

News from KSU Animal Sciences

January, 2008



Newsletter from the Department of Animal Sciences and Industry
213 Weber Hall, Kansas State University, Manhattan, KS 66506
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WHAT'S NEW...

- ↳ Have questions for an AS&I Extension Specialist, but not sure who to call?? For a complete listing of the [KSU Department of Animal Sciences and Industry – Extension Faculty](http://www.asi.ksu.edu), visit www.asi.ksu.edu under the “Research and Extension” tab.
- ↳ **Formation and Safety Of 2-Dodecylcyclobutanone, a Unique Radiolytic Product in Irradiated Beef** - Patties containing 15% and 25% fat were irradiated by electron beams at 1, 2, 3, and 4.5 kGy. Commercially available irradiated ground beef with different fat levels was analyzed in order to estimate dose absorbed by these samples. Mutagenicity of 2-DCB was evaluated by the Ames assay with and without S9 enzyme activation. Acute toxicity of 2-DCB was evaluated by the Microtox acute toxicity system and compared with cyclohexanone and nonenal, both Generally Recognized As Safe (GRAS) additives.
The Bottom Line... 2-DCB can be used as an irradiation dose indicator over a wide range of fat levels. The amount of 2-DCB formed due to irradiation is too low to have an adverse effect on consumer health. For more information, contact J. Scott Smith (785-532-1219; jschem@ksu.edu) or Liz Boyle (785-532-1247; lboyle@ksu.edu).
- ↳ **Altered Insemination Timing Improves Pregnancy Rates after a CO-Synch + CIDR Protocol** - Beef cows (n = 605) at three Kansas locations were treated with the CO-Synch + CIDR protocol: an injection of GnRH was given concurrent with a vaginally placed, progesterone-releasing controlled internal drug release (CIDR) insert; 7 days later the insert was removed and PGF2 α was injected. Cows were inseminated at four different times after the PGF2 α injection: 48, 56, 64, or 72 hours. At insemination, each cow received a GnRH injection to induce ovulation. Pregnancy was diagnosed 32 days after insemination.
The Bottom Line... Using fixed-time insemination with a CO-Synch + CIDR protocol may have a broader window of insemination times from 56 to 64 hours after PGF2 α . For more information, contact Jeff Stevenson (785-532-1243; jss@k-state.edu) or Sandy Johnson (785-462-6284; sandyj@ksu.edu).
- ↳ **Digestible Energy Content Of Corn And Triticale When Fed To Finishing Pigs** - A total of 96 pigs (average initial wt of 201 lb) were used to determine the DE content of corn and triticale. The pigs were sorted by sex and ancestry, blocked by weight, and assigned with 12 pigs/pen and four pens/treatment. The diets were corn (97.5% of the formulation) and triticale (97.8% of the formulation) with added vitamins, minerals, and amino acids. Feed (meal form) and water were consumed on an *ad libitum* basis. The pigs were allowed to adjust to the experimental diets for 4 d. On the afternoon of d 4 and morning of d 5, feces were collected from no less than six pigs/pen (via rectal massage). The feed and fecal samples were dried, ground, and analyzed for concentrations of DM, N, and GE with chromic oxide used as an indigestible marker. Digestibility of DM was greater for pigs fed corn vs triticale (82.8 vs 81.2%, respectively). However, the opposite was true for digestibility of N with values of 67.8% for corn and 74.7% for triticale. Digestibility of GE was not different among the cereal grains. However, when the gross energy for the cereals was multiplied by their respective digestibility coefficients, triticale grain had greater DE with a value of 1,531 kcal/lb vs 1,479 kcal/lb for corn. The DE of the corn used in this experiment was low compared to NRC values, but nonetheless our results indicated that this particular triticale was utilized well by finishing pigs supporting greater digestibility of N and having greater DE than corn. More information is available in the 2007 KSU Swine Day Report at www.ksuswine.org.
(This study conducted by C. Feoli, J. D. Hancock, C. R. Monge, and T. L. Gugle.)

↳ **Effects of Varying Creep Feeding Duration on Proportion of Pigs Consuming Creep Feed and Pre-Weaning Performance** - A total of 54 sows (PIC Line 1050) and their litters were used in this study to determine the effects of varying durations of creep feeding on the rate of pigs consuming creep feed (eaters) and pre-weaning performance. Two groups of sows were blocked according to parity and date of farrowing and allotted to three experimental treatments using a randomized complete block design. Creep feeding was initiated at d 7, 14, and 18 from birth for a duration of 13, 6, and 2 d of creep feeding. A creep diet (1,614 kcal ME/lb, 1.51% TID Lys) with 1.0% chromium oxide was offered *ad libitum* until weaning (d 20) using a rotary creep feeder with hopper. A single lactation diet (1,586 kcal ME/lb, 0.97% TID Lys) was used where sows were allowed free access to feed throughout lactation. Piglets were weighed individually at d 0 (birth), 7, 14, 18, and 20 to calculate total and daily gains. Daily creep feed intake per litter was recorded and calculated. Fecal samples from all piglets were taken twice per sampling day using sterile swabs at d 14, 18, and 20 for Treatment 1; at d 18 and 20 for Treatment 2; and d 20 for Treatment 3. Piglets were categorized as 'eaters' when fecal sample was colored green at least once on any of the sampling days. Overall, there were no differences in weaning weights, total gain, and daily gain among pigs and litters fed creep for different durations. Total creep feed intake of litters fed creep for 13 and 6 d were greater than those litters provided creep feed for 2 d. There were no differences in overall creep intake between litters fed for 13 and 6 d. Litters provided with creep feed for 13 d produced 10% more (80 vs. 70%) eaters than litters fed creep for both 6 and 2 d. There were no differences in the percentage of eaters between litters fed creep for 6 and 2 d. In conclusion, longer durations of creep feeding did not affect pre-weaning gain and weaning weights but did increase the proportion of eaters in whole litters; however, a relatively high percentage of pigs (70%) were classified as eaters by providing creep feed for only 2 d prior to weaning. More information is available in the 2007 KSU Swine Day Report at www.ksuswine.com. (*This study conducted by R. C. Sulabo, M. D. Tokach, E. J. Wiedemann, J. Y. Jacela, J. L. Nelssen, S. S. Dritz, J. M. DeRouchey, and R. D. Goodband.*)

↳ **Evaluation Of A PCV2 Vaccine On Finishing Pig Growth Performance And Mortality Rate** - A total of 2,553 pigs (PIC L337 × C22) were used in two experiments in a commercial research barn to evaluate the effects of a commercially available Porcine Circovirus Type 2 (PCV2) vaccine on finisher pig growth rate, feed efficiency, and mortality rate. Pigs in Exp. 1 were vaccinated at 9 and 11 wk of age while pigs in Exp. 2 were vaccinated earlier at 5 and 7 wk of age. In Exp. 1, 1,300 pigs were individually weighed and the vaccine treatment administered 15 and 1 d before being placed on test in the finisher. In Exp. 2 1,253 pigs were used and randomly allotted based on nursery pen average pig weight and the vaccine treatment administered 41 and 27 d before being placed on test in the finisher. Pen weights were obtained on d 0 and every 2 weeks until the end of the trial. Feed intake was recorded on a pen basis. In Exp 1, growth rate, feed intake, feed efficiency, and mortality were improved in vaccinated pigs compared to unvaccinated pigs. In Exp. 2, there was a vaccine by sex interaction for ADG 2. The interaction was the result of the vaccine increasing ADG to a greater extent in barrows than in gilts. The interaction for ADG resulted in a vaccine by sex interaction for market weight. Vaccinated barrows were 10.6 lb heavier compared to unvaccinated control barrows while vaccinated gilts were only 2.1 lb heavier than unvaccinated gilts at market. In Exp. 2, ADFI and F/G were numerically better and mortality rate was decreased for vaccinated pigs compared to control pigs. In both experiments, mortality rates were lower in vaccinated pigs. Vaccinated pigs had 2.6 and 5.9% less mortality than non-vaccinated pigs in Exp. 1 and 2, respectively. The commercial PCV2 vaccine used in this study was effective at reducing mortality and increasing growth rate in finisher pigs with histopathologic lesions suggestive of Porcine Circoviral Disease (PCVD). More information is available in the 2007 KSU Swine Day Report at www.ksuswine.org. (*This study conducted by J. Y. Jacela, S. S. Dritz, M. D. Tokach, J. M. DeRouchey, R. D. Goodband, and J. L. Nelssen.*)

↳ **You Asked It** – For the latest tips from the Rapid Response Center, be sure to check the “**You Asked It**” newsletter at <http://www.oznet.ksu.edu/extrapidresponse/youaskedit.htm>. Agents are welcome to use the information for their local newsletters or news stories. Newsletters will be added to the website by the 15th of each month. For more information on the newsletter or the Rapid Response Center, contact Karen Blakeslee (kblakesl@oznet.ksu.edu; 785-532-1673).

UPCOMING EVENTS...

- ↪ An exciting and informative Meat Processing Workshop has been planned at Kansas State University in conjunction with the Kansas Meat Processors Association. The **31st Midwest Processed/Cured Meat Workshop** will be held on Saturday, February 2, 2008 at Weber Hall on the KSU Campus. This is a great opportunity to see, hear and ask questions as state and Quad-States award winning meat processors demonstrate the manufacture of their products. New this year to the workshop is the opportunity to bring one of your own processed products to the workshop for constructive evaluation while learning how these products are evaluated by judges at cured meat competitions.
- Registration is \$85.00 per plant and includes lunch for two people if received by January 28, 2008. After that date, the fee will increase to \$90.00 per plant. For a registration form or more information, contact Liz Boyle (lboyle@ksu.edu; 785-532-1247).
- ↪ The **2008 KSU Swine Profitability Conference** will be held Tuesday, February 5 in Forum Hall of the K-State Student Union. A great program has been lined up. The revised schedule will be as follows:
- 9:15 a.m. Registration
 - 9:30 a.m. Is Your Team All Driving in the Same Direction?
Dr. Larry Firkins, University of Illinois
 - 10:30 a.m. PCV will NOT be the Last Virus to Have a Major Impact on the Swine Industry: Is Swine Influenza the Ticking Time Bomb?
Dr. Marie Gramer, University of Minnesota
 - 11:15 a.m. Returning to a Family Swine Business from K-State – What I've Learned
Michael Springer, Independence, Kansas
 - Noon Lunch
 - 1:00 p.m. Influence of Ethanol, Oil, and Land Prices on the Future of the Swine Industry
Dr. Michael Swanson, Wells Fargo
 - 2:15 p.m. When, Where and Why: Marketing Decisions Based on Packer Matrixes and Pig Flow
Dr. Mike Tokach, KSU and Dr. Steve Henry, Abilene Animal Hospital
 - 3:15 p.m. Adjourn
- Registration fee of \$25 per participant is due by January 25, 2008. Please add an additional \$3.00 if you would like to order a parking permit. For more details on the conference and a registration form, go to the Upcoming Events section of www.ksuswine.org. For more information, contact Jim Nelssen (785-532-1251; jnelssen@ksu.edu).
- ↪ The **2008 K-State Horse Show Judges Seminar and Youth Judging Workshop** has been scheduled for Saturday, February 16. The event will be held in Weber Hall on the K-State Campus. Mr. Jon Wolf of Kewanee, Illinois will be the featured speaker.
- Registration begins at 8:30 a.m. followed by Judging of Video Classes at 9:00 a.m. Video classes will include halter, showmanship, western pleasure, western horsemanship, hunter under saddle and equitation. Lunch will be served at 12:00 noon followed at 1:00 p.m. with break-out sessions for coaches, youth and horse show judge participants. This seminar will also serve as the Kansas State Horse Show Judges Certification workshop.
- Pre-registration is highly suggested and is due by Monday, February 4, 2008. Total fee for the seminar is \$10.00 per person. For a registration form and more details, visit www.youthlivestock.ksu.edu under the Upcoming Events section. For more information, contact Julie Voge (jvoge@ksu.edu; 785-532-1264).
- ↪ A **High Plains Biofuels Co-Product Nutrition Conference** has been scheduled for February 20, 2008 at the Plaza Hotel in Garden City, Kansas. The conference will begin at 8:30 a.m. with registration. This conference is a great opportunity to get the latest information on biofuel co-products. Topics to be covered include:
- Impact of Ethanol Economy on the Feedyard Industry
 - DG Type & Level, Roughage Level & Use of Feed Additives in DG Diets
 - Graded Levels of Sorghum Wet DG & DIP Supply in Feedlot Cattle
 - Roughage Type & Level & Grain Processing Interactions with DG Diets

- Interaction of Corn Processing Method (DRC &SFC) & 20% WDGS Inclusion
- Use of Distiller's Grains (Wet & Dry) in Flaked Corn Feedlot Diets
- Feeding Value of Sorghum WDGS with Steam Flaked Corn
- Glycerine in Feedlot Rations
- Sulfur Toxicity in the Feedyard
- Distillers Grains: Potential Toxicity Issues

Cost of registration for the conference is \$40 before February 15 and \$55 after that date. A registration form and complete schedule are available at www.ksubeef.org under "Upcoming Events." For more details, contact Chris Reinhardt (cdr3@ksu.edu; 785-532-1672).

↳ **Cattlemen's Day 2008** –The 95th annual Cattlemen's Day will be held Friday, March 7, 2008. All events for Cattlemen's Day will be held in Weber Hall this year including the commercial trade show and educational exhibits. The Trade show and educational exhibits will open at 8:00 a.m. Registration for KSU Cattlemen's Day will be \$15 per person in advance or \$25 per person at the door. Morning refreshments and lunch are included with registration.

Invited speakers for 2008 will be Temple Grandin, Colorado State University and Dell Allen, Cargill Meat Solutions. For more information visit www.asi.ksu.edu/cattlemensday or call 785-532-1267.

↳ The **30th annual Special "K" Legacy Bull and Heifer Sale** will be held on March 7, 2008, at the conclusion of KSU Cattlemen's Day. The sale will begin at 3:30 p.m. at the Purebred Beef Unit. For more information or a sale catalog, contact Ryan Breiner (rbreiner@ksu.edu; 785-532-6127) or Megan McClure (mclclurem@ksu.edu; 785-532-2996).

↳ The **2008 KSU Sheep Day** has been scheduled for March 15 in Weber Hall. Mark the date on your calendar and watch for more details at www.asi.ksu.edu.

↳ New for this year is the **2008 KSU Youth Sheep and Meat Goat Day** which has been scheduled for March 15 in Weber Hall in conjunction with KSU Sheep Day. This year's program will include events for sheep and meat goat junior producers. Featured speaker for the meat goat sessions will be Terry Burks, an American Meat Goat Association Certified Judge. Plans are not yet confirmed on the speaker for the sheep sessions.

Registration fee for this event will be \$15 per participant if postmarked by February 22. After that date, the registration fee will be \$20 per participant. Registration will allow you to attend the meat goat sessions, sheep sessions or a combination of both. Visit www.youthlivestock.ksu.edu for more details as they become available. For more information, contact Julie Voge (jvoge@ksu.edu; 785-532-1264).

CALENDAR OF UPCOMING EVENTS

Date	Event	Location
February 2, 2008	Midwest Processed/Cured Meat Workshop	Manhattan
February 5, 2008	KSU Swine Profitability Conference	Manhattan
February 16, 2008	Horse Show Judges Seminar	Manhattan
February 20, 2008	High Plains Biofuels Co-Product Nutrition Conference	Garden City, KS
March 1, 2008	Goat Production and Marketing Conference	Phillipsburg, KS
March 7, 2008	KSU Cattlemen's Day	Manhattan
March 7, 2008	KSU Legacy Bull and Heifer Sale	Manhattan
March 15, 2008	KSU Sheep Day	Manhattan
March 15, 2008	KSU Youth Sheep and Meat Goat Day	Manhattan
April 5, 2008	High Plains Horseman's Day	Oakley, KS
May 28-29, 2008	Symposium on Beef Cattle Welfare	Manhattan

AS&I FACULTY SPOTLIGHT



Mike Tokach (mtokach@ksu.edu; 785-532-2032)

Extension State Leader

Extension Specialist-Swine Nutrition and Management

Growing up on a diversified livestock and grain farm in North Dakota taught Dr. Mike Tokach many of the practical day-to-day problems that livestock producers can encounter. In his position as a swine extension specialist and researcher, Mike has the opportunity to help producers solve those problems. Following completion of a bachelor degree in Animal Science at North Dakota State University in 1986, Mike earned a Masters degree in swine nutrition at Kansas State University in 1988. After completing his doctorate in swine nutrition at the University of Minnesota in March 1991, Mike joined the staff of K-State Research and Extension as a livestock specialist. His position has evolved from a 100% extension position to the current 60% extension and 40% research appointment. Mike was promoted to associate professor in 1995 and full professor in 2001. He assumed the additional role of Extension State Leader for Animal Sciences and Industry in July, 2005.

Mike's focus is transferring information to swine producers and conducting practical nutrition research. He is a member of a highly productive swine team. Mike has presented invited seminars at over 190 animal and veterinary science meetings around the world in addition to numerous presentations to local producer groups. Mike has authored or co-authored 123 refereed journal papers, 320 abstracts, 492 extension publications, and 4 book chapters. In 2005, Mike was named one of the 50 people that have made the greatest impact on the swine industry in the last 50 years by the National Hog Farmer Magazine.

Mike's wife, Lisa, also specializes in swine as a veterinarian in the Abilene Animal Hospital. Mike and Lisa have three children, Sage, Rogan, and Fiona.



Dave Nichols (dnichols@ksu.edu; 785-532-1239)

Teaching Coordinator

Dr. Dave Nichols was born in 1955, and raised on a commercial beef cattle, swine, and crops farm near Brookston, Indiana. He entered Purdue University in the Fall of 1973, majoring in Animal Science. Upon completion of his B.S. degree in December of 1976, he entered graduate school at Kansas State University, where he completed his M.S. in 1979, and his Ph.D. in 1981.

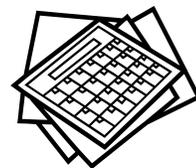
In October of 1981 Dave joined the KSU faculty as an extension livestock specialist. In 1983 he accepted a 80% teaching and 20% research appointment. In 1999 he became coordinator of teaching for the Department of Animal Sciences and Industry and currently holds that position with a 100% teaching appointment. In addition to being Teaching Coordinator he also serves as a Faculty Senator. In recent years he has also led student study abroad tours to Costa Rica.

Dr. Nichols advises approximately 100 students, teaches courses in live animal and carcass evaluation, introductory animal science, and livestock sales management. He serves as advisor for the Little American Royal Showmanship Contest, and has been highly involved in 4-H and youth activities. Dr. Nichols coached the KSU Livestock Judging Team from 1986 to 1988, winning, among others, the American Royal Contest. Dr. Nichols has judged numerous cattle shows in recent years.

He has judged cattle at Houston, Ft. Worth, San Antonio, Louisville, the American Royal and numerous state fairs. He recently was a guest speaker at the 33rd World Charolais Congress in Porto Alegre, Brazil.

In addition to his university and judging responsibilities, Dr. Nichols owns and operates A and D Ranch near Manhattan. He and his wife, Anita, have two children, Drew and Amy.

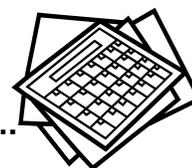
WHAT PRODUCERS SHOULD BE THINKING ABOUT...



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

BEEF -- Cowherd Tips by *Twig Marston, K-State Beef Extension Specialist, Cow/Calf*

- Manage calving pens and pastures to minimize human, cow and calf stress. Stay organized.
- An observation schedule should be implemented for calving first-calf heifers and cows. First-calf heifers should be checked every 2 to 3 hours.
- Sanitation is key to reduce and/or eliminate calf scours. An excellent calving pasture management plan by Dr. David Smith from the University of Nebraska - Lincoln, can be found at <http://beef.unl.edu/beefreports/symp-2003-19-XVIII.pdf>.
- Make sure every calf consumes adequate colostrum during the first 4-12 hours after birth.
- Keep accurate calving records, including cow identification (ID), calf ID, birth date, calving difficulty score and birth weight. Other traits to consider recording are teat and udder scores, calf vigor score, and other pertinent information. This information along with Angus sire information is vital for enrolling cattle into the AngusSourceSM program.
- Calving books are essential sources of information; make sure you have a backup copy.
- Body condition score (BCS) cows. Thin and young cows will need extra energy to maintain yearly calving interval.
- If cow diets are going to be shifted from low- (poor quality forage or dormant grass) to high-quality forage (lush green grass) programs, begin a grass tetany prevention program at least 3 weeks prior to the forage switch.
- When making genetic selections, use the most recent National Cattle Evaluation (NCE) and herd records judiciously.
- If new bulls are purchased, now is the time to start preparing them for their first breeding season. Bulls need to be properly vaccinated and conditioned to be athletic. Moderate body condition with abundant exercise is ideal.
- After calving and before breeding, vaccinate cows as recommended by your veterinarian.
- Plan to attend beef production meetings.



WHAT SWINE PRODUCERS SHOULD BE THINKING ABOUT

- Check Diet Particle Size – the target is 700 microns with an acceptable range of 650 to 750 microns and if outside that, evaluate maintenance needs of your roller mill or hammer mill to get within the acceptable range.

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.