



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...

December 2013

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.

➤ **K-State Winter Ranch Management 'Town Hall' Seminar Series set for January-February 2014** - The format of the 2014 Winter Ranch Management Seminar Series is a face-to-face 'Town Hall' meeting where producers can ask their questions to local/district and state extension specialists. Producers are encouraged to bring their questions on cow/calf animal health, nutrition, genetics, reproduction and management to the session! Meeting times may vary by location. Evening events will start at approximately 5 PM with registration, dinner at 6 PM and program 6:30-8:30 PM. Mid-day meetings will begin with registration at approximately 11:30, lunch at noon and program from 12:30-2:30 PM. Check with host location for final details. Locations include:

- 1) Johnson/Miami/Linn Counties – Tuesday, January 14, evening
- 2) Pottawatomie/Wabaunsee Counties – Thursday, January 16, evening
- 3) Southwind/Wildcat Districts – Tuesday, January 21, evening
- 4) Greenwood County/Rolling Prairie District – Wed., January 22, early pm
- 5) Flint Hills District/Lyon County – Wed., January 22, evening
- 6) Post Rock/Phillips-Rooks District – Thursday, January 23, evening
- 7) Walnut Creek District – Tuesday, January 28, evening
- 8) Reno/Sedgwick Counties – Wednesday, January 29, evening
- 9) Kiowa County – Thursday, January 30, evening
- 10) River Valley/Central Kansas Districts – Wed., February 12, evening

Please RSVP to your selected location contacts by close of business the **Friday before** the event. 20 RSVP'd attendees required for each location. Locations with fewer than 20 confirmed attendees may be cancelled. Registration fees and payment forms may vary by site. Contact your local host contact for registration/RSVP details. Meal is included in the registration fee.

➤ The **SowBridge Breeding Herd Education Series** is being offered for 2014-2015. Since 2008, SowBridge has brought information about gestation, housing, herd health, and new technology to participants in the United States and around the world. SowBridge delivers timely and relevant information in a convenient manner. Programs are held over the midday period to maximize learner participation.

This year-long program is offered by subscription only with a January 15, 2014, deadline to ensure participants will receive materials for the first session on February 5, 2014. Sessions are held the first Wednesday of each month and will begin at 11:35 a.m. central time and last approximately 45 minutes. Following each session, participants can continue to ask questions or respond to other producer questions, via the sowbridge@lista.umn.edu discussion group.

The SowBridge Series cost of \$250 includes all 12 sessions and supporting materials. For a complete schedule and registration form, visit KSUswine.org. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu).



- ↪ **Tremendous group of speakers slated for the 2014 KSU Swine Profitability Conference** which will be held on February 4, 2014, in Forum Hall of the K-State Student Union. The schedule includes:
- 9:15 a.m. Coffee and Donuts
 - 9:30 a.m. The Impact of the Chinese Purchase of Smithfield Foods on the U.S. Swine Industry
Dennis DiPietre, Economist, KnowledgeVentures, LLC
 - 10:30 a.m. *Special Lecture: Jack and Pat Anderson Lecture in Swine Health Management: The Strangest Secret – Why Only A Few Farms Become World Class*
Larry Coleman, DVM. 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 Chef's of High End Restaurants of New York
Craig Good, Olsburg, KS
 - 2:15 p.m. The Power of Animal Sourced Food in Enriching People's Lives
Grady Bishop, Director of Elanco US Swine Operations
 - 3:00 p.m. Adjourn
- Registration fee of \$30 per participant is due by January 25, 2014. Brochures and registration information will be available at www.KSUswine.org. For more information, contact Jim Nelssen (785-532-1251; jnelssen@ksu.edu).

- ↪ The 101st annual **KSU Cattlemen's Day** will be held on Friday, March 7, 2014. Mark your calendars and watch for more details. The program and registration information will be coming soon to www.asi.ksu.edu/cattlemensday. For more information, contact Jim Drouillard (jdrouill@ksu.edu; 785-532-1204) or Dale Blasi (dblasi@ksu.edu; 785-532-5427).

- ↪ **Kansas Junior Sheep Producer Day planned for March.** The Kansas Junior Sheep Producer Day will be held on March 29, 2014, in Weber Hall on the KSU Campus. This day will bring together youth, parents, sheep project leaders and others to increase their knowledge about sheep production and management. This event is designed for all ages and skill levels and we work hard to provide hands on learning experiences for younger participants. Online and print registration will be available at a later date on the Youth Livestock Program webpage.

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
January 14, 2014	Winter Ranch Management "Town Hall" Meeting	Paola, KS
January 15, 2014	SowBridge Breeding Herd Education Series Registration deadline	
January 16, 2014	Winter Ranch Management "Town Hall" Meeting	St. Marys, KS
January 21, 2014	Winter Ranch Management "Town Hall" Meeting	Hepler, KS
January 22, 2014	Winter Ranch Management "Town Hall" Meeting	Eureka, KS
January 22, 2014	Winter Ranch Management "Town Hall" Meeting	Flint Hills District
January 23, 2014	Winter Ranch Management "Town Hall" Meeting	Downs, KS
January 28, 2014	Winter Ranch Management "Town Hall" Meeting	Ness City, KS
January 29, 2014	Winter Ranch Management "Town Hall" Meeting	Wichita, KS
January 30, 2014	Winter Ranch Management "Town Hall" Meeting	Greensburg, KS
February 4, 2014	KSU Swine Profitability Conference	Manhattan
February 12, 2014	Winter Ranch Management "Town Hall" Meeting	Concordia, KS
March 7, 2014	KSU Cattlemen's Day	Manhattan
March 29, 2014	Kansas Junior Sheep Producer Day	Manhattan
April 11, 2014	37 th Midwest Meat Processing Workshop	Manhattan

WHAT'S NEW.....

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

The holidays provide a time to pause and reflect upon events of the past year. For livestock producers, 2013 may mark a turning point in history. We hope to be leaving behind the drought and accompanying high feed prices and entering a period of sustained profitability with good market prices and more reasonable feed costs. Producers that have survived the last few years deserve the rewards for their perseverance. We thank our partners in local extension offices, the media, and allied industry that have helped livestock producers navigate through these difficult times. We are proud of the work that you do to help Kansas livestock producers.

*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
“Mentoring 101”

Sometimes, with the mantle of management comes unanticipated but essential duties. One of these is especially for managers who are supervising younger subordinates.

One reality of leadership, so subtle that it is often lost on both manager and employee, is that, as leaders, we are always teaching something, intentionally or unintentionally, for better or for worse.

The supervisor who makes an intentional effort to “catch” employees doing something right is not only motivating the team, but is also coincidentally “teaching” the team that leadership doesn’t only entail giving orders and enforcing discipline, but also engendering enthusiasm and camaraderie among the team.

In conjunction with this continual, coincidental teaching, comes the obligation of the team leader to mentor younger teammates. Mentoring is not to be taken lightly. Mentoring means giving of yourself, with little hope to see a return on your investment. But it is important nonetheless. The future of your organization resides in the quality of your future leaders; none of us will live forever, and we should plan to work ourselves out of our job. By the end of your career, your hope should be that you’ve intentionally and effectively prepared a young mentee to step into your shoes, and your chair.

No one can do this job for you; only an effective leader can teach leadership. Leaders do lead by example, but they also must communicate clearly, intentionally, and effectively. In the absence of a clear message communicated by the team leader, the team will create their own message---be it right or wrong. This is true in day-to-day operation of the organization, but also in the process of mentoring young, future leaders. The intentional mentor will continually look for teachable moments to pass along leadership lessons to the mentee.

There’s a reason someone once said “It’s lonely at the top.” Leadership will be costly, and taxing. The incidental leader will focus only on the daily, quarterly, or annual production goals and the challenges that erupt along the way. But the complete leader, who sees not only the immediate goals and challenges but also sees clearly the future of the organization including future hurdles and challenges and opportunities, will eagerly seek out young future leaders and take on the mantle of mentorship. This is accepted not because it’s some technique that was gleaned from a management guide, but because they can clearly see that proper training of future team leaders is just as essential for operational success as meeting immediate production targets.

Seek out your future leaders! Every good organization holds its future in its own hands in the form of its future leaders, to be raised up from within.

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

**Management
Minute**
“Mentoring 101”

Feedlot Facts
“Watch the Fat”

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

“Watch the Fat”

Since the advent of cattle feeding, we learned early on that cattle make very good use of by-product feeds that monogastrics---pigs, chickens, and people---can use very little of productively, especially if cellulose---fiber---makes up the majority of the feed. The corollary to that guideline is that if cattle have to compete with humans for a feedstock, humans win.

Three decades ago, wheat was a common ingredient in feedlot diets throughout the high plains. Today, the opportunity only occasionally presents itself due to temporary pricing inversions. We like our bread and Twinkies---humans win.

A similar, but more subtle phenomenon has taken place gradually over the past few years, since the ethanol industry boom began. Corn oil is worth more marketed to humans as that---corn oil---than to livestock in the form of distillers' grains (DG), and the ethanol plants have developed novel technologies to extract an increasing amount of that oil, although not nearly all, from the by-product.

I am a capitalist and am in favor of ethanol companies finding a way to increase their income from their secondary product streams, but as a cattle nutritionist, I also must be aware of changes the removal of oil will make on the value of the by-product for cattle feed.

Early on, the fat content of corn DG was commonly between 11 and 13%; however, today, some corn DG with fat levels near 8%, and some as low as 4%. Fat in cattle feed contains about 2.25 times more energy than carbohydrates, so removing fat such that the void left is filled with predominantly cellulose, would be expected to result in a lower energy feed.

Recent research conducted at South Dakota State University concluded that for every 1% decrease in fat content of the finishing diet, we should expect a 1 Mcal NEg / cwt reduction in energy value. So if DG makes up 40% of the finishing diet, and fat content of those DG was formerly 12% and is now 8%, we've lost 1.6% fat in the final diet, or 1.6 Mcal NEg/cwt.

Wet DG with solubles has about 15% greater NEg vs. dry-rolled corn. If the value of DG over corn was previously 15% in a dry-rolled corn-based finishing diet, we can reasonably expect the new value to be about 12.5% over corn. So if we had been paying \$5 / bushel for corn, we should expect a decrease in feed value of the DG of \$5.24 / ton on a 100% dry matter basis.

More broadly, if the fat percentage in DG has decreased over time, the feed value of DG for a cattle finishing diet is also decreased, and the astute cattle feeder should adjust pricing expectations accordingly.

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

↪ **Dosing with Lactipro Decreases Forage Intake and Manure Output** - Ninety steers were given brome hay upon arrival at the Kansas State University Beef Cattle Research Center. Approximately 24 hours after arrival, steers were processed and assigned to a traditional 3-diet step-up regimen where each diet was fed for 6 days (Control) or orally dosed with 100 mL of Lactipro at processing and placed directly onto a finishing diet (Lactipro). Steers were housed in concrete-surfaced pens, and total pen fecal output was collected daily for 24 days. Daily dry matter intake was measured during the same period. Fecal samples were composited into 6-day periods for each pen corresponding to each step-up diet fed to the Control steers.

The Bottom Line: Dry matter intake and fecal output were decreased during the step-up period when steers were dosed with Lactipro and placed directly onto a finishing diet. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information contact Jim Drouillard (785-532-1204; jdrouill@ksu.edu) or Larry Hollis (785-532-1246; lhollis@ksu.edu).

↪ **Effects of Corn Particle Size, Complete Diet Grinding, and Diet Form on 24- to 50-lb Nursery Pig Growth Performance** - A total of 996 pigs (PIC TR4; initially 24.5 lb BW and 40 d of age) were used in a 21-d study to determine the effects of corn particle size, complete diet grinding, and diet form on nursery pig growth performance and caloric efficiency. Pens of pigs were balanced by initial BW and randomly allotted to 1 of 6 dietary treatments with 6 replications per treatment and 28 pigs per pen. The same corn-soybean meal-based diet containing 30% corn dried distillers grains with solubles (DDGS) and 10% wheat middlings (midds) was used for all treatments. The 6 treatments were: (1) roller mill-ground corn (737 μ) fed in meal form; (2) treatment 1 fed in pellet form; (3) hammer mill-ground corn (324 μ) fed in meal form; (4) treatment 3 fed in pellet form; (5) complete mixed diet reground through a hammer mill (541 μ) fed in meal form; and (6) treatment 5 in pellet form.

Overall (d 0 to 21), ADG and ADFI decreased when corn was finely ground and fed in meal form but increased when fed in pelleted form, resulting in a tendency for a diet form × corn particle size interaction. Fine-grinding the complete mixed diet had no effects. Pelleting diets improved ADG, F/G, ME and NE energetic efficiencies, and final BW.

Bottom Line... Pelleting diets significantly improved performance, and reducing the particle size of corn from 737 to 324 μ improved nursery pig performance when fed in pelleted form. 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. De Jong, J.M. DeRouchey, M.D. Tokach, R.D. Goodband, C.W. Hastad, and S.S. Dritz)

↳ **Effects of Corn Particle Size and Diet Form on Finishing Pig Growth Performance and Carcass**

Characteristics - A total of 960 pigs (PIC TR4 × Fast Genetics York-AND × PIC Line 02, initially 75.7 lb BW) were used in a 101-d trial to determine the effect of corn particle size and diet form on finishing pig growth performance and carcass characteristics. Pens were randomly allotted to 1 of 6 experimental treatments by initial BW with 8 pens per treatment and 20 pigs per pen. All diets were fed in four phases with the same corn-soybean meal-based diet containing 30% dried distillers grains with solubles (DDGS; Phases 1 to 3) or 15% DDGS (Phase 4) used for all diets. The 6 experimental treatments were arranged in a 2 × 3 factorial with main effects of final feed form (meal vs. pellet) and corn particle size (650 μ, 350 μ, or an equal blend of the 650 μ and 350 μ ground corn). Overall (d 0 to 101), linear particle size × diet form interactions were observed for ADFI and F/G due to ADFI decreasing and F/G improving as particle size was reduced for pigs fed meal diets but not for pigs fed pelleted diets. Pigs fed pelleted diets had increased ADG and final BW and improved F/G. As corn particle size decreased, ADG and ADFI decreased linearly. Pigs fed pelleted diets had increased HCW compared with pigs fed meal diets. Yield, backfat, and loin depth were not influenced by particle size or diet form.

Bottom Line... Pigs fed pelleted diets had improved growth performance compared with those fed meal diets, with the greatest improvement in F/G observed from pigs fed coarse-ground (650 μ) corn. Feed efficiency improved as corn particle size decreased for pigs fed meal diets but not for those fed pelleted diets, suggesting that there was no benefit to grinding corn finer than 650 μ for pelleted diets. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted J.E. Nemechek, M.D. Tokach, K.F. Coble, J.M. DeRouchey, R.D. Goodband, and S.S. Dritz)

↳ **Effects of an Altered Suckling Method on Piglet Performance during Late Lactation and the Nursery Period**

The effects of an altered suckling method (ALT) on nursery pig performance were studied in a 14-d experiment encompassing late lactation and the early nursery period. A total of 611 pigs (PIC 327 × 1050) nursing 54 sows were used in 2 farrowing groups. Sows were allotted to treatments on d 18 of lactation when all but the 5 lightest-weight pigs from each ALT litter were split-weaned (SW) and moved to the nursery. The lightweight pigs in the ALT litters were paired within parity group such that two litters were combined. These combined litters rotationally suckled (RS) each sow of the pair for 12 h/d from d 18 until weaning on d 25. Pigs in control litters were weaned on d 21.

At weaning, pigs were randomly assigned to pens (7 pigs/ pen). All weaned pigs received a common feed budget of 4 lb of Phase 1 followed by a Phase 2 diet. Pigs were weighed on d 18, 21, 25, 28, and 32 of age. Differences in weight gain, variation in growth within litter, and the association between piglet weight category on d 18 and treatment effects were evaluated. An interaction was detected for pig weights and weight gain from d 18 to 32 because the RS pigs gained 15% more than lightweight controls, whereas SW pigs were 15% lighter than heavyweight controls on d 32. Overall variation as measured by the changes in CV and SD was 50% less within ALT litters compared with controls. When pig weight groups were compared, the ALT treatment benefited growth of light (<10 lb) pigs but decreased the weight gain of heavy (>14 lb) pigs.

Bottom Line... Performance was similar between ALT and control pigs, but the apparent improvement in weight variation observed within ALT litters warrants additional investigation. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by K.M. Gourley, H.L. Frobose, M.D. Tokach, J.M. DeRouchey, S.S. Dritz1, R.D. Goodband, J.L. Nelssen, and D.L. Davis)

AS&I Faculty Spotlight



Evan Titgemeyer (etitgeme@k-state.edu; 785-532-1220)
Professor/Coordinator of Research and ASI Graduate Program Director

Evan Titgemeyer grew up on a small family farm in northwest Ohio. Following completion of a B.S. degree at The Ohio State University (1984), he completed both M.S. (1986) and Ph.D. (1989) degrees at the University of Illinois. His graduate work was under the direction of Dr. Neal Merchen and focused on determining amino acid requirements of growing cattle; this is an area of research where he is still active. Following post-doctoral training with Dr. George Fahey, Jr. in the area of fiber chemistry, he was hired as a faculty member at Kansas State University in 1992, and he is currently a professor in the Department of Animal Sciences and Industry, with specialization in the area of ruminant nutrition. His current appointment is 70% research and 30% teaching.

Dr. Titgemeyer's research program focuses on protein and amino acid utilization by beef and dairy cattle. Recent research projects have evaluated various factors that can impact amino acid utilization by growing cattle. Increases in energy supply to growing steers have been found to improve methionine utilization. Research also has demonstrated that the utilization of methionine in some cases appears to be related to the supply of cysteine and/or glycine, but the linkage between cysteine supply and methionine requirements is not as clear in growing cattle as it is in most monogastric species. In contrast to the current beef NRC model, Dr. Titgemeyer's research has demonstrated that there are differences among the amino acids in terms of how efficiently they are used for growth by cattle. Histidine appears to be used more efficiently than leucine, which is in turn used more efficiently than methionine. No negative effects of excess dietary nitrogen (provided either as amino acids or as non-protein nitrogen) on utilization of methionine, histidine, and leucine have been observed.

Current teaching commitments are primarily in graduate nutrition courses. Currently, Dr. Titgemeyer serves as instructor for Nutritional Physiology (ASI 826), Protein Nutrition (ASI 921, team taught with Dr. Bob Goodband), and Analytical Techniques (ASI 860, 861, 862, and 863). Nutritional Physiology covers basic mechanism related to digestion and absorption of nutrients, with a focus on the small intestinal epithelium. Protein Nutrition discusses both basic and applied aspects of protein and amino acid utilization by livestock species. The Analytical Techniques courses are designed to provide beginning graduate students in nutrition with the basic laboratory skills required to successfully complete their graduate research.



Karen Schmidt (kschmidt@k-state.edu; 785-532-1216)
Professor/Food Science

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. 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.

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.*