K-STATE Kansas State University Research and Extension

Beef Tips

March 2009 | Department of Animal Sciences & Industry | www.asi.ksu.edu/beeftips

Upcoming Events

Cattlemen's Day
March 6, 2009
Manhattan, KS
www.asi.ksu.edu/

Roundup
April 16, 2009
Hays, KS
www.wkarc.org
785-625-3245

Beef Improvement Federation
April 30—May 3, 2009
Sacramento, CA
www.beefimprovement.org/

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Genetic defects manageable

Sandy Johnson, livestock specialist

Curly Calf syndrome or more correctly, Arthrogryposis Multiplex (**AM**) was identified as a lethal genetic defect present in the Angus breed in the past several months. The name comes from the bent and twisted spine of affected calves.

Whenever defects are found it takes some time to determine if the cause is genetic or environmental. After the report of a few calves with this condition in 2007, the Angus Association in cooperation with Dr. Jon Beever at the University of Illinois, requested association members to report any additional incidences of calves with similar problems. Late last summer information on 48 calves was made available to Dr. Beever and 47 of 48 calves shared a common ancestor in GAR Precision 1680. The defect was later traced to 1680's maternal grandsire, Rito 9J9 of B156 7T26, and all 48 affected calves had 9J9 on both sides of their pedigree. Since that time a genetic test has been developed to identify carriers of this gene.

The Arthrogryposis Multiplex (**AM**) trait is a simple recessive meaning that its inheritance is similar to the polled / horned gene or red / black coat color. Two copies of the red gene are needed to produce the red coat color. Animals with only one copy are carriers but black in color. Likewise with AM the trait must be inherited from both parents and only 25 percent of offspring from parents that were both carriers would express the lethal defect. However, 50 percent of offspring from this mating would be carriers like their parents. Herds that experienced AM calves were often using line breeding to Precision or his sons. Line breeding is used to concentrate genes in a population and bad traits are impacted as well as good.

Angus breeders and bull studs have been testing bulls and removing carriers from breeding populations as the first step to eliminating this defect. The DNA test costs $20 to $30 and allows the defect to be managed fairly easily compared to days of snorter dwarfism when sires had to be mated to multiple carrier females to be identified as a carrier. Today, producers can eliminate the chance of problems by using bulls tested as AM-Free. As long as the bulls used are not carriers, the trait should not show up in the calves even if carrier females are retained in the herd.

If you have an Angus bull or semen purchased prior to this year you should check for information on the bull's status from the semen provider, association or breeder. If a carrier animal is involved, the bull or semen might be used as a terminal cross on cows of a different breed with little chance of a problem. Purebred breeders should familiarize themselves with their breed associations plans for dealing with potential carriers.

There is currently interest in calves with hydrocephalus or water on the brain as another possible genetic defect. Some of these calves may have been confused with AM. Hydrocephalus can also be caused by disease.

A non-lethal genetic defect known as fawn calf syndrome is also in the news this year. This defect was identified in Australia and allegedly traces to US sires. A Feb. 13, 2009 notice at www.angus.org has more information on both of these conditions.

All breeds contain some genetic defects and it is relatively rare that they are observed, however with closer matings the likelihood

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Tally Time

Sandy Johnson, livestock specialist

Everyone uses a different process to make decisions. How do you make decisions on whether your cow herd is going in the right direction? Some look very closely at individual performance information to make culling and breeding decisions. This can be an important step in moving a herd in a desired direction. At some point however, performance of the entire herd should be evaluated. For example, what has happened to percent calf crop over time in a herd with fewer and fewer crossbred cows? Would you know if calf death loss was slowly trending up or down over time?

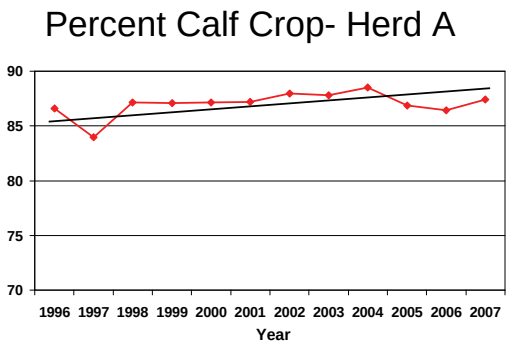
The following table represents the base inventory records that are needed to apply to any production or economic analysis of the cow herd. Often this information is available but it seems hard to find the time to tally it all up for study. Producers should be able to complete this table for their 2008 inventory. If you don't have last years numbers, now is a good time to start on 2009.

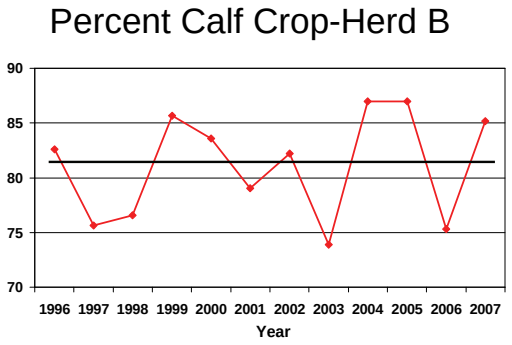
2008 production summary

1 – number of beef cows January 1, 2008	_____	hd
2 – number of replacement heifer calves January 1, 2008	_____	hd
3 – females exposed to bulls last year (2007; SPA* adjusted)	_____	hd
4 – Live calves born	_____	hd
5 – Live calves weaned	_____	hd
6 – Number of cows sold	_____	hd
7 – Number of cows died	_____	hd
8 – Number of calves died	_____	hd
Calculations -		
Percent calf crop (line 5/line 3) x 100	_____	%
Replacement rate (line 6 / line 1) x 100	_____	%
Cow death loss (line 7 / line 1) x 100	_____	%
Calf death loss (line 5 / line 4) x 100		%

*Standardized Performance Analysis – a uniform way to account for inventory changes; include cows that died after turnout but not planned culls, cows purchased pregnant or exposed but sold pregnant. See http://agrisk.tamu.edu/information.htm for more information on SPA

What trends are apparent in the following example herds? Is the information you have on your own herd in a format that allows you to see the big picture? Do you know your whole herd as well as you should?





Defects continued from page 1

increases. Other defects impacting the beef industry include tibial hemimelia (TH) in Shorthorn, pulmonary hypoplasia with anasarca (PHA) in Maine-Anjou and idiopathic epilepsy in Hereford.

For many years unless a producer had more than one of these calves, there was little thought that the true cause might be identified and that any action should be taken. Today the rapidly increasing knowledge of the bovine genome and DNA testing abilities developing at the same time will allow the industry to respond quickly to reported problems. For more information see http://animalscience.ucdavis.edu/animalbiotech/Outreach/Curly_Calf_test.pdf and the webcast on genetic defects at www.k-state.tv/kla/.

2009 Cattlemen's Day Research Summaries

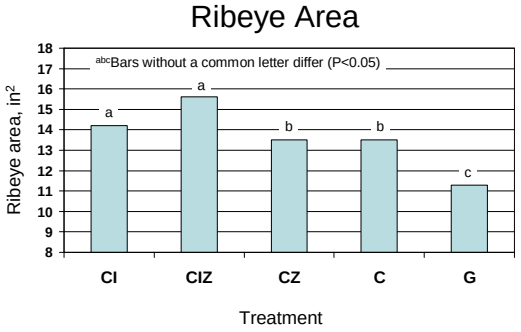
The following represent a sampling of the summaries from the 2009 Cattlemen's Day Report. The entire report is online at: http://www.asi.ksu.edu/DesktopDefault.aspx?tabid=1013

The Combination of Implanting with Revalor-200 and Feeding Zilmax Increases Ribeye Area of Fed Cows

S. Neill, J. A. Unruh, J. R. Jaeger, T. T. Marston, and J. J. Higgins

Objective: Determine effects of concentrate feeding, implanting with Revalor®-200, and feeding Zilmax® on performance and carcass characteristics of cull cows fed for 70 days.

Study description: Sixty cull cows were assigned to one of five treatments: (1) grass fed on pasture (**G**), (2) concentrate fed (**C**) a grain sorghum-sorghum silage diet, (3) concentrate fed and implanted (**CI**) with Revalor-200 (trenbolone acetate -estradiol), (4) concentrate fed and fed Zilmax (zilpaterol hydrochloride) for 30 days followed by a 3-day withdrawal (**CZ**), and (5) concentrate fed, implanted, and fed Zilmax (**CIZ**). Cattle were fed for 70 days before slaughter and carcass data collection.



The bottom line: Concentrate feeding can increase hot carcass weight, dressing percentage, and ribeye area of cull cows, and the combination of implanting Revalor-200 and feeding Zilmax to cows can further increase ribeye area

Backgrounding Health Associated with Area of the Truck Where Cattle Were Housed During Transport

B. J. White, D. Blasi, and M. Epp

Objective: Determine potential differences in backgrounding health associated with cattle location within a commercial transport vehicle.

Study description: Data were collected in conjunction with normal operations of the Kansas State University Beef Stocker Unit. Southeastern origin cattle were commingled in Tennessee and shipped to Manhattan, KS. Upon arrival, cattle from each load were unloaded by section of the transport carrier and placed in holding pens, maintaining segregation of animals by original truck compartment. Cattle were weighed and individually identified by holding pen, and the section of the transport vehicle was recorded for each animal. Cattle were backgrounded for 45 to 60 days, and all illness was recorded. An analysis was performed to determine the association between animal location on the truck and subsequent health outcomes.

Results: No significant associations were identified between compartment of the transport vehicle or placement on the top or bottom deck and the probability of initial treatment or dying. However, cattle in the middle section had a higher probability of being treated at least once compared with cattle in the most forward sections. Calves in the rear compartments had lower ADG from arrival to reweigh compared with cattle in the middle or forward areas.

The bottom line: This research illustrates some associations between backgrounding health and cattle location within a commercial transport vehicle. Our current project reveals that the environment within a commercial transport carrier varies by compartment, and further research should be done to determine causes for the health variation.

Extruded Complete Feed for Finishing Cattle

B. E. Depenbusch, R. Strabler, A. J. Crisler, and J. S. Drouillard

Objective: Evaluate animal performance, carcass characteristics, and meat attributes of yearling heifers fed extruded finishing diets.

Study description: Seventy-two yearling heifers (796 lb initial body weight) were used in a 143-day finishing study. Treatments were designed to test differences in grain processing (steam flaked vs. extruded) and level of alfalfa hay (2 vs. 6%). Extruded diets were processed to different degrees (moderate vs. high) depending on retention time, temperature, and pressure settings of the extruder. Steaks from each heifer were collected and used to evaluate tenderness, cooking loss, and retail display color.

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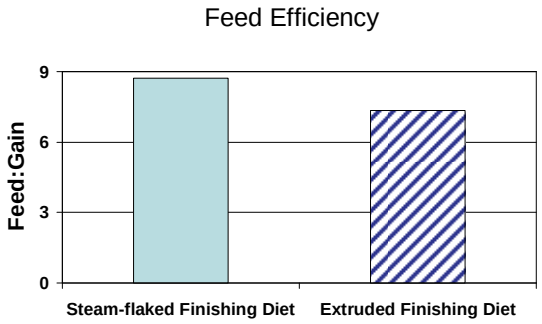
Cattlemen's Day Summaries continued

Extruded complete feed

The bottom line: Compared with a flaked-corn diet, the complete extruded feed improved feed efficiency by 15% with no negative effects on carcass quality.



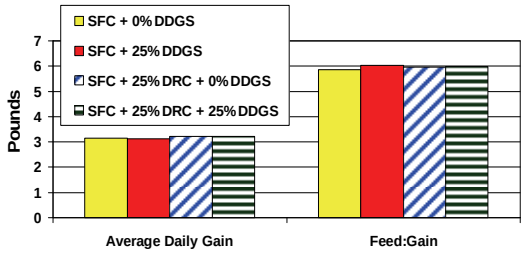
Feeding Steam-Flaked Diets With and Without Dry-Rolled Corn and Dried Distillers Grains Results in Similar Feedlot Performance

P. L. Black, G. L. Parsons, M. K. Shelor, K. K. Karges, M. L. Gibson, C. D. Reinhardt, and J. S. Drouillard

Objective: Determine the effects of replacing portions of steam-flaked corn in finishing diets with dry-rolled corn or dried distillers grains.

Study description: Crossbred yearling heifers (n = 689; 664 ± 143 lb) were fed flaked-corn finishing diets with 0 or 25% dried distillers grains and 0 or 25% dry-rolled corn. Heifers were fed free choice once daily in 28 dirt-surfaced pens with 23 to 25 heifers per pen. Cattle were blocked by weight into light and heavy weight groups and fed for 157 or 137 days, respectively. Feedlot performance and carcass characteristics were measured.

Average daily gain and feed conversion for heifers fed steam-flaked corn (SFC) finishing diets with 0 or 25% dried distillers grains (DDGS) and 0 or 25% dry-rolled corn (DRC).



The bottom line: Dried distillers grains or dry-rolled corn can replace a portion of steam-flaked corn without altering feedlot performance or carcass merit.

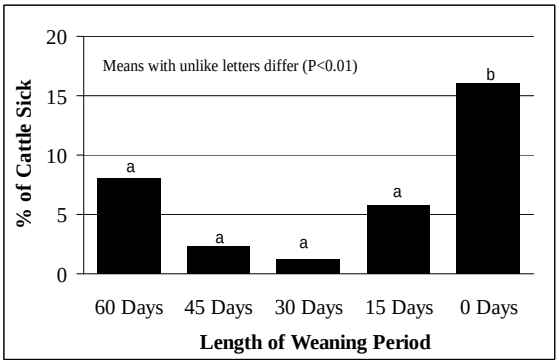
Length of the Weaning Period Affects Post-weaning Growth, Health, and Carcass Merit of Ranch-Direct Beef Calves Weaned During the Fall

J. W. Bolte, K. C. Olson, J. R. Jaeger, T. B. Schmidt, D. U. Thomson, B. J. White, R. L. Larson, N. A. Sproul, L. A. Pacheco, and M. D. Thomas

Objective: Test the validity of beef industry assumptions about the appropriate length of ranch-of-origin weaning periods for calves aged 160 to 220 days and weaned during the fall.

Study description: Angus crossbred calves (n = 433) were stratified by age and assigned randomly to one of five weaning periods that corresponded to the length of time between separation from the dam and shipping to an auction market: 60, 45, 30, 15, or 0 days. Calves were vaccinated against common diseases 14 days before maternal separation and again on the day of maternal separation. On a common shipping date (day 0; November 7), calves were transported 3 hours to a commercial auction market and held for 14 hours. Calves were then transported for less than 1 hour directly to a feedlot. All calves were fed the same diet ad libitum; they were also monitored 2 times daily for symptoms of respiratory disease. Carcass data, liver scores, and lung scores were collected.

Effect of length of the ranch-of-origin weaning period on incidence of undifferentiated fever in calves during the first 15 days after feedlot arrival



The bottom line: Under the conditions of our study, ranch-of-origin weaning periods between 15 and 60 days improved calf health during the receiving period compared with shipping calves immediately after maternal separation. Ranch-fresh calves that are properly vaccinated before maternal separation and exposure to market conditions may not require ranch-of-origin weaning periods longer than 2 weeks to achieve optimal health during the receiving period.

2009 Protocols for synchronization of estrus and ovulation

Research has provided many good options for synchronization of estrus and ovulation in the past few years. To simplify the process of protocol selection, a team of researchers, veterinarians, AI industry representatives and other industry partners have developed a short list of recommended protocols based on research and field data. This list is reviewed and updated each year based on the most recent data.

Updated protocol diagrams and a written description of the protocols from the Beef Reproduction Task Force can be found at http://westcentral.unl.edu/beefrepro/resources.html. These same protocols and diagrams are found in the major semen provider catalogs and used in the ISU Estrus Synchronization Planner software. This year a 5-day CIDR program for fixed-timed AI in cows has been added. This protocol requires two full doses of prostaglandin given 8 hours apart to be effective.

Audio, Powerpoint slides and a summary of presentations made at the December 2008 Robert E Taylor Memorial Symposium: Applied Reproductive Strategies in Beef Cattle can be found at http://www.appliedreprostrategies.com/. This meeting focused on synchronization strategies and reproductive management.

These materials represent the most current information for producers on these topics and show a 2009 date. For more information contact Sandy Johnson, sandyj@ksu.edu or 785-462-6281.