



# News from KSU Animal Sciences

## June, 2007

### WHAT'S NEW >>>>>>

- ↪ **CSREES and USDA's Animal and Plant Health Inspection Service (APHIS) have unveiled an Extension-National Animal Identification System (NAIS) Resource Center Web page**. This online center provides Extension educators a "one stop shop" for educational materials explaining USDA's NAIS outreach initiatives. Materials, which were based on feedback from extension educators across the country, include brief case studies, electronic presentations, state NAIS contacts, a graphics library, program updates, fact sheets and brochures. APHIS is also making available free copies of their new NAIS documentary video <<http://animalid.aphis.usda.gov/nais/newsroom/spotlight.shtml>>. For more information, visit the Resource Center at <http://animalid.aphis.usda.gov/nais/extension/>.
  
- ↪ **County Fair Beef Carcass Data Collection** - Several options are available for Beef Carcass Data Collection this year. Many counties have made arrangements and will use local experienced carcass data collectors. The KSU Carcass Data Service (contact Melissa Daniel, [midaniel@ksu.edu](mailto:midaniel@ksu.edu) 785/532-1528) can provide carcass data collection for a fee. Dr. David Schafer (retired Extension Specialist) has offered to continue some carcass data collection, dependant upon scheduling. If assistance in arranging for carcass data collection is still needed, John Unruh ([junruh@ksu.edu](mailto:junruh@ksu.edu) 785/532-1245) can be contacted. Arrangements should be made ASAP to assure carcass data collection.
  
- ↪ **Whole Genome Testing** - Use of DNA technology was one of the topics discussed at the 39<sup>th</sup> meeting of the Beef Improvement Federation held June 6-9 in Fort Collins, CO. According to Dr. Jerry Taylor with the University of Missouri, the currently available DNA tests for traits such as marbling or tenderness only look at a relatively small number of genes. In Angus cattle, at least 59 genes are believed to control marbling. He stated that using a test for only a few of these genes is like using an EPD with an accuracy of 0.05. Many of the economically important traits for beef cattle production are controlled by multiple genes. Taylor's research has been directed at a whole genome test, which would allow producers to predict EPDs for all traits--without having to take measurements or weights. It would also provide for parentage verification and traceability and a range of other applications. Cost of the test is currently at \$208 per sample, for research purposes. The costs are expected to drop in the future to make it more economically feasible for producers and breed associations to use. A potential downside of the technology is that each test is breed-specific. In other words, the test developed for Angus won't work for Salers or Herefords. Each breed will have to make some investment to develop their own, breed-specific test in the future. The technology is expected to be commercially available this fall and could accelerate the ability of researchers to cost-effectively unlock the genetic basis of dozens of traits, and allow the industry a greater breadth of understanding of the range of genes that affect specific traits. More information on whole genome testing and other topics presented at the meeting are available online at [www.bifconference.com](http://www.bifconference.com). (Sandy Johnson, [sandyj@ksu.edu](mailto:sandyj@ksu.edu))
  
- ↪ **Validation of Commercial DNA Tests for Beef Quality Traits** – A study was conducted to validate three commercially-available genetic tests (GeneSTAR Quality Grade™, GeneSTAR Tenderness™ and Igenity TenderGENE™ for beef quality traits. Validation was conducted by the U.S. National Beef Cattle Evaluation Consortium on 400 Charolais X Angus Crossbred cattle (GeneSTAR Quality Grade™), and more than 1,000 *Bos taurus* and *Bos indicus* cattle (GeneSTAR Tenderness™ and Igenity TenderGENE™ tests). The two tenderness panels of the two companies share two common  $\mu$ -calpain markers but somewhat different calpastatin markers. Traits analyzed were longissimus Warner-Bratzler shear force and subjectively recorded marbling score and USDA quality grade.  
*Bottom Line* ...Tenderness could be markedly improved by selecting for the favorable calpastatin and  $\mu$ -calpain genotypes included in the GeneSTAR Tenderness™ and Igenity TenderGENE™ marker panels. Using the GeneSTAR Quality Grade™ marker panel could result in an increased percentage of USDA Choice or Prime carcasses. For more information, contact Michael Dikeman (785-532-1225; [mdikeman@ksu.edu](mailto:mdikeman@ksu.edu)) or Twig Marston (785-532-5428; [twig@ksu.edu](mailto:twig@ksu.edu)).

☞ **Feeding Optaflexx to Implanted Heifers Has No Effect of Meat Quality** – Crossbred implanted heifers (n = 302) were fed diets based on steam-flaked corn and supplemented with either no Optaflexx (control) or 200 mg ractopamine-HCl daily (Optaflexx) for 28 days prior to slaughter. Live performance was measured and loin samples were obtained from three animals randomly selected from each pen. Warner-Bratzler shear force values, fatty acid profiles, weight loss during cooking, purge loss during retail display, and changes in meat color during retail display were measured.

*Bottom Line...* Optaflexx addition to the diets of finishing beef heifers improved gain efficiency during the 28-day addition period with no effect on carcass quality or meat characteristics. For more information, contact Jim Drouillard (785-532-1204; jdrouill@ksu.edu) or Chris Reinhardt (785-532-1672; cdr3@ksu.edu).

☞ **Effects of supplementing a high level of dietary vitamin A on marbling, USDA quality grade, and retail display life of PVC packaged beef from early- and traditional-weaned calves** - Japanese research with Wagyu and Japanese Black cattle has shown that diets with no supplemental vitamin A improves marbling with no detrimental effects on performance. Our objective was to evaluate the effects of typical U.S. feedlot diets containing either no supplemental vitamin A or a high level of vitamin A on performance, carcass traits, meat quality, and shelf-life of strip loin and chuck clod steaks from early- or traditional-weaned calves. Cattle were harvested in two groups when ultrasound fat thickness reached .40 inches. Steaks will be evaluated for tenderness and flavor, and liver and blood samples are being analyzed for vitamin A (retinol) content and fatty acid profile.

ADGs were similar for cattle on diets with no supplemental vitamin A and those on high vitamin A within weaning treatment. Cattle weaned at a traditional age had higher ADGs during the feedlot phase than those early weaned, but final weights were not different among all treatment combinations. Calves that were early weaned and fed high vitamin A were fatter, had smaller ribeyes, higher numerical yield grades, and lower marbling than early-weaned calves fed no supplemental vitamin A. However, differences between high vitamin A and no vitamin A for the traditional-weaned calves were minor, except for fat thickness, which tended to be higher for the high vitamin A calves. We speculate that high vitamin A partitions energy to subcutaneous fat rather than to marbling. Of the four treatment combinations, the early-weaned calves fed no supplemental vitamin A had a superior combination of yield grade and marbling.

Supplementing high levels of vitamin A for extended feeding periods may suppress marbling deposition, even as cattle deposit more backfat. On average, our early-weaned cattle were fed 60 days longer than traditional-weaned cattle. We speculate that feeding cattle that were weaned at a traditional age and finished for fewer days in a feedlot was not enough time to sufficiently deplete vitamin A stores to affect marbling accumulation. Preliminary results of the retail display study for strip loin steaks show that there were no adverse effects on display life in feeding a diet with no supplemental vitamin A. Chuck clod steaks became unacceptable to panelists after 4 days of display, but there were no adverse effects in not supplementing the diet with vitamin A.

*Triceps brachii* steaks showed significant discoloration by day 3 and there appears to be an advantage in discoloration scores of steaks from calves with no supplemental vitamin A. These results suggest that the combination of early weaning and not supplementing the feedlot diet with vitamin A results in comparable performance, improved marbling, improved yield grade, and equal retail shelf-life of strip loin and chuck clod steaks compared to early weaned calves supplemented with high vitamin A. The effects of not supplementing vitamin A for traditional weaned calves were more subtle. (This research conducted by Aaron M. Arnett, Melissa Daniel, Michael Dikeman, K. C. Olson, and John Jaeger)

Please contact Aaron Arnett or Melissa Daniel at (785)532-1269 or Dr. Michael Dikeman at (785)532-1225. You may also reach us by e-mail at [arnett@ksu.edu](mailto:arnett@ksu.edu) or [mjaniel@ksu.edu](mailto:mjaniel@ksu.edu) or [mdikeman@ksu.edu](mailto:mdikeman@ksu.edu).

☞ **Grain Processing Reduces E. coli O157 in Feedlot Cattle** – Forty feedlot heifers previously testing positive for *E. coli* O157 were utilized in this experiment. Heifers were assigned to one of four treatments consisting of either sorghum- or wheat-based diets processed by steam-flaking or dry-rolling. Fecal and rectal swab samples were collected for four weeks to monitor shedding of *E. coli* O157. Bacterial culture, isolation, and confirmation were performed on all samples. Fecal pH was also measured weekly.

*Bottom Line...* Grains processing methods, such as dry rolling, that increase the amount of starch delivered to the hindgut may be simple and useful strategy for reducing prevalence of *E. coli* O157 in cattle.. For more information, contact T. G. Nagaraja (785-532-1214; tnagaraj@vet.ksu.edu) or Larry Hollis (785-532-1246; lhollis@ksu.edu).

## UPCOMING EVENTS >>>>>>>>>

☞ The **2007 Dr. Bob Hines' Swine Classic** is scheduled for July 6-7 at CiCo Park in Manhattan, Kansas. This two-day event includes educational workshops, showmanship contest, and a prospect and market hog show. Last year this event was renamed the Dr. Bob Hines' Swine Classic in recognition of his dedication and service to the Kansas swine industry.

All hogs for the event are to be in place by 12:00 noon on Friday, July 6. The program includes a "Feed Ingredients and Feed Mixing Demonstration" at 1:00 p.m., followed by "Managing Show Gilts as Breeding Females." An ice cream party will be held at 4:00 p.m. Friday's program will conclude with the showmanship contests beginning at 5:30 p.m. On Saturday, July 7, the prospect hog show will start at 8:30 a.m. followed by the Barrow and Gilt Market Hog Show.

Registration is \$15/head and is due by June 29. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu) or Jim Nelssen (785-532-1251; nelssen@ksu.edu).

☞ The **K-State Beef Conference** will be held on August 9-10, 2007. This conference is designed to provide take-home knowledge that will enhance the ability of cow/calf producers to improve profitability. The conference will be held in Weber Hall on the K-State campus. Registration fee is \$150 per participant and is due by August 3. A registration form and details are available at [www.asi.ksu.edu/beefconference](http://www.asi.ksu.edu/beefconference).

The focus of the conference is "Adding Value to Calves" which will include presentations from several industry leaders sharing various options for doing just that and producers who participate in these value-added programs. The conference will also include sessions on animal handling and practical cow feeding. For more information, contact Larry Hollis (lhollis@ksu.edu; 785-532-1246) or Twig Marston (twig@ksu.edu; 785-532-5428).

☞ Make plans now to attend the **Flint Hills Beef Fest** which will be held August 17-19, 2007. Cattle Division Events include a Grass Futurity Contest, Stocker Cattle Show, Best of Grass and Show, Feedlot Contest and Carcass Show. Events will take place on the Lyon County Fairground in Emporia, Kansas. Other Beef Fest Activities include Cattle Contests, and Arena Events such as Ranch Rodeo, Team Roping, Ranch Horse Competition and more. For more details and a complete schedule of events, please visit <http://www.beeffest.com>.

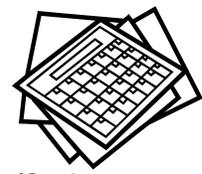
☞ **Dr. Clifford Spaeth**, Extension Sheep Specialist, has announced his retirement effective August 1, 2007. A retirement dinner is being planned for Friday, September 14 at Pottorf Hall in Manhattan. Mark the date on your calendar and watch for more details.

☞ The **2007 KSU Beef Stocker Conference** will be held on Thursday, September 27. This year's event will be held at the Clarion Hotel, Manhattan, Kansas. This conference will offer practical information and management tips to optimize your stocker operation. These tools will give you greater flexibility as market and environmental conditions continue to unfold. The conference will include presentations on the cattle market outlook, health protocols that add value, using byproduct feeds for receiving and growing diets and much more. The day will conclude with a tour of the KSU Beef Stocker Unit and evening barbecue. For more information, contact Dale Blasi (dblasi@ksu.edu; 785-532-5427).

### CALENDAR OF UPCOMING EVENTS

Date	Event	Location
June 18-20, 2007	English Equestrian Boot Camp	Manhattan
June 18-20, 2007	Champion Livestock Judging Camp	Manhattan
June 19, 2007	State 4-H Horse Judging Contest	Manhattan
June 22-23, 2007	Introduction to Collegiate Riding Camp	Manhattan
June 22-24, 2007	Champion Livestock Judging Camp	Manhattan
June 27-29, 2007	Champion Livestock Judging Camp	Manhattan
July 6-7, 2007	Kansas Swine Classic	Manhattan
August 9-10, 2007	K-State Beef Conference	Manhattan
August 17-19, 2007	Flint Hills Beef Fest	Emporia
September 27, 2007	KSU Beef Stocker Conference	Manhattan

## WHAT PRODUCERS SHOULD BE THINKING ABOUT IN AUGUST.....



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

August is when forages are maturing, weaning time is approaching, and weather dictates several key management decisions.

#### *Breeding Season*

- Look for unsound cows that need to be culled from the herd.
- Identify cull prospects. Cull cows that are not conceiving after three or four services by a fertile bull.
- Limit the breeding season. Remove bulls after 60 days with cows, 45 days with heifers.

These methods contribute to a more uniform calf crop, makes winter feed management easier, and increases the success rate of next year's breeding season.

#### *Cowherd Nutrition*

- Provide ample amounts of clean, fresh drinking water.
- Consider creep feeding if:
  - ◆ Drought conditions develop and persist.
  - ◆ Range conditions limit milk production.
  - ◆ Creep feed/grain prices are relatively low.
  - ◆ Value of gain allows for economic benefits.
- Tips for successful creep feeding:
  - ◆ Limiting intake will usually increase feed efficiency.
  - ◆ Use an ionophore or other feed additive to maximize efficiency.
  - ◆ Protein level should be equal to or greater than 16%.
  - ◆ High salt levels may help limit intake, but can be tough on feeders.
- Pre-purchase bulk rate winter supplementation needs prior to seasonal price increases.

#### *Herd Health*

- If pinkeye is likely to be a problem, consider the following preventive and therapeutic measures.

##### Preventive:

- ◆ Make sure the herd is receiving adequate vitamins and trace mineral in their diet.
- ◆ Consider using a medicated trace mineral package.
- ◆ Consider vaccination for pinkeye and IBR (consult your local veterinarian).
- ◆ Control face flies.
- ◆ Clip pastures with tall, coarse grasses that may irritate eyes.
- ◆ Provide ample shade.

##### Therapy:

- ◆ Administer an intramuscular injection of long-acting oxytetracycline when symptoms are first noticed.
- ◆ Shut out irritating sunlight by patching eyes, shade, etc.
- ◆ Control flies.
- ◆ Consult your veterinarian.

- Consider revaccinating for the respiratory diseases any animals that will be taken to livestock shows.
- Vaccinate suckling calves for IBR, BVD, PI3, BRSV, and possibly pasteurella at least 3 weeks prior to weaning.
- Revaccinate all calves for blackleg.
- Vaccinate replacement heifers for brucellosis (4 to 10 months of age).
- Monitor and treat footrot.

### *Forage/Pasture Management*

- ☑ Enhance grazing distribution with mineral mixture placement away from water sources.
- ☑ Observe pasture weed problems to aid in planning control methods needed next spring.
- ☑ Monitor grazing conditions and rotate pastures if possible and(or) practical.
- ☑ If pastures will run out in late summer, get ready to provide emergency feeds. Start supplemental feeding before pastures are gone to extend grazing.
- ☑ Harvest and store forages properly. Minimize waste by reducing spoilage.
- ☑ Sample harvested forages and have them analyzed for nitrate and nutrient composition.
- ☑ Plan winter nutritional program through pasture and forage management.
- ☑ For stocker cattle and replacement heifers, supplement maturing grasses with an acceptable degradable intake protein/ionophore(feed additive) type supplement.

### *General Management*

- ☑ Avoid unnecessary heat stress - Don't handle and/or truck cattle during the heat of the day.
- ☑ Repair, replace and improve facilities needed for fall processing.
- ☑ Order supplies, vaccines, tags, and other products needed at weaning time.
- ☑ Consider earlier than normal weaning if:
  - ◆ Drought conditions develop and persist.
  - ◆ Range conditions limit milk production.
  - ◆ Cows are losing body condition.
  - ◆ Facilities and management is available to handle light-weight calves.
    - ✓ *First calf heifers have the most to gain.*
    - ✓ *Resist the temptation to feed the cows without weaning; feeding early weaned calves is more efficient.*

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](mailto:lschrein@ksu.edu), or phone 785-532-1267.