

News from KSU Animal Sciences

May, 2008



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

- ↪ **Effects of Increasing Added Choice White Grease in Corn and Sorghum-Based Diets on Growth Performance and Fat Quality Characteristics of Finishing Pigs** - One hundred twenty crossbred barrows and gilts (TR4 × 1050) with an initial weight of 119.9 lb were used in an 83-d experiment to evaluate the effects of increasing added fat to corn or sorghum-based diets on growth performance and fat quality characteristics of finishing pigs. Treatments were arranged in a 2 × 2 × 3 factorial based on grain source (corn or sorghum), gender, and added fat (0, 2.5, or 5% choice white grease, CWG). At the end of the trial, jowl fat and backfat samples were collected. Pigs fed sorghum-based diets had increased ADG compared with pigs fed corn-based diets. Pigs fed increasing CWG had increased ADG. Pigs fed corn-based diets tended to have improved dressing percentage, 10th rib BF, and percentage lean when compared with pigs fed sorghum-based diets. Barrows tended to have greater dressing percentage and decreased percentage lean when compared to gilts. Pigs fed increasing CWG had increased 10th rib backfat, tended to have increased hot carcass weight, and tended to have decreased percentage lean. There was a fat level by grain source interaction for percent C 18:2 fatty acids and iodine value in jowl fat. The interaction was due to the greatest increase in IV and percentage C 18:2 fatty acids occurring when CWG was increased from 2.5 to 5% for corn-based diets, while the greatest increase was from 0 to 2.5% CWG for sorghum-based diets. Despite this interaction, adding CWG increased (linear, $P < 0.02$) percentage C 18:2 fatty acids and iodine value in jowl fat. Pigs fed corn-based diets had increased iodine values and percentage C 18:2 fatty acids in jowl fat and backfat compared with pigs fed sorghum-based diets. Increasing dietary CWG increased iodine value in jowl fat and backfat, increased percentage C 18:2 fatty acids in backfat, tended to increase percentage 18:2 fatty acids in jowl fat, and decreased percentage saturated fatty acids in jowl fat and backfat. In summary, substituting sorghum for corn in diets for finishing pigs can be an effective way to reduce iodine value without affecting growth. More information is available on this experiment in the KSU Swine Day Report at www.ksuswine.org. (This study conducted by *J.M. Benz, M.D. Tokach, S.S. Dritz, J.L. Nelssen, J.M. DeRouchey, and R.D. Goodband.*)
- ↪ **Application of the Progesterone (CIDR) Insert in Artificial Insemination Programs of Dairy Cattle** - Use of progesterone inserts (controlled interval drug release, CIDR) offers another option for synchronizing estrus and ovulation in replacement heifers and lactating dairy cows. Results indicate that heifers may be inseminated after detected estrus, at a fixed time (timed AI), or a combination of both. Conception rates exceed 50% in both scenarios. Practical applications of the CIDR in lactating cows have been used to resynchronize the return estrus of previously inseminated cows and as part of first-service AI-breeding protocols. Use for resynchronization has no drawbacks in previously inseminated cows, but may increase embryo survival during the first 30- to 60-days of pregnancy. No increase in the heat-detection rates of open cows is generally achieved, and no differences in return conception rates are observed between treated and control cows. First-service applications of the progesterone insert have resulted in some positive and some negative effects on timed AI (TAI) conception rates. More research is warranted to determine if an identifiable subpopulation of cows can benefit from exposure of the progesterone insert before first AI. More information is available on this experiment in the Dairy Day 2007 publication. For more information, contact Jeff Stevenson (785-532-1243; jstevens@ksu.edu).

↪ **Prepartum Supplementation Influences Response to Timed Artificial Insemination by Suckled Mature Beef Cows** – Cows were assigned randomly to be supplemented with whole raw soybeans, whole fuzzy cottonseed, or a 50/50 ground corn/soybean meal mixture. Supplements were hand fed for 45 days before the first projected calving date. Supplementation was continued until each cow calved; thereafter, all cows received the corn/soybean meal supplement. Ovulation was synchronized, and cows were inseminated artificially. Cows were subsequently exposed for natural service breeding for 50 more days. Conception response to timed AI and overall pregnancy were assessed.

The Bottom Line... Source of prepartum supplemental fat fed to mature beef cows can affect conception response to timed AI. View the complete research report online at <http://www.asi.ksu.edu/cattlemensday>. For more information, contact Twig Marston (785-532-5428; twig@ksu.edu) or KC Olson (785-532-1254; kcolson@ksu.edu).

↪ **Forage Intake by Pregnant and Lactating First-Calf Heifers** – Commercial Angus heifers were individually fed chopped, warm-season grass hay from 10 weeks prepartum to 10 weeks postpartum. Hay was fed to heifers free-choice; amounts of hay fed and refused were recorded daily. Treatments were based on pregnancy status. Six heifers began the study pregnant (average initial day of gestation = 213). After calving, they were milked by machine twice daily to approximate milk consumption by a nursing calf. The remaining five heifers served as non-pregnant, non-lactating controls.

The Bottom Line... Increase in dry matter intake characteristic of mature beef cows in early lactation may be absent in first-calf beef heifers. Absence of a vigorous intake response during the post-calving/pre-breeding period could be a causal factor in reproductive failure by first-calf heifers. View the complete research report online at <http://www.asi.ksu.edu/cattlemensday>. For more information, contact Twig Marston (785-532-5428; twig@ksu.edu) or KC Olson (785-532-1254; kcolson@ksu.edu).

↪ **Effect of Restricted Feed Intake on Finishing Pigs Weighing Between 150 and 250 lb Fed Twice or Six Times Daily** – Two 42-d trials and two 28-d trials were conducted to evaluate the effects of restricted feed intake and feeding frequency (2 or 6 times daily) on the performance of pigs weighing between 150 to 250 lb (initially 148 lb in Exp. 1; 155 lb in Exp. 2; 156 lb in Exp. 3; and 156 lb in Exp. 4). In all experiments, pigs were housed in 6 × 10 ft pens with half-solid concrete and half-slatted flooring and with one nipple waterer. Pigs were fed a corn-soybean meal-based diet formulated to 1.15% TID lysine and 1,491 kcal of ME/lb.

In Exp. 1 to 3, energy and lysine were supplied to pigs to target an average growth rate of 1.75 lb/d based on NRC (1998) values. In Exp. 4, the diet was supplied to pigs to target growth rates of 1.75 lb/d (low feed intake) or 2.1 lb/d (high feed intake) based on NRC (1998) values to determine if the amount of energy above maintenance and feeding frequency has an effect on performance. Pigs were fed by dropping similar daily amounts of feed, either 2 (0700 and 1400) or 6 times (3 meals within 2 h at AM and PM feedings) per day, by an Accu-Drop Feed Dispenser[®] on the solid concrete flooring.

In Exp. 1 and 2, increasing the feeding frequency of pigs fed a restricted diet from 2 to 6 times per day improved ADG and F/G. Increasing the feeding frequency increased the duration of time spent feeding and standing, and reduced lying time. In Exp. 3, a third treatment was included in addition to those used in Exp. 1 and 2 to determine whether the improvements in performance were due to decreased feed wastage. This treatment was designed to minimize feed wastage by dropping feed closer to the floor in pigs fed 2 times per day. Like Exp. 1 and 2, pigs fed 6 times per day had improved ADG and F/G compared to either treatment fed 2 times per day. There was no difference in performance between pigs fed 2 times per day when feed was dropped from the feed drop or by the modified method. In Exp. 4, increasing the feeding frequency from 2 to 6 feeding periods improved ADG and F/G for pigs fed a low level of feed intake and tended to increase ADG and improve F/G for pigs fed a high level of feed intake. In conclusion, these studies indicate that increasing the frequency of feeding from 2 to 6 times a day improves pig performance compared with feeding 2 times per day. More information is available on this experiment in the KSU Swine Day Report at www.ksuswine.org. (This study conducted by J.D. Schneider, M.D. Tokach, S.S. Dritz, R.D. Goodband, J.L. Nelssen, and J.M. DeRouchey.)

UPCOMING EVENTS...

- ↳ Make plans now to attend the **2008 Beef Empire Days** which will be held Wednesday, May 28 to Sunday, June 8, in Garden City. This 12 day Beef Empire Days celebration features industry events, including live and carcass cattle shows and competition. For full details and a schedule, please visit www.beefempiredays.com.
- ↳ The KSU Beef Cattle Institute will hold the **International Symposium on Beef Cattle Welfare** on May 28-30, 2008, in Forum Hall of the K-State Student Union in Manhattan, Kansas. The mission of this symposium is to understand the strides that have been made by the beef industry for the welfare of cattle and discuss new areas of opportunities for improvement. Make plans now to attend.
For a complete schedule of events and registration form, visit www.isbcw.beefcattleinstitute.org. For more information, contact Wrenn Pacheco at the Beef Cattle Institute (785-532-4844; wpacheco@vet.ksu.edu) or Chris Reinhardt (785-532-1672; cdr3@ksu.edu).
- ↳ A full day presentation on **Cattle Welfare Through Proper Cattle Handling** will be held on Wednesday, May 28, 2008, from 10:00 a.m. to 4:00 p.m. in conjunction with the International Symposium on Beef Cattle Welfare. This presentation will be held in Weber Arena on the KSU Campus and will highlight concepts that empower caregivers in the beef industry to create positive relationships with cattle. For complete details and registration information, visit www.isbcw.beefcattleinstitute.org and click on registration. If you have any questions, call the Beef Cattle Institute at 785-532-4844 or e-mail Wrenn Pacheco at wpacheco@vet.ksu.edu.
- ↳ The National Pork Producers Council (NPPC) will present the **20th annual World Pork Expo on June 5-7, 2008**, at the Iowa State Fairgrounds in Des Moines. As the largest pork-industry trade show and exhibition in the world, the expo draws more than 30,000 pork producers, exhibitors and visitors from across the country and around the globe. For more information, visit <http://www.worldpork.org>.
- ↳ The **KSU Youth Horse Judging Camp – Beginning Section** will be held Friday, June 6, 2008 in Weber Arena on the KSU Campus. This camp is designed for youth that have had very little experience judging horses and would like to learn more about note taking and oral reasons. Emphasis will be on the placings of classes commonly seen in Kansas judging contests. For a brochure or more information, contact Teresa Slough (785-532-1268; tslough@ksu.edu).
- ↳ The **KSU Youth Horse Judging Camp – Advanced Section** will be held June 9-10, 2008 in Weber Arena on the KSU Campus. This camp is designed for youth that have had some experience judging horses and would like to learn more about note taking and oral reasons. Emphasis will be on the placings and reasons of classes commonly seen in Kansas judging contests. For a brochure or more information, contact Teresa Slough (785-532-1268; tslough@ksu.edu).
- ↳ The **Champion Livestock Judging Camps** will be conducted throughout the month of June. Each camp will be limited to 25 students and will be accepted on a first come-first serve basis. The following dates are set for the 2008 camps: June 9-11; June 16-18; June 20-22; and June 25-27.
This three-day, intense judging camp is designed for 4-H and FFA members (ages 14-18) who are seriously interested in enhancing their livestock judging and oral communication skills. Prior livestock judging experience is necessary for these camps. Workouts will be conducted similar to those at a collegiate level. The camp will focus primarily on the proper format, terminology and presentation of oral reasons. Camp participants will be exposed to livestock evaluation skills and incorporating performance records in the decision making process.
The fee for camp is \$180 per person and is nonrefundable. The registration deadline is May 16. For more details, visit our website at www.asi.ksu.edu/livestockjudging. For more information, contact Scott Schaake (simmi@ksu.edu; 785-532-1242) or Megan McClure (mclclurem@ksu.edu; 785-532-2996).

- ↪ **Developing and Implementing Your Company's HACCP Plan** for meat, poultry, and food processors will be held June 11-13, 2008 in Weber Hall, Kansas State University, Manhattan. Registration for the 2.5 day International HACCP Alliance accredited workshop is online at <http://animalscience.unl.edu/haccp/>. The workshop fee is \$250, and meets USDA training requirements to become a HACCP trained individual. For more information, contact Dr. Liz Boyle at lboyle@ksu.edu.
- ↪ A **County Fair Livestock Judges Clinic** has been scheduled for Friday, June 13, 2008 at Weber Hall. This professional development opportunity is designed for livestock judges of county fairs to learn about Kansas county fair livestock shows, quality of work expectations as a livestock judge, and become up to date on current livestock industry show animal types. This clinic will include numerous hands-on sessions involving beef cattle, swine, sheep and meat goats to gain familiarity and confidence when evaluating different species of livestock at county fairs in Kansas.
Registration is \$15 per participant and is due by June 9. For more information, contact Joel DeRouchey (jderouch@ksu.edu; 785-532-2280).
- ↪ The **2008 Dr. Bob Hines' Kansas Swine Classic** is scheduled for July 11-12, 2008 at CiCo Park in Manhattan. This two-day event includes educational workshops, showmanship contest, and a prospect and market hog show. It is open to all Kansas youths ages 7 through 18 as of January 1, 2008. Outlined below is a brief description of this year's program.

Friday, July 11	12:00 p.m.	All hogs in place
	1:00 p.m.	<i>It's All About the Meat</i>
	2:00 p.m.	<i>Show Pig Health and Biosecurity</i>
	4:00 p.m.	Ice cream party by the show ring
	5:30 p.m.	Showmanship Contests
Saturday, July 12	8:30 a.m.	Prospect Hog Show followed by Barrow and Gilt Market Hog Show

Visit www.ksuswine.org for a complete brochure and registration form. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu) or Jim Nelssen (785-532-1251; nelssen@ksu.edu).
- ↪ Mark your calendar for the upcoming **K-State Beef Conference on August 7-8, 2008**. This conference is designed to provide take-home knowledge that will enhance the ability of cow/calf producers to improve profitability. Watch for more details at www.asi.ksu.edu/beefconference. For more information, contact Larry Hollis (lhollis@ksu.edu; 785-532-1246).

CALENDAR OF UPCOMING EVENTS

Date	Event	Location
May 28, 2008	Cattle Welfare Through Proper Cattle Handling	Manhattan
May 28-30, 2008	Symposium on Beef Cattle Welfare	Manhattan
May 28–June 8, 2008	Beef Empire Days	Garden City
June 5-7, 2008	World Pork Expo	Des Moines, IA
June 6, 2008	KSU Horse Judging Camp – Beginning Section	Manhattan
June 9-10, 2008	KSU Horse Judging Camp – Advanced Section	Manhattan
June 9-11, 2008	KSU Livestock Judging Camp	Manhattan
June 11-13, 2008	HACCP Training	Manhattan
June 13, 2008	County Fair Livestock Judges Clinic	Manhattan
June 16-18, 2008	KSU Livestock Judging Camp	Manhattan
June 20-22, 2008	KSU Livestock Judging Camp	Manhattan
June 25-27, 2008	KSU Livestock Judging Camp	Manhattan
July 11-12, 2008	Kansas Swine Classic	Manhattan
August 7-8, 2008	K-State Beef Conference	Manhattan

AS&I FACULTY SPOTLIGHT



Terry Houser (houser@ksu.edu; 785-532-1253)
Assistant Professor/Meats

Dr. Terry A. Houser was born in Cambridge, Nebraska in 1975. He is the youngest of seven children born to Clifford Houser Sr. of Cambridge, Nebraska and Verna Raye Horton of McCook, Nebraska. He attended the University of Nebraska-Lincoln from 1994-1998 for his B.S. degree and competed on both the Meats Judging Team and Meat Animal Evaluation Team while being very active in Alpha Gamma Rho Fraternity. In addition to campus activities, Terry completed two internships including one at Usinger's Famous Sausage in Milwaukee, Wisconsin and the other at Wimmer's Meat Products in West Point, Nebraska.

In 1999 Terry started his graduate program at Iowa State University in the area of Meat Science under the guidance of Dr. Joseph G. Sebranek and graduated with a M.S. in 2001 and a Ph.D. in 2004. His graduate research focused on irradiation, non-meat ingredient functionality, and needleless injection technologies for delivering vaccines to livestock. Upon completion of his Ph.D. he started his career as an Assistant Professor and Extension Meat Specialist at the University of Florida in Gainesville. In January 2007 he joined the Animal Science Faculty at Kansas State University with a 50% Research and 50% Teaching appointment in the area of Meat Science.



Teresa Slough (tslough@ksu.edu; 785-532-1268)
Assistant Professor/Equine Nutrition

A native of St. Francis, KS, Teresa Slough was raised on a farm and Hereford ranch. Dr. Slough began showing horses at the age of four.

Dr. Slough judged livestock at Butler County Community College. Then at KSU, she participated on both the livestock and horse judging teams. She graduated summa cum laude from KSU with a degree in animal science in 1999. As a MS student, she was an assistant coach for the KSU horse judging team and helped form the equestrian team.

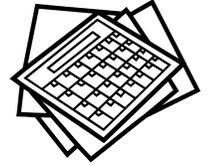
After completing a MS in equine nutrition, Teresa went to Colorado State for a PhD in reproductive physiology. There she coached the Arabian judging team to two national championships.

In 2004, Dr. Slough returned to K-State to accept a joint appointment with animal science (40%) and the equestrian team (60%). In November 2006, she started a new position as Assistant Professor in Equine Nutrition here at K-State. She now teaches the Advanced Training Class, 1/2 of Horse Science, Equine Nutrition and Equine Exercise Physiology. Her current appointment is 70% teaching and 30% research.

Teresa and her husband, Galen, reside east of Manhattan.

WHAT PRODUCERS SHOULD BE THINKING ABOUT...

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



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

Cowherd Nutrition

- Provide plenty of clean, fresh water.
- Provide free-choice mineral to correct any mineral deficiencies or imbalances.
- Monitor grazing conditions and rotate pastures if possible and/or practical.
- If ammoniated wheat straw is planned for winter needs, follow these rules:
 - ✓ Best time is immediately after harvest, prior to weather deterioration.
 - ✓ Ammoniation process is temperature sensitive, fastest during hot days.
 - ✓ Apply 3% Anhydrous Ammonia (60 pounds/ton of straw).
 - ✓ Do ***not*** ammoniate wheat hay or any other intermediate or high quality forage; production of imidazole can cause cattle hyperactivity and death.
 - ✓ Will double crude protein content, enhances intake, and be cost effective.
- Consider early weaning if drought conditions develop and persist.
- Consider creep feeding only if cost effective.

Herd Health

- Monitor and treat Pink Eye cases.
- Provide fly control. Consider all options, price and efficiency will dictate the best option(s) to use.
- Monitor and treat foot rot cases.
- Avoid handling and transporting cattle during the hottest part of the day-reduce heat stress.
- Vaccinate replacement heifers for Brucellosis if within proper age range (4 - 10 months).
- Continue anaplasmosis control program (consult local veterinarian).

Forage/Pasture Management

- Check and maintain summer water supplies.
- Place mineral feeders strategically to enhance grazing distribution.
- Check water gaps after possible washouts.
- Harvest hays in a timely manner, think quality and quantity.
- Harvest sudan and sudan hybrids for hay in the boot stage (normally three to four feet in height). It is a good idea to run a routine nitrate test on a field before harvesting hay.
- Plan hay storage placement wisely. Putting hay conveniently near feeding sites reduces labor, time demands, and equipment repair cost.

General Management

- Good fences and good brands make good neighbors.
- Check equipment (sprayers, dust bags, oilers, haying equipment) and repair or replace as needed. Have spare parts on hand, down time can make a big difference in hay quality.

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.