



Newsletter from the Department of Animal Sciences and Industry
 218 Weber Hall - Kansas State University - Manhattan, KS 66506
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UPCOMING EVENTS...

↪ **K-State's Winter Ranch Management Series Set for January; Focuses on Replacement Heifers** - Record high calf prices and projected cow-calf profitability have many producers considering expansion. Selecting, feeding and breeding the right replacement heifers could have a large impact on future profits. With that in mind, the 2015 K-State Winter Ranch Management series of meetings will focus on best management practices for developing replacement heifers. The meetings will also feature the popular 'town-hall' style—a two-way verbal exchange—between Kansas' cattle producers and extension specialists. The series is set to kick off in January. 2015 Winter Ranch Management locations and contacts include:

La Crosse - Tuesday, Jan. 6, evening

Location: La Crosse Livestock Market, 2340 U.S. 183, La Crosse, KS
 Jared Petersilie, Walnut Creek Extension District, 785-222-2710
 Stacy Campbell, Ellis County, 785-628-9430
 Alicia Boor, Barton County, 620-793-1910

Mound City - Thursday, Jan. 8, evening

Location: First Baptist Church, 8424 Paine Road, Mound City, KS
 Abbie Powell, Marais des Cygnes Extension District, 913-795-2829
 Megan Westerhold, Marais des Cygnes Extension District, 913-294-4306
 Chris Petty, Southwind Extension District, 620-223-3720

Hill City - Thursday, Jan. 15, late morning

Location: 4-H Building, Graham County Fairgrounds, Hill City, KS
 Tressie Mitzner, Graham County Extension, 785-421-3411
 Bronc Barrows, Golden Prairie Extension District, 785-743-6361
 Julie Niehage, Golden Prairie Extension District, 785-671-3245
 Julianne Shoup, Twin Creeks Extension District, 785-675-3268
 Keith VanSlike, Twin Creeks Extension District, 785-877-5755
 Rachael Boyle, Phillips-Rooks Extension District, 785-425-6851
 Cody Miller, Phillips-Rooks Extension District, 785-543-6845

Beloit - Thursday, Jan. 15, evening

Location: North Central Kansas Technical College Student Union Conference Room, 3033 U.S. Hwy 24, Beloit, KS
 Neil Cates, Post Rock District, 785-738-3597
 Anthony Ruiz, Central Kansas Extension District, 785-392-2147
 John Forshee, River Valley Extension District, 785-632-5335

Herington - Tuesday, Jan. 27, late morning

Location: Herington Community Building, 810 South Broadway, Herington, KS
 Lori Bammerlin, Flint Hills Extension District, 620-767-5136
 Laura Marks, Dickinson County, 785-263-2001
 Rickey Roberts, Marion County, 620-382-2325

Wamego - Tuesday, Jan. 27, evening

Location: Mount Calvary Lutheran Church, 17535 Say Road, Wamego, KS
 Austin Sexten, Pottawatomie County, 785-457-3319
 Kara Mayer, Wabaunsee County, 785-765-3821

Overbrook - Thursday, Jan. 29, evening

Location: Grace Community Church, 310 E 8th Street, Overbrook, KS
 Rod Schaub, Frontier Extension District, 785-828-4438

Watch for more details at www.KSUbeef.org. For more information, contact Bob Weaber (bweaber@ksu.edu); 785-532-1460.

December, 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.



↪ The 2015 **KSU Swine Profitability Conference** will be held on February 3, 2015, in Forum Hall of the K-State Student Union. With the cancellation of the 2014 conference due to inclement weather, all those pre-registered for 2014 are already registered for the 2015 event. The schedule for the event includes:

- 9:15 a.m. Coffee and Donuts
- 9:30 a.m. Economic Considerations for Growing the U.S. Swine Industry
Glynn Tonsor, KSU Department of Ag Economics
- 10:30 a.m. Special Lecture: Jack and Pat Anderson Lecture in Swine Health Management: Achieving World Class Swine Production: Is There a Silver Bullet?
Larry Coleman and Tim Friedel, Vet Care, Broken Bow, NE
- 11:15 a.m. What Have I Done to Make My Land-Based System Successful
Craig Christensen, Ogden, IA
- 12:00 noon Lunch
- 1:15 p.m. Lessons I've Learned About Marketing Pork to the Chefs of High End Restaurants of New York
Craig Good, Olsburg, KS
- 2:15 p.m. Future Technology for the Swine Industry
Kim Friesen, Research and Development, Elanco
- 3:00 p.m. Adjourn

Watch for more details at www.KSUswine.org. For more information, contact Jim Nelssen (785-532-1251; jnelssen@ksu.edu).

↪ **Youth learn about raising and showing pigs at the Kansas Junior Swine Producer Day** which will be held Saturday, February 28, 2015, in Weber Arena. This highly interactive, hands-on educational event will be a fun filled day of activities in which youth, parents, swine project leaders and adults can increase their knowledge and experience of swine production and management practices. Presentations and demonstrations will be given by K-State graduate students and faculty, as well as featured speakers. Watch for more details coming soon. A tentative schedule includes:

- 9:00 a.m. Registration
- 9:15 a.m. Welcome and Opening Remarks
- 9:30 a.m. Selecting Your Youth Project
- 10:00 a.m. Breakout Sessions (will attend 2)
 - Meat 101: Know your Pork!
 - Swine Breeds and Ear Notching
 - Proper Grooming and Clipping
- 11:15 a.m. Nutrition and Daily Feeding
- 11:45 a.m. Educational Materials; On-line Youth PQA, and Livestock Nominations
- 12:00 p.m. Lunch
- 12:45 p.m. Daily Care: From Purchase to Show
- 1:30 p.m. Hands-On Showmanship
- 2:15 p.m. Final Questions and Wrap-up

For more information on the event, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu)

CALENDAR OF UPCOMING EVENTS

Date	Event	Location
January 6, 2015 pm	Winter Ranch Management Series	LaCrosse, KS
January 8, 2015 pm	Winter Ranch Management Series	Mound City, KS
January 15, 2015 am	Winter Ranch Management Series	Hill City, KS
January 15, 2015 pm	Winter Ranch Management Series	Beloit, KS
January 27, 2015 am	Winter Ranch Management Series	Herington, KS
January 27, 2015 pm	Winter Ranch Management Series	Wamego, KS
January 29, 2015 pm	Winter Ranch Management Series	Overbrook, KS
February 3, 2015	KSU Swine Profitability Conference	Manhattan
February 28, 2015	Kansas Junior Swine Producer Day	Manhattan

WHAT'S NEW

Management Minute "Holiday Blues"

*Merry Christmas and Holiday Greetings from
the Department of Animal Sciences and Industry!*

Wow, 2014 was quite a year for the livestock industries! Who would have thought that we would enjoy record cattle and swine prices at the same time. Although the drought isn't entirely gone for the entire state, most have seen relief from previous years. Clearly, we have a lot to be thankful for.

At K-State, we are especially thankful for our local extension partners and the work that you do each day to help livestock producers in Kansas. We also are thankful for our media and allied industry partners that help us extend our research and extension information to the end users to help keep livestock producers profitable.

*Thank you and have a Merry Christmas and Happy New Year.
Mike Tokach, Extension State Leader, Animal Sciences and Industry*

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

The winter holidays in the U.S. are broadly considered a festive time of friends, family, and a whole lot of holiday cheer. Unfortunately, that perception is far from reality for many around us. In fact, depression tends to increase during the holidays.

There are countless reasons some people become depressed during the holiday season: memories of the passing of a loved one; divorce; estrangement from children or parents. Although the holidays elicit festive emotions in many of us, painful events from a person's past can just as easily and very likely trigger feelings of sadness or anger. Some people simply lament that they have no one close to them with whom to share the holidays, so all the joyous celebration and family atmosphere surrounding them only serves as a very potent reminder of their aloneness.

Regardless of the individual potential causes of depression, our obligation as team leaders, managers, team mates, and friends, is to recognize when our team mates are behaving abnormally. Depending on our personal relationship with the person, we may or may not have license to gently probe for any melancholy. "Hey Pete, how are you feeling? You seem a little quiet these past few days."

If we haven't cultivated sufficient trust in this particular relationship to safely enter this very soft and shaky ground, this, unfortunately, is the wrong time to initiate that process. On the contrary, if your workplace has successfully nurtured a culture of trust, loyalty, and interpersonal safety, the cocoon of cordial and long-lasting workplace relationships may actually provide a respite from these feelings of loneliness. This can be priceless for some.

An additional complicating factor during the holiday season is the combination of superfluous holiday events---holiday parties, church events, shopping, and children's school events---and the generally heightened tenor within both the workplace and the home. The added strain on each person will likely make us less attuned to any potential change in mood of those close to us, rather than more attuned to it; it's our human nature--either selfishness or self-preservation. Simply realizing that others may be hurting, and being alert to the probability that others may not enter the holiday season with the same joy that we do creates an opportunity to provide support and encouragement to those around us.

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

Feedlot Facts "Body Condition Scoring Beef Cows"



“Body Condition Scoring Beef Cows”

In spite of the high cost of feed, ranchers need to be vigilant to the condition in which our cows go into calving. If cows are thin at calving time, there will be reductions in quality and quantity of colostrum, calf vigor, and subsequent fertility during next summer’s breeding season.

Cows which calve thin will delay their return to estrus and breed back late. If these cows do not maintain a 365-day calving cycle, after 1-2 late breedings they could 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 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 at the herd as a whole and thinking, “They look a little thin”. We need to look at each cow individually and make a record. For typical spring-calving herds, there is 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”, but isn’t fleshy. A borderline thin cow (BCS = 4) will clearly show 3-4 ribs first thing in the morning, will have no 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.

BCS 4 (borderline thin) cows will cycle back about 2 weeks later than BCS 5 cows, and BCS 3 (truly thin) cows will cycle back 3 weeks later than BCS 4 cows. 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 still 3-4 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 0.5-1.0 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, as opposed to the cow “culling herself” due to nutritional infertility because of lack of observation and management. Cow/calf profitability is seeing unprecedented levels; ranchers will want to have as many productive cows and wean as many healthy calves as possible for the next few years.

Body condition scoring the herd is a simple process, and can be done on a large paper tablet. BCS 4’s can be easily fed into the 5 range; BCS 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 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 and productivity of your herd for years to come.

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

↪ **2 Questions: The Foundation of Replacement Heifer Nutrition** - Replacement heifer development requires a significant investment of labor, feed, and financial resources and is an essential component of any operation. Nutrition plays a vital role in the development of beef heifers, particularly the onset of puberty. Developing heifers to achieve 60-65% of their expected mature body weight by the beginning of their first breeding season is often recommended to ensure that heifers have achieved sufficient body weight and condition to achieve puberty. In order to build a proper nutrition program for replacement heifers there are 2 fundamental questions “*What is the expected mature weight of your heifers*” and “*what do your heifers currently weigh?*” The response to these questions drives the nutrition program from weaning to breeding for replacement heifers (“where are we at” and “where do we need to be”). The average body weight of the mature cows in a herd or the replacement heifer’s dam is often used as the best indication of a heifers expected mature body weight. However, mature cows are not commonly weighed on many operations and therefore replacement heifer target weights may be under or over-estimated. Over-estimating mature weights can result in heifers that are over-conditioned at breeding and increases feed costs. Under-estimating mature weights can result in lower rates of gain and may delay the onset of puberty in some circumstances. In 2010, I used the K-State Focus on Feedlot database to estimate mature cow weights in the U.S. using steer market weights from 1990 to 2010. The estimated mature weight of a beef cow was 1228 lbs in 1990 and 1386 lbs in 2010 (an increase of 158 lbs). Therefore, if you do not routinely weigh your cows, I would encourage you to take the opportunity to run a few cows across a scale.

The second question “*how much do your heifers currently weigh?*” determines the expected daily gain required to achieve the target body weight at breeding. If we know a heifer needs to gain 400 lbs in 200 days, then the heifer has to gain 2.0 lbs/day. The current weight of the heifer is also used to estimate daily dry matter intake, which essentially serves as the foundation for the nutrition program. In an ideal situation, replacement heifers should be weighed at least 2 times during the development period. At the beginning and at approximately 90 days prior to the expected breeding season; the second weight prior to the breeding season provides the opportunity to change the nutrition program if necessary. For more information, contact Justin Waggoner (620-275-9164; jwaggon@k-state.edu).

↪ **Encapsulation of Flaxseed in a Dolomitic Lime Matrix: Effects on Feedlot Performance and Carcass Characteristics of Steers vs. Heifers** - Comparing feedlot performance and carcass characteristics of heifers and steers fed traditional finishing diets to those of cattle supplemented with encapsulated blends of ground flaxseed and dolomitic lime hydrate was the objective of this experiment. Forty crossbred steers with an average initial body weight of 921 ± 57 lb and 40 crossbred heifers with an average initial body weight of 814 ± 62 lb were used in a randomized complete block design with a 2×4 factorial arrangement of treatments to evaluate the impact of feeding encapsulated blends consisting of dolomitic lime and ground flaxseed. Finishing diets consisted of: (1) Control (no flaxseed); (2) 4% of a 50:50 mixture of dolomitic lime and flaxseed; (3) 6% of a dolomitic hydrate flaxseed mixture containing 67% lime and 33% flaxseed; and (4) 6% of a 33:67 dolomitic hydrate:flax blend for the latter half of the finishing period (Late). Cattle were harvested after 116 or 144 days on feed, at which time liver abscess incidence rates and hot carcass weights were recorded. Carcasses were chilled for 24 hours, then graded.

The Bottom Line... Feeding flaxseed encapsulated with dolomitic lime decreased feed intake and carcass weight, and other measures of performance were consistent with changes in feed intake. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Jim Drouillard (785-532-1204; jdrouill@ksu.edu) or Chris Reinhardt (785-532-1672; cdr3@ksu.edu).

↪ **Aging Premium Choice Chuck Rolls for Minimal Days Maximizes Color Stability and Extends Retail Display Life** - After aging for 7, 21, or 42 days, Premium Choice and Select knuckles and chuck rolls were ground twice before proximate analyses were conducted. Ground beef patties were formed, packaged in polyvinyl chloride-overwrapped trays, and displayed in a coffin-type retail case at 36°F. Color was evaluated at 0, 24, 48, and 72 hours of display by a trained color panel and HunterLab MiniScan. At the beginning of display, ground beef patties were evaluated for microbial and lipid oxidation properties. This trial was designed to determine the effects of two subprimal types (chuck roll and knuckle), two quality grades (Premium Choice and Select), and three vacuum-packaged storage aging times before processing (7, 21, and 42 days) on ground beef patty display color stability.

Subprimal type × aging time × display time interaction means are depicted below for visual color discoloration scores (2 = bright red; 5 = moderately dark red; 8 = tan to brown) of ground beef patties.

The Bottom Line... Premium Choice chuck rolls aged for fewer than 21 days maximize color stability and extend retail display life. In contrast, patties from knuckle subprimals deteriorate rapidly, especially with extended aging times. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact John Unruh (785-532-1245; junruh@ksu.edu) or Elizabeth Boyle (785-532-1247; lboyle@ksu.edu).

↳ **Comparative Effects of Dietary Copper, Zinc, Essential Oils, and Chlortetracycline on Nursery Pig Growth Performance-** A total of 350 weaned pigs (PIC 1050; initially 13.3 lb) were used in a 47-d study to compare the effects of feeding antibiotic alternatives (copper, zinc, and essential oils), alone or in combination, on nursery pig performance. Pigs were allotted to pens at weaning (d 0) and fed a common starter diet with no antimicrobial for 5 d before the start of the experiment. On d 5, pens of 5 pigs were allotted to 1 of 10 dietary treatments in a randomized complete block design with 7 replications per treatment. Dietary treatments were arranged in a 2 × 2 × 2 + 2 factorial with main effects of added copper sulfate (CuSO₄; 0 vs. 125 ppm Cu), added zinc oxide (ZnO; none vs. 3,000 ppm Zn from d 5 to 12 and 2,000 ppm Zn from d 12 to 33), and Regano EX (0 vs. 45 g/ton essential oils blend; Ralco Animal Nutrition, Marshall, MN). The 2 additional treatments were growth-promoting and therapeutic levels of chlortetracycline (CTC at 50 or 400 g/ton). Pigs were fed experimental diets from d 5 to 33 followed by a common corn-soybean meal-based diet without any antimicrobial, essential oils, or pharmacological levels of Cu or Zn from d 33 to 47. To comply with FDA guidelines, CTC was removed on d 19 from the diet of pigs fed 400 g/ton CTC, then added again from d 20 to 33. All diets contained 16.5 ppm Cu and 165 ppm of Zn from the trace mineral premix.

Bottom Line... Essential oils had no effect on daily gain, but feeding CTC or pharmacological levels of Cu or Zn improved the growth rate of nursery pigs. Carryover effects from any of these dietary treatments on subsequent nursery growth performance were minimal. Although there were no improvements in feed efficiency due to Cu or Zn, the inclusion of an essential oils blend worsened feed and caloric efficiencies. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (*This study conducted by J.A. Feldpausch, J.A. DeJong, M.D. Tokach, S.S. Dritz, J.C. Woodworth, R.G. Amachawadi, H.M. Scott, J.L. Nelssen, and R.D. Goodband.*)

↳ **Evaluation of Different Zinc Sources and Levels on Nursery Pig Performance-** A total of 294 pigs (PIC 327 × 1050, initially 14.1 lb BW) were used in a 31-d trial to evaluate the effects of increasing levels of two different zinc sources on nursery pig growth performance. Pigs were weaned at 21 d of age and were fed pelleted diets for the first 7 d and a mash diet for 24 d of the 31-d trial. Each treatment had 7 replicate pens with 7 pigs per pen. The 6 experimental diets were: (1) a control diet; (2) a diet with 500 ppm of Zn from Zinco+; (3) a diet with 1,500 ppm of added Zn from Zinco+; (4) a diet with 500 ppm of Zn from zinc oxide (ZnO); (5) a diet with 1,500 ppm of Zn from ZnO; and (6) a diet with 3,000 ppm of Zn from ZnO. All diets contained 110 ppm of Zn from the ZnSO₄ provided by the trace mineral premix. Zinco+ (Jefo, Quebec, Canada) is a fat-encapsulated form of ZnO that is suggested to be more bioavailable than ZnO.

From d 0 to 7, neither Zn source nor level influenced pig performance. From d 7 to 21, pigs fed increasing Zn from Zinco+ tended to have increased ADG and had improved F/G. Pigs fed increasing levels of Zn from ZnO had greater ADG and ADFI and improved F/G. Pigs had greater ADG and ADFI when fed diets containing 3,000 ppm of Zn from ZnO compared with pigs fed diets with 500 ppm of Zn from Zinco+. Day 21 BW increased with increasing Zn from Zinco+ and Zn from ZnO, with pigs fed 3,000 ppm of Zn from ZnO having heavier d-21 BW compared with those fed 500 ppm of Zn from Zinco+.

Bottom Line... Overall, from d 0 to 31, increasing Zn from Zinco+ did not affect growth performance, but increasing Zn from ZnO increased ADG and ADFI. Pigs fed 500 ppm of Zn from Zinco+ had poorer ADG and ADFI than pigs fed 3,000 ppm of Zn from ZnO. This study shows the growth benefits of adding 3,000 ppm of Zn from ZnO in diets fed to newly weaned pigs. Lower levels of Zn from Zinco+ did not provide the same growth-promoting potential as the diet with 3,000 ppm of Zn from ZnO. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (*This study conducted by K.E. Jordan, M.A.D. Goncalves, S. Nitikanchana, M.D. Tokach, S.S. Dritz, R.D. Goodband, J.M. DeRouche, and J.C. Woodworth.*)

AS&I Faculty Spotlight



Dale Blasi (dblasi@k-state.edu; 785-532-5427)

Professor/Extension Beef Specialist

Dale A. Blasi was born and reared on his family's farm and ranch in southeast Colorado, near Trinidad. He received his B.S. in Animal Sciences at Colorado State University in 1984. In 1986, he received his M.S. in Beef Systems Management at Colorado State University. He continued his education at the University of Nebraska where his dissertation addressed protein supplementation strategies for beef cows and growing cattle.

After earning his Ph.D. degree in 1989, he accepted an appointment as a Livestock Specialist in South Central Kansas at Hutchinson for Kansas State University. While there, he focused on cow/calf and stocker nutrition and management strategies, forage quality and harvest efficiency, forage utilization systems and utilization of food industry byproducts. In 1997, he transitioned to the Department of Animal Sciences and Industry at Kansas State University as a State

Beef Specialist where he currently has a 10% teaching, 20% research and 70% extension appointment. His responsibilities include providing statewide Extension educational leadership in stocker cattle nutrition and management and utilization of grazed and harvested forages by beef cattle and other livestock, conducting research and interpreting results and serving as a resource person for other state and area specialists, county Extension agents, producers and allied industry personnel. Dr. Blasi has developed and teaches the class, *ASI 650, Identification and Data Management of Food Animals*, to both undergraduate and graduate students.

Since 1998, he has developed and evaluated information and management applications using handheld computers and individual animal electronic identification technologies for the beef industry. He is manager and director of the KSU Beef Stocker Unit and Animal Identification Knowledge Laboratory, a unique facility designed to evaluate the performance of existing and emerging animal identification technologies in a laboratory and animal management setting.



David Grieger (dgrieger@k-state.edu; 785-532-1229)

Associate Professor/Beef Cattle Reproduction

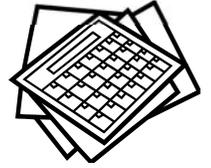
Like John Mellencamp, David Grieger is from a small town in Indiana and likes rock 'n' roll music. (That's where the similarities end because Dr. Grieger chose to attend Purdue to help feed the world instead of a life of money, drugs and fame). After receiving his B.S. and M.S. at Purdue in reproductive physiology he traveled west to Washington State University for his PhD. At Washington State, Dr. G received his Ph.D. in reproductive physiology and it was there that he learned the technique that would carry him forward to this day in higher education: bovine rectal palpation. A relatively low-tech skill that involves sleeves and lube, it is still critically important to beef and dairy production for artificial insemination and pregnancy detection. Although nutritionists, geneticists and meat scientists will argue their discipline is the most important in meat animal production, just remember: If you can't breed 'em, you can't feed 'em and you can't eat 'em.

Dr. G has a 70% teaching and 30% research appointment. *(It's not that he doesn't do any Extension activities; he just doesn't like to brag).*

He teaches several courses in reproductive physiology, which include artificial insemination, ultrasonography, pregnancy diagnosis and calving. In case you think he never takes off his sleeve and comes indoors, think again: Dr. G loves DNA and teaches courses in biotechnology that apply to animal agriculture. And in case you think he never leaves Kansas, again, think again: Dr. G has led three international study tours over the last few years to Costa Rica, South Africa and Argentina. *(Did he need to leave the states for a period to avoid the law, you ask? We have no comment).*

What Producers Should Be Thinking About.....

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



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

- Historically, cull cow prices are beginning to rise. Finish culling cows in order of priority:
 1. Those that fall within the "Four-O Rule" (Open, Old, Onry, Oddball).
 2. Those with physical/structure problems (feet and legs, eyes, teeth, etc.)
 3. Poor producers.
- Continue feeding or grazing programs started in early winter. Fully utilize grain sorghum and cornstalk fields, severe winter weather may begin to limit crop residue utilization, be prepared to move to other grazing and feeding systems.
- Supplement to achieve ideal body condition scores (BCS) at calving.
- Control lice, external parasites will increase feed costs.
- Provide an adequate water supply. Depending on body size and stage of production, cattle need 5-11 gallons of water per head per day, even in the coldest weather.
- Sort cows into management groups. Body condition score 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 conditions 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 postpartum 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 to 65% of their mature weight by the start of the breeding season. Thin, light weight heifers may need extra feed for 60 to 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 the association.
- Provide some protection, such as a windbreak, during severe winter weather to reduce energy requirements. The lower critical temperature (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 (Dry, heavy winter coat = 18 degrees, wet coat = 59 degrees). 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.*