Bos indicus*.

Bottom Line... Carcasses from *Bos indicus* cattle were lighter and had less fat cover, smaller ribeyes, and less marbling than *Bos taurus* cattle. Seven of the ten muscles studied were more tender for *Bos Taurus* cattle when cooked as steaks, roasts, or both cut sizes. View the complete research report at www.asi.ksu.edu/cattlemeniday. For more information, contact Michael Dikeman (785-532-1225; mdikeman@ksu.edu) or Elizabeth Boyle (785-532-1247; lboyle@ksu.edu).

↳ **Evaluation of Feed Budgeting, Complete Diet Blending, and Corn-Supplement Blending on Finishing-Pig Performance** - A total of 283 pigs (PIC TR4 × 1050, initially 77.2 ± 1.4 lb BW) were used to compare phase feeding with blending finishing diets by using the FeedPro system (Feedlogic Corporation, Willmar, MN). There were 3 experimental treatments: (1) a standard 4-phase complete feed program, (2) blending high- and low-lysine complete diets over the entire experiment, and (3) blending ground corn and a separate complete supplement within each phase. FeedPro is an integrated feed dispensing system that can deliver and blend 2 separate diets while dispensing. The 4 phases were 77 to 120, 120 to 175, 175 to 221, and 221 to 278 lb. Each treatment had 12 replicate pens and 8 pigs per pen. Overall (77 to 278 lb), ADG and ADFI were similar across treatments. However, pigs fed the ground corn-supplement blend had poorer F/G than pigs fed diets blended in multiple phases and tended to have poorer F/G than pigs fed the standard phase diets. There were no differences in HCW, percentage yield, and loin depth across treatments. Pigs fed using phase feeding of the ground corn-supplement blend had greater percentage lean and lower fat depth than pigs fed using phase feeding of complete diets or diet blending. There were no statistical differences in total revenue and income over feed costs (IOFC) across treatments. However, the highest IOFC was obtained from diet blending, which had a numeric advantage of \$1.44 to \$2.32/pig over other treatments.

Bottom Line....In conclusion, the FeedPro system blended separate complete diets and a ground corn-supplement combination without adversely affecting growth performance and carcass characteristics. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by R.C. Sulabo, G.A. Papadopoulos, J.R. Bergstrom, J.M. DeRouchey, D. Ryder, M.D. Tokach, S.S. Dritz, R.D. Goodband, and J.L. Nelssen.)

↳ **Effects of Feed-Withdrawal Time on Finishing Pig Carcass Characteristics and Economics in a Commercial Environment** – The effects of feed-withdrawal time on finishing-pig carcass composition and net returns were determined in 2 studies. In Exp. 1, a total of 728 pigs (BW = 286.4 ± 2.7 lb, 10 to 19 pigs per pen) were marketed from 48 pens that were randomly assigned to 1 of 4 treatments: feed withdrawal times of 7, 24,

36, or 48 h before harvest. Pigs were fed a common corn-soybean meal diet containing dried distillers grains with solubles (DDGS) and bakery co-products. As expected, increased feed withdrawal time decreased live weight. Withholding feed also decreased HCW and backfat depth. Percentage yield increased with longer withdrawal periods, as did percentage lean. Withholding feed increased live price and, accordingly, also increased carcass price. These results were due in part to increased premiums and decreased weight discounts. Total value and net revenue received were similar between treatments as HCW decreased in fasted pigs, but feed intake per pig also decreased, resulting in feed savings of up to \$0.78/pig. Withholding feed for 24 h resulted in a numeric increase in net revenue of \$0.89/pig compared to 7 h.

In Exp. 2, the 48-h treatment was removed and replaced with a 12-h treatment in order to more accurately determine the proper time to implement feed withdrawal. The incidence of runny bung and leaking ingesta were also recorded to determine whether a relationship existed between feed withdrawal and the incidence of these processing concerns. A total of 843 pigs (BW = 273.0 lb, 16 to 26 pigs per pen) were assigned to 1 of 4 treatments: withholding feed for 7, 12, 24, or 36 h before harvest. Pigs were fed a common corn-soybean meal-based diet containing 20% DDGS. As a result of misidentification of pigs by plant personnel, data were analyzed from only 25 of the original 40 pens. Withholding feed tended to decrease live weight. Unlike Exp. 1, percentage yield increased with increasing withdrawal time. Although withholding feed had no effect on the incidence of runny bung, it did increase the incidence of leaking ingesta. For economics, as in Exp. 1, withholding feed increased live price. Additionally, pigs that were fasted had increased carcass price. Although premiums were similar across treatments, withholding feed decreased weight discounts. Total value and net revenue received per pig were similar across treatments, but withholding feed decreased feed intake, resulting in feed savings of up to \$0.46/pig.

Bottom Line....Overall, withholding feed can be used to avoid weight discounts in heavyweight pigs without negatively impacting carcass composition and maintaining overall revenue per pig. However, these advantages come with a potential reduction in carcass weight and increased incidence of leaking ingesta, which can result in condemned heads at inspection and losses of \$3 to 4 per carcass. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by H.L. Frobese, S.S. Dritz, L.N. Edwards, K.J. Prusa, M.D. Tokach, J.M. DeRouchey, R.D. Goodband, and J.L. Nelssen.)

↳ **Evaluation of Deleting Crystalline Amino Acids from Low-CP, Amino Acid-Fortified Diets on Growth**

Performance of Nursery Pigs from 15 to 25 lb - A total of 294 nursery pigs (PIC TR4 x 1050, initially 15.2 lb, 3 d postweaning) were used in a 28-d trial to evaluate the effects on growth performance of eliminating specific crystalline amino acids from a low-CP, amino acid-fortified diet. On d 3 after weaning, pigs were allotted to 1 of 6 dietary treatments. A 2-phase diet series was used, with treatment diets fed from d 0 to 14 and a common diet fed from d 14 to 28. All diets were in meal form. The formulation was based on data from previous trials in which fish meal was replaced with crystalline amino acids in the diet for 15- to 25-lb pigs. The objective of this trial was to determine which amino acids are required in this low-CP, amino acid-fortified diet. The positive control diet contained L-lysine HCl, DL-methionine, L-threonine, L-isoleucine, L-tryptophan, L-valine, L-glutamine, and L-glycine. The 6 treatments were (1) positive control, (2) positive control with L-isoleucine deleted from the diet, (3) positive control with L-tryptophan deleted, (4) positive control L-valine deleted, (5) positive control with L-glutamine and L-glycine deleted, and (6) positive control with L-isoleucine, L-tryptophan, L-valine, L-glutamine, and L-glycine deleted from diet (negative control). There were 7 pigs per pen and 7 pens per treatment. Pigs and feeders were weighed on d 0, 7, 14, 21, and 28 to calculate ADG, ADFI, and F/G. From d 0 to 14, pigs fed the positive control diet had improved ADG and ADFI compared with pigs fed the negative control or diets with L-tryptophan or L-valine deleted, with pigs fed the diet without crystalline glutamine and glycine being intermediate. The pigs fed the diet containing no crystalline isoleucine had similar ADG, ADFI, and F/G to pigs fed the positive control, but had improved ADG compared to the pigs fed the other 4 diets. For unknown reasons, when the common diet was fed from d 14 to 28, the deletion of crystalline isoleucine in the previous period caused a decrease in ADG compared to the positive control. Pigs from the other treatment groups had similar ADG to the positive control. There were no differences in ADFI from d 14 to 28. Because of the decrease in ADG from d 0 to 14, pigs fed the negative control or diets without L-tryptophan or L-valine had decreased ADG for the overall trial (d 0 to 28) compared to pigs fed the positive control. ADFI from all treatment diets decreased compared to the positive control, although only the negative control group tested significantly. There was no difference in F/G for the overall data.

Bottom Line....In conclusion, L-tryptophan and L-valine were needed in the low-CP, high amino acid-fortified nursery diet to achieve maximum growth performance from 15 to 25 lb. This suggests that the tryptophan:lysine and valine:lysine requirements are greater than 15 and 57% of lysine, respectively. The numerical decrease in performance when L-glutamine and L-glycine were removed from the diet during the first period suggests a need for nonessential nitrogen in the low-CP, amino acid-fortified diet or a benefit to one of these amino acids separate from its role as a nitrogen source. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by J.E. Nemechek, M.D. Tokach, S.S. Dritz, R.D. Goodband, J.M. DeRouchey, J.L. Nelssen, and J. Usry.)

AS&I FACULTY SPOTLIGHT



Karen Schmidt (kschmidt@k-state.edu; 785-532-1216) **Professor/Dairy Foods**

Dr. Karen Schmidt earned a B.S. degree in Food Science from the Pennsylvania State University. After graduating from Penn State, Karen joined Tony's Pizza Service in Salina, KS as a quality assurance supervisor. After working in quality assurance and research and development with Schwan Sales Enterprises, Karen entered graduate school at the University of Minnesota and completed her M.S. and Ph.D. degrees in Food Science.

In January of 1990, Karen joined the University of Georgia in the Departments of Food Science and Technology and Animal Science as an Assistant Professor with research and teaching responsibilities. In 1994, she joined the Department of Animal Sciences and Industry at Kansas State University as an Associate Professor with responsibilities in teaching and

research where she currently holds a 50% teaching and 50% research appointment. In addition, she is a member of Kansas State University's Food Science Institute. Her teaching responsibilities include Fundamentals of Milk Processing, Food Product Evaluation, Dairy Foods Processing and Technology, and Quality Assurance of Food Products and her research program focuses on the processing and quality of dairy and non-dairy foods.



Jeff Stevenson (jss@k-state.edu; 785-532-1243) **Professor/Bovine Reproduction**

Jeff was born June 15, 1951, in Salt Lake City, Utah, and attended elementary and secondary schools in Salt Lake City before relocating to Gresham, Oregon in 1967 and graduating from Gresham Union High School in 1969. He attended Utah State University (USU) from 1969-1970 and from 1972-1975, graduating with a B.S. in Dairy Science in 1975. During summers, Jeff worked on his uncle's dairy farm in southeastern Idaho, milked cows on a private dairy in Smithfield, Utah, and fed experimental cows at the USU Dairy Center in Logan, Utah.

He entered graduate school in Dairy Science at Michigan State University in 1975 and served as a graduate research and teaching assistant until completing the requirements for a M.S. in Dairy Science in 1977. That same year, he relocated to Raleigh, North Carolina, and enrolled in a Ph.D. program in Animal Physiology at North Carolina State University under the continued direction of Dr. Jack H. Britt. While fulfilling the requirements of the Ph.D. during 1977-1980, Jeff served as a graduate and teaching assistant in the Department of Animal Science.

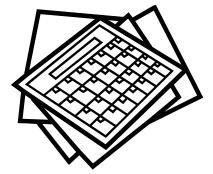
In August, 1980, Jeff was appointed Assistant Professor (80% research/20% teaching) in the Department of Animal Sciences and Industry at Kansas State University. He was promoted to Associate Professor in 1986 and Professor in 1992. His current responsibilities include teaching one undergraduate course, entitled "Dairy-Poultry Science," one graduate course, entitled "Ovarian Physiology," graduate Physiology-Animal Breeding seminar, and serving as faculty coordinator for the Kansas Artificial Breeding Service Unit (KABSU). Research interests include synchronization of estrus and ovulation in dairy and beef cattle. Jeff has served on the editorial boards of the *Journal of Dairy Science*, *Journal of Animal Science*, and *Animal Reproductive Science*. Recently served as senior section editor for the Physiology and Management Section of the *Journal of Dairy Science*.

Jeff received the 1990 American Dairy Science Association Agway Inc. Young Scientist Award, 1998 National Association of Animal Breeders Research Award, 2002 American Dairy Science Association Pharmacia Animal Health Physiology Award, 2002 Kansas State University Research and Extension Team Award, 2006 Kansas Dairy Leader, and the 2009 American Society of Animal Science Animal Management Award. In June 1992, he became a monthly contributing author for the Artificial Breeding column in *Hoard's Dairyman*. He is the author or coauthor of 138 peer-reviewed journal articles, 15 invited papers, 9 book chapters, 207 popular press articles, and 136 paper presentations at professional meetings.

WHAT PRODUCERS SHOULD BE THINKING ABOUT...

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

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



Cow herd management

- Historically, cull cow prices have increased during the next 2 or 3 months. Contrary to tradition, feeding cull cows this year may not be a profitable venture due to higher input costs. Check your breakevens.
- Continue feeding or grazing programs started in early winter. Weather conditions may require wrapping up grain sorghum and cornstalk field grazing. Severe winter weather may begin to limit crop residue utilization, so be prepared to move to other grazing and feeding systems
- Supplement to achieve ideal BCS at calving.
 - ↳ Use this formula to compare the basis of cost per lb. of crude protein (CP):
$$\text{Cost of supplement, \$ per hundredweight (cwt.)} \div (100 \times \% \text{ CP}) = \text{cost per lb. of CP.}$$
 - ↳ Use this formula to compare energy sources on basis of cost per lb. of TDN:
$$\text{Cost, \$ per ton} \div [2,000 \times \% \text{ dry matter (DM)} \times \% \text{ TDN in DM}] = \text{cost per lb. of TDN.}$$
- Control lice; external parasites could increase feed costs.
- Provide an adequate water supply. Depending on body size and stage of production, cattle need 5-11 gallons (gal.) of water per head per day, even in the coldest weather.
- Sort cows into management groups. BCS and age can be used as sorting criteria. If you must mix age groups, put thin and young cows together, and feed separately from the mature, properly conditioned cows.
- Use information from forage testing to divide forage supplies into quality lots. Higher-quality feedstuffs should be utilized for replacement females, younger cows, and thin cows that may lack condition and that may be more nutritionally stressed.
- Consult your veterinarian regarding pre- and post-partum vaccination schedules.
- Continue mineral supplementation. Vitamin A should be supplemented if cows are not grazing green forage.
- Plan to attend local, state and regional educational and industry meetings.
- Develop replacement heifers properly. Weigh them now to calculate necessary average daily gain (ADG) to achieve target breeding weights. Target the heifers to weigh about 60%-65% of their mature weight by the start of the breeding season. Thin, lightweight heifers may need extra feed for 60-80 days to "flush" before breeding.
- Bull calves to be fed out and sold in the spring as yearlings should be well onto feed. Ultrasound measurements should be taken around one year of age and provided to your breed association.
- Provide some protection, such as a windbreak, during severe winter weather to reduce energy requirements. The LCT is the temperature at which a cow requires additional energy to simply maintain her current body weight and condition. The LCT for cattle varies with hair coat and body condition. Increase the amount of dietary energy provided 1% for each degree (including wind chill) below the LCT.

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.