

News from KSU Animal Sciences

October, 2008



Newsletter from the Department of Animal Sciences and Industry
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WHAT'S NEW...

- ↪ **The Department of Animal Sciences and Industry seeks applications for an Assistant/Associate Professor, Cow-Calf Extension Specialist.** Applicants for this full-time, 12-month, tenure-track position (70% extension, 30% research) will be expected to provide leadership in organizing, planning, designing, and developing an innovative, team-led research and extension program for the future of the cow-calf sector and the overall beef industry. View complete position announcement at: <http://www.asi.ksu.edu/positions>. For more information, contact Dale Blasi, 785-532-5427; dblasi@ksu.edu
- ↪ **2008 KSU Stocker Conference Proceedings available online** – Topics for this year's KSU Stocker Conference included Key Findings from the National Stocker Survey; New Realities of Conducting Business in the Stocker Segment; Current Concepts in Medicated Feed Additives and much more. A copy of the proceedings is linked to this newsletter and is also available at www.KSUbeef.org. Printed copies are available for \$5.00 each. If you are interested in receiving the printed version, contact Lois Schreiner (785-532-1267; lschrein@ksu.edu).
- ↪ **Fall Manure Application** - Many livestock producers will be applying manure to harvested fields in the upcoming months. With commercial fertilizer costs dramatically higher than only a few years ago, producers need to accurately apply manure to obtain the yield benefits for next year's crop as well as capturing economic savings. Calibration of equipment must be completed for accurate application, as well as knowing the soil nutrient levels to avoid over application, particularly for phosphorus. The utilization of manure as an on-farm resource has numerous benefits, but must be done accurately to ensure economic and environmental sustainability. For more information, contact Joel DeRouchey (jderouch@ksu.edu; 785-532-2280)
- ↪ **Lower Roughage Levels Improve Feed Conversion**. – Crossbred yearling heifers (n = 582) were fed finishing diets for 110 days. Treatments were 0% dried distiller's grains with 15% corn silage, 25% dried distiller's grains with 15% corn silage, or 25% dried distiller's grains and 5% corn silage, using either steam-flaked corn or dry-rolled corn as grain source. Feedlot performance and carcass characteristics were measured on all animals.
The Bottom Line... Cattle performance can be improved by reducing roughage levels in finishing diets that contain dried distiller's grains. View the complete research report online 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).
- ↪ **Blade Tenderization in Combination with Injection Enhancement Containing an Enzyme Increases Tenderness of Strip Steaks from Fed Cull Cows** – Strip loins from both carcass sides were removed from 31 fed cull-cow carcasses. Strip loins were aged for 7 or 28 days, divided in half, and frozen. One half from each strip loin was thawed and either blade tenderized and injected with a typical industry enhancement containing bromelin or not enhanced. Sensory panel, Warner-Bratzler shear force, and moisture loss evaluations were conducted.
The Bottom Line... Aging cow steaks from 28 days to increase tenderness is not necessary when blade tenderization and injection enhancement containing bromelin are used. View the complete research report online at www.asi.ksu.edu/cattlemensday. For more information, contact Liz Boyle (785-532-1247; lboyle@ksu.edu) or John Unruh (785-532-1245; junruh@ksu.edu).

↪ **IRM Redbooks for Sale** –It is not too late to get your 2009 IRM Redbooks! This year the cost will be: For orders of less than 10 = \$5.00/book; Orders of 10 or more = \$4.75/book which includes postage. To order your supply of redbooks, please contact Lois (lschrein@ksu.edu; 785-532-1267).

↪ The Department of Animal Sciences and Industry seeks applications for a **Research Assistant for the Beef Stocker Unit**. This position will work as part of the KSU Beef Stocker Unit by conducting research operations related to stocker cattle health and nutrition management as well as supervise the maintenance of pasture assets. Review of the applications begins November 1, 2008, and continues until the position is filled. For information contact Rebekah Trowbridge (785-532-0537; rlt3443@ksu.edu).

↪ **Omega-3 Fatty Acid Supplementation and the Insulin-Like Growth Factor (IGF) System in Early Pregnancy in Pigs** – The IGF system of growth factors, receptors and binding proteins functions from early in pregnancy. Recent evidence indicates improved embryo survival in gilts fed supplemental omega-3 fatty acids beginning before conception. Here we report effects of supplementing a corn-soybean meal diet (control) with a marine source of protected omega-3 fatty acids (PFA, 1.5% of diet) on mRNA expression for IGF-I, IGF-II, IGF Binding Protein-3 (IGFBP-3) and IGFBP-5 in the porcine gravid uterus. The PFA (Gromage™) contained equal amounts of eicosapentanoic (EPA) and docosahexanoic (DHA) acids and replaced corn in the diet beginning when gilts were approximately 170 d old (n = 13/treatment).

Gilts were artificially inseminated at approximately 205 d of age. Conceptus and endometrial samples were collected on d 11, 15, and 19 of gestation. All gilts were pregnant. In the conceptus, message for IGF-II and IGFBP-3 increased from d 15 to d 19, while there was an increase in IGF-I and IGFBP-5 from d 11 to 15 and a decrease to d 19. In the endometrium, message for IGF-I was stable over the interval, but message for IGF-II and IGFBP-5 were increased by d 15 and IGFBP-3 by d 19. There were trends for omega-3 fatty acid supplementation to increase endometrial IGF-II and IGFBP-5 on d 15. In the d-19 conceptus, embryonic but not extraembryonic IGF-I mRNA tended to be greater for PFA compared to control gilts. During d 11 to 19 the conceptus is elongating, attaching to the uterus, and the embryonic disc is differentiating from a homogenous tissue to form the tissues and organs of the adult. One mechanism for omega-3 fatty acid effects in early pregnancy could involve epigenetic effects on mRNA expression for the IGF and IGFBP proteins. More information is available on this experiment and others in the KSU Swine Day Report at www.ksuswine.org. (*This study conducted by A. Brazle, T. Rathbun, B. Johnson, and D. Davis.*)

↪ **Digestible Energy Content of Corn- Vs Sorghum-Based Dried Distillers Grains with Solubles and their Effects of Growth Performance and Carcass Characteristics in Finishing Pigs** – Two experiments were conducted to determine the nutritional value of corn- and sorghum-based distillers dried grains with solubles (DDGS). In Exp. 1, 120 finishing pigs (average initial weight of 244 lb) were used in a 19-d DE determination. The reference diet was 97% corn with vitamins, minerals, and amino acids added to meet or exceed all NRC suggested nutrient concentrations. Treatments were corn-based (Sioux River Ethanol, Hudson, SD and MGP Ingredients, Atchison, KS) and sorghum-based (US Energy Partners, Russell, KS and Western Plains Energy, Oakley, KS) DDGS substituted as 50% of the reference diet in place of corn. Comparisons among the treatments indicated that DDGS from corn had 101 kcal/lb greater DE than DDGS from sorghum. However, DE was different among the sources of corn-based DDGS and sorghum-based DDGS suggesting that plant of origin affects DE of DDGS.

In Exp. 2, 176 finishing pigs (average initial weight of 141 lb) were used in a 72-d growth assay. There were 11 pigs/pen and four pens/treatment with feed and water consumed on an *ad libitum* basis until the pigs were slaughtered at an average weight of 286 lb. Treatments were a corn-soybean meal-based control diet and diets with 40% corn-based, high-energy DDGS (Sioux River Ethanol), 40% corn-based, moderate-energy DDGS (MGP Ingredients), and 40% sorghum-based, moderate-energy DDGS (US Energy Partners). Pigs fed the control diet had greater overall ADG and digestibility of DM, N, and GE compared to pigs fed the DDGS treatments. Among the DDGS treatments, pigs fed the high-energy product had lower overall ADG, ADFI, and digestibility of DM but tended to have better F/G than pigs fed the moderate energy DDGS sources. As for carcass data, hot carcass weight and dressing percentage were greater and iodine value of jowl fat lower for pigs fed the control vs DDGS treatments. Among the DDGS treatments, pigs fed the sorghum-based DDGS had greater dressing percentage and lower iodine value than pigs fed the corn-based DDGS. Backfat thickness and percentage carcass lean were not affected by treatment. In conclusion, plant of origin and substrate used in the fermentation process (corn vs sorghum) affected the nutritional value of DDGS for finishing pigs. More information is available on this experiment and others in the KSU Swine Day Report at www.ksuswine.org. (*This study conducted by C. Feoli, J. D. Hancock, C. Monge, T. L. Gugle, S. D. Carter, and N. A. Cole.*)

UPCOMING EVENTS...

- ↳ It is not too late to be a part of the **Kansas State University Wildcat Steer Futurity**. Nominations are due by October 17 for the futurity. A minimum entry of five steers per producer is required. Only cattle weighing 450-850 pounds at feedlot entry will be accepted. Cattle will be received mid-November. Receiving date will be determined after nominations have been received.

For a complete list of Program Guidelines, along with a nomination form, contact Justin Waggoner (620-275-9164; jwaggon@ksu.edu) or Karl Harborth (620-431-1530; harborth@ksu.edu). This is an educational program that allows beef cattle producers to learn about the cattle feeding industry, and provides producers with an information feedback system regarding the performance and carcass composition of their cattle.
- ↳ Don 't miss out on the **Kansas Meat Goat Association 2008 Production Sale** which will be held on October 18 at the Woodson County Sheep and Goat Sale Barn in Yates Center, Kansas. For more information, contact Vanessa Ochs (785-418-6530; goats2kid@yahoo.com).
- ↳ The deadline to participate in the first session of the new **SowBridge Breeding Herd Education Series** is October 20. The SowBridge program is designed to deliver timely and relevant information in a convenient manner. Programs are delivered over the noon period to maximize learner participation while minimizing interruption of the normal daily work schedule. This program is designed to increase dissemination of information that will hopefully improve understanding and productivity in breeding herds and farrowing systems.

The session 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).
- ↳ The **2008 K-State Research and Extension Annual Conference** will be held October 20-23, 2008 at the K-State Student Union. The theme for this year's conference is "Healthy People, Healthy Earth." For more information on the conference visit www.oznet.ksu.edu.
- ↳ The **2008 BEEF Quality Summit** will be held November 6-7, 2008 at the Antlers Hilton Hotel in Colorado Springs, Colorado. The theme for this year's meeting will be "Quality – A Solution to Rising Costs." For more information, visit www.beefconference.com.
- ↳ The **2008 Mountain Plains Sheep and Goat Conference** will be held November 14 and 15, at Island Grove Park, in Greeley, Colorado. This two day event will be a premium opportunity for sheep and goat producers to learn about the latest information and management techniques available for their industries. For a complete schedule and registration brochure, visit www.mountainplainsheepandgoat.com. For more information, contact Brian Faris (785-532-1255; brfaris@ksu.edu).
- ↳ **Burn workshops planned** - Landowners and producers enrolled in Conservation Reserve Program (CRP) contracts containing the practice "Rare and Declining Habitat" may be required to perform a maintenance burn at least once during the life of the contract. Burning on CRP acreage can be conducted between Feb. 1 and April 15. To help producers be better prepared to comply with those requirements and conduct a safe burn, fifteen burn workshops have been scheduled for October, November and December 2008 in western Kansas. Locations currently scheduled include Oakley, Stockton, Colby, Bazine, Scott City, and Tribune, with additional sites still to be identified. For detailed information about the workshop closest to your location contact your local county KSU Extension office, USDA Service Center, or County Conservation District.

- ↪ The **2008 KSU Swine Day** will be held Thursday, November 20 at the KSU Alumni Center. The schedule for the day is as follows:
 - 8:00 a.m. Trade Show Opens
 - 9:45 a.m. Welcome – *Dr. Ken Odde*
 - 10:00 a.m. Update on Current K-State Swine Research to Help Improve Net Return of a Swine Business – *K-State Swine Team*
 - 11:00 a.m. Feed vs Fuel – What Will Be the New Trends for Corn and Soybean Meal Pricing? – *Dr. Ron Plain, University of Missouri*
 - 12:00 noon Lunch
 - 1:30 p.m. Continuation of Update on Current K-State Swine Research – *K-State Swine Team*
 - 2:00 p.m. What Can We Expect for Pork Prices for 2009 and Beyond? – *Dr. Ron Plain*
 - 3:30 p.m. Open House and Pork Tailgate Party – View the new finishing facility at the KSU Swine Teaching & Research Center and enjoy some hospitality with a K-State BBQ.

The registration deadline is November 10. New for this year, we are able to accept credit card payments with online registration. For complete details and registration information go to www.ksuswine.org. For more information, contact Jim Nelssen (785-532-1251; jnelssen@ksu.edu).

- ↪ The **Applied Reproductive Strategies in Beef Cattle Symposium** will be held December 2-3, 2008 in Fort Collins, Colorado. The workshops are designed to improve the understanding of the physiological processes of the estrous cycle, currently available procedures to synchronize estrus and ovulation, and the proper application of these systems. They will also focus on improving participants' understanding of methods to assess male fertility and how it affects the success of AI programs. For complete details on the symposium, go to <http://www.appliedreprostrategies.com/>

- ↪ The **Adult PQA Plus Training** will be held on Tuesday, December 16, 2008, from 9:00 a.m. to 5:00 p.m. in Weber Hall, Room 146.. This training is for agents and veterinarians that wish to become PQA Plus Advisors. Only trained advisors are allowed to certify pork producers in the PQA Plus program.

If you have already been Adult PQA+ certified, you do not need to re-take the training. This training is for those that have not already been trained as advisors. For more information or to register for the training, contact Mike Tokach (785-532-2032; mtokach@ksu.edu) or Joel DeRouchey (785-532-2280; jderouch@ksu.edu).

- ↪ The **2008 Four-State Beef Conference** will be held January 14th in Washington, Kansas. Mark the date on your calendar and watch for more details. For information, contact Ross Mosteller, River Valley District/Washington County (785-325-2121; rmostell@ksu.edu)

- ↪ Mark your calendars for the upcoming **KSU Swine Profitability Conference** to be held Tuesday, February 3, 2009 at Forum Hall of the K-State Student Union. Watch for more details. For more information, contact Jim Nelssen (785-532-1251; jnelssen@ksu.edu).

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
October 17, 2008	KSU Wildcat Steer Futurity Nomination Forms due	
October 18, 2008	KMGA Production Sale	Yates Center, KS
October 20-23, 2008	KSU Research and Extension Annual Conference	Manhattan
November 6-7, 2008	BEEF Quality Summit	Colorado Springs, CO
November 14-15, 2008	Mountain Plains Sheep and Goat Conference	Greeley, Colorado
November 20, 2008	KSU Swine Day	Manhattan
December 2-3, 2008	Applied Reproductive Strategies in Beef Cattle Symposium	Fort Collins, Colorado
December 16, 2008	Adult PQA+ Training	Manhattan
January 14, 2009	4-State Beef Conference	Washington, Kansas
February 3, 2009	KSU Swine Profitability Conference	Manhattan

AS&I FACULTY SPOTLIGHT



Mike Brouk (mbrouk@k-state.edu; 785-532-1207)
Associate Professor/Extension Specialist

Michael J. Brouk was born November 15, 1962, in Franklin County, Missouri. He attended Linn R-2 Schools graduating in May 1981. Following high school graduation, he attended the University of Missouri-Columbia majoring in agronomy and dairy science and received the Bachelor of Science degree in Agriculture in May 1985. From 1976 to 1984, he was also an active partner in the family grain farm located in Osage County, Missouri. The University of Missouri-Columbia employed Mike as a Research Specialist for two years after he completed his undergraduate program. The research projects involved the utilization of dairy processing plant waste as a fertilizer for forage crops and as a protein and mineral supplement for livestock. He then began a Master of Science degree program under Dr. Ron Belyea at the University of Missouri-Columbia. The title of his thesis was "Chewing Behavior and Digestion of Alfalfa Forage." Following completion of his M.S. degree, Mike accepted a position with Cenex/Land O'Lakes in southwestern Minnesota. He worked as a Livestock Production Specialist developing nutrition and management programs for dairy and beef producers. After two years with LOL, he entered a doctoral program under the direction of Dr. David Schingoethe at South Dakota State University. His dissertation topic was "Net Energy of Lactation and Ruminant Degradability of Wet Corn Distillers Grains." Following completion of the Ph.D. in Animal Sciences he joined the teaching and research staff of South Dakota State University in January 1994. Mike was responsible for teaching undergraduate dairy management, nutrition, breeding and cattle evaluation courses as well as developing a dairy cattle nutrition research project.

Mike returned to the University of Missouri-Columbia in August of 1996 as an Extension Specialist with Commercial Agriculture Program. He was responsible for developing state wide extension programs in the areas of dairy cattle nutrition, forage systems, replacement heifer development and dairy cattle management. He joined the faculty of Kansas State University in December of 1998 as a State Dairy Extension Specialist where he holds a 30% teaching and 70% extension appointment. His current responsibilities include development of programs in dairy cattle nutrition, management, cow comfort, replacement heifer development, dairy expansion and heat stress abatement. He is currently involved in several research projects evaluating various heat stress abatement methods in commercial dairy herds.

Mike and his wife Michelle together with their five children, Megan, Morgan, Miranda, Matthias, and Marissa reside near Manhattan, KS.



Liz Boyle (lboyle@k-state.edu; 785-532-1247)
Professor/Extension Meats Specialist

Originally from Richfield, Minnesota, Liz Boyle has been a member of the Animal Science faculty since 1992. She received her B.S. in Wildlife Biology from the University of Minnesota in 1980. Her M.S. in Food Science and Nutrition, and Ph.D. in Food Science, Meats emphasis were received from Colorado State University in 1987 and 1991, respectively. Following post-doctorate work at the University of Kentucky and the University of Minnesota, Dr. Boyle made the move to Kansas.

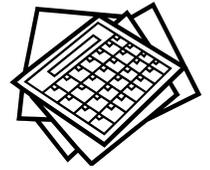
Dr. Boyle works primarily in Extension to enhance the quality and safety of meat products and to provide scientific and technical assistance to meat processors and trade associations. She also teaches Hazard Analysis and Critical Control Point (HACCP) workshops nationally as a certified Lead HACCP instructor and teaches undergraduate and graduate courses in HACCP, Advanced HACCP, and Processed Meat Operations.

Her research interests focus on the impact of HACCP on small and very small meat and poultry processing facilities, meat safety and quality.

Dr. Boyle spends her free time with her husband Dan, a marathon runner, her daughter Jessica, a high schooler who is actively involved with dance, and their dogs, cats, chickens, and a duck named Gus at their home near Manhattan, KS.

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, or phone 785-532-1267.