



Beef Tips

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Department of Animal Sciences & Industry

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Reaching for an Age Verified Market

Sandy Johnson, livestock specialist

Dale Blasi, stocker, forage and nutrition specialist

Upcoming Events

Cattlemen's Day

March 3, 2006
Weber Arena
785-532-1267

Roundup

April 6, 2006
785-625-3425

BIF Convention

April 18-21, 2006
Choctaw, MS
www.beefimprovement.org

Contributors

Dale Blasi

Stocker, Forages Nutrition & Mgt.
785-532-5427
dblasi@oznet.ksu.edu

Joel DeRouchey

Livestock Production
785-532-2280
jderouch@oznet.ksu.edu

Ron Hale

Livestock Production
620-275-9164
rhale@oznet.ksu.edu

Larry Hollis

Extension Beef Veterinarian
785-532-1246
lhollis@oznet.ksu.edu

Sandy Johnson, Editor

Livestock Production
785-462-6281
sandyj@oznet.ksu.edu

Chris Reinhardt

Extension Feedlot Specialist
785-532-1672
cdr3@ksu.edu

Twig Marston

Cow-Calf Management
785-532-5428
tmarston@oznet.ksu.edu

Until the New York State veal debacle, the Japanese had reopened the market to beef from cattle less than 21 months of age. The industry is hopeful that the necessary assurances can be made to encourage the rapid reopening of that market. Since providing age verification does require some advance planning, this is a prime time to discuss what is needed.

The first thing that producers need to understand about qualifying calves for export to Japan is that except for a very few large operations, they will need to work with a company that already has an approved program in place. USDA uses a Quality System Assessment Program (QSA) to provide an auditable trail that documents the requirements for a specific export market, such as the age requirement for Japan.

The process of establishing a QSA requires several months of planning and development and thousands of dollars. The owner of the QSA can expect to be audited by USDA two times per year. The types of companies that currently have USDA approved QSAs are packers, feedlots and independent companies. For a current listing see <http://www.ams.usda.gov/lsg/arc/qsap.htm>. Requirements of each QSA are different. If a producer supplies cattle to more than one QSA (i.e. sells to two packers), separate records would be needed for each.

Process verified programs (PVP) that include age as a claim can also be used to meet requirements for export markets. Process verified programs were initially developed to substantiate more extensive product claims such as entire management systems or health programs. Not all PVPs include age as a part of the program. A listing of currently approved PVP is at: <http://processverified.usda.gov/>.

Producers that want to market their calves through an auction market should look for an auction that has its own QSA or independent companies that provide QSAs or PVPs and

include program compliant ear tags. These are one time use, tamper-evident tags which contain a non-repeatable, unique number. The tag must be unique and specific to the program. It may be an EID, RFID or a visual tag. As with other value added marketing efforts, sufficient age verified calves would need to be present at a given auction to draw competitive buyers.

Some common generalities can be made about record keeping for age verification, regardless of the specific QSA or PVP program. Where individual birth dates are not recorded, documenting the beginning and end of the calving season is sufficient. In this case the entire group of calves would be aged based on the oldest calf in the group. Additional documentation is needed to support your claim of age on the calves such as bull turn out date, AI records, or vaccination records.

A written management plan that describes your standard operating procedures is also needed. This would support the timing of the calving season, when calves are typically marketed, and number of calves available for sale. Who records the calving information and where the records are kept are examples of other types of information that must be documented in the process. Again, each system is slightly different so you must be trained and approved in a given system before expecting to market any calves as age verified.

Producers should expect to spend some time being "trained" for the requirements of which ever program they choose. The procedures are not that difficult but it will be very important to follow the details closely. The owner of a QSA will need to audit 10% (or other specified number) of its suppliers each year and USDA's twice yearly audits could go back to cow/calf producers.

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2006 Cattlemen's Day Research Summaries

The following represent a sampling of the summaries from the 2006 Cattlemen's Day Report. Full length articles can be obtained online at www.oznet.ksu.edu/library/lvstk2/srp959.pdf or from your local county extension office.

AN INVESTIGATION INTO THE MECHANISMS OF ACTION OF REVALOR-S AND OPTAFLEXX IN GROWING STEERS

D. K. Walker, E. C. Titgemeyer, J. J. Higgins, and B. J. Johnson

An experiment was conducted to evaluate the interaction between steroidal implantation and feeding ractopamine on nitrogen retention, blood metabolites, and messenger RNA (mRNA) expression. Six Holstein steers (initially weighing 509 lb) were implanted or not with Revalor-S (120 mg trenbolone acetate plus 24 mg estradiol-17 β), and all were fed no ractopamine for the initial 28 days and then 2 grams per steer daily of Optaflexx (200 mg/day ractopamine-HCl) on days 29 through 56. Implantation increased nitrogen retention. Optaflexx increased nitrogen retention in non-implanted steers, but did not significantly increase retained nitrogen in implanted steers. Implantation increased serum insulin-like growth factor (IGF)-I concentration. Optaflexx, however, numerically decreased serum IGF-I concentrations. Implantation numerically increased IGF-I mRNA in the longissimus muscle, but expression of IGF-I mRNA was significantly decreased when Optaflexx was fed. Both growth promotants increased nitrogen retention in steers, but, despite perceived differences in their mode of action, the combination yielded a less than additive response for nitrogen retention.

ACCELERATED AND "NATURAL" PRODUCTION-SYSTEM EFFECTS ON PERFORMANCE AND CARCASS TRAITS

L. Veloso, J. A. Unruh, and E. Loe

Sixteen crossbred steers were used to compare performance and carcass characteristics of animals from accelerated and "natural" cattle production systems. Steers in the accelerated

group (8 head) were implanted with Component TE-S (120 mg of trenbolone acetate, 24 mg estradiol), and received 200 mg/steer daily of ractopamine-HCl (Optaflexx) during the last 33 days of feeding. Tylan and Rumensin were also fed to the accelerated group. "Natural" steers were not implanted and were not given feed additives. Steers in the accelerated group had improved gain; heavier final weights; heavier carcasses; larger ribeye areas; and less kidney, pelvic, and heart fat. "Natural" cattle had better quality grades, but would require a \$3/cwt carcass premium to offset the performance advantages of accelerated cattle.

COMPARISON OF CORN AND GRAIN SORGHUM DRIED DISTILLERS GRAINS AS PROTEIN SUPPLEMENTS FOR GROWING BEEF HEIFERS

K. W. Harborth, T. T. Marston, and D. A. Llewellyn

An experiment was conducted to determine if corn and grain sorghum dried distillers grains could be effective protein supplements for growing beef replacement heifers. Crossbred heifers (n=77) were individually fed 6 lb/heifer daily (dry matter basis) of supplements containing 20% crude protein. The three supplements compared were: 1) 50% cracked corn, 25% soybean meal, and 25% ground grain sorghum; 2) 50% cracked corn and 50% corn distillers grains with solubles; and 3) 50% cracked corn, 31% sorghum distillers grains with solubles, and 19% ground grain sorghum. Heifers grazed a common native-grass pasture and had free-choice access to smooth brome hay in round bale feeders. During the last week of the trial, heifers (n=4) from each supplement were used to determine diet digestibility. Although there were no differences in weight gain or total diet digestibility, dry matter intake as a percentage of body weight was less for heifers receiving supplements containing dried distillers grains from either corn or grain sorghum. Our data indicate that producers can expect similar growth performance, regardless of the grain source of dried distillers grains used to formulate a 20% crude protein supplement fed at about 1% of body weight daily.

VARIATION IN PERFORMANCE OF ELECTRONIC CATTLE EAR TAGS AND READERS

A. M. Bryant, D. A. Blasi, B. B. Barnhardt, M. P. Epp, and S. J. Glaenger

This study was conducted to evaluate the performance of ISO 11785 radio frequency identification (RFID) cattle ear tags and readers under ideal laboratory conditions. Tag and reader manufacturer identities are masked to prevent unintentional conclusions being drawn about any particular tag or reader at this stage of the U.S. National Animal Identification System (US-NAIS) proposed plan. Eight commercially available tag designs were evaluated, and included the half-duplex and full-duplex air interface technologies. Performance parameters of interest for tags were tensile strength, tampering evidence characteristics, as well as the average reading range. Three fixed-antenna stationary readers were used to determine the variability between reading ranges of each reader. Tensile strength parameters differed among tag designs. Only one tag design did not display tamper-evident characteristics. Average reading ranges differed among all eight tag designs, and there were significant differences in performance ranges among the three readers. Performance variation in tags and readers exists due to differences in material makeup (die and copper) and design characteristics. The results of this study support the need for minimum performance standards for ISO 11785 RFID technology as it applies to the US-NAIS.

A NOVEL METHOD TO DRY AGE BEEF BY USING VACUUM PACKAGING

M. L. Ahnström, M. Seyfert, M. C. Hunt, and D. E. Johnson

The traditional dry-aging method for beef was compared with a novel technique of dry aging in a highly moisture-permeable vacuum bag. Paired beef strip loins were cut into four sections and were dry aged traditionally (unpacked) or packaged in the novel bag for 14 or 21 days. Cooking loss, tenderness, juiciness, and all flavor attributes were similar for the aging methods. Beef dry aged in the bag had less weight loss during aging, less trim loss after 21 days, and lower yeast counts

after either aging time, compared with beef dry aged unpackaged. This novel method of dry aging beef in a vacuum bag can increase yields, decrease microbial contamination, and provide processors greater flexibility of facility use, all of which would positively impact processors' profits.

COMPARISON OF DECTOMAX AND VALBAZEN ON BEEF CATTLE CARCASS TRAITS

J. A. Christopher, T. T. Marston, J. R. Brethour, and G. L. Stokka

The objective of this trial was to determine if types of dewormers affected carcass characteristics. Crossbred steers (n=428) were stratified by weight and ultrasound marbling score and administered either Dectomax (subcutaneous injection) or Valbazen (oral) dewormer. Fecal egg counts indicated that both dewormers cleared internal parasites from the cattle. Carcass data indicated that Dectomax increased fat deposition as measured by 12th rib back fat; kidney, pelvic, and heart fat; and marbling score, when compared with Valbazen. Deworming products may affect carcass traits that are used to value cattle.

COLOR OF COOKED GROUND BEEF PATTIES IS AFFECTED BY COOKING RATE AND POST-COOKING HOLDING TIME

S. M. Ryan, M. Seyfert, M. C. Hunt, and R. A. Mancini

Two experiments investigated the effects of cooking rate and post-cooking holding time on the internal cooked color of ground beef patties. In Experiment 1, patties were cooked rapidly (1.8°F/second) or slowly (0.4°F/second). At temperatures below 180°F, rapidly cooked patties were redder and appeared less well done than those cooked slowly. All slowly cooked patties appeared well done, even at unsafe final internal temperatures. In Experiment 2, patties were cooked rapidly and held for 1, 3, 6, or 12 minutes after cooking. Increasing the post-cooking holding time to 6 minutes after rapid cooking decreased pinkness and maximized

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Is this record keeping worth the effort? Initial reports of premiums paid at harvest for age verified cattle were in the range of \$25-\$35 per head. Demand for certain variety meats such as tongue was greatly reduced when export markets were cut off in December 2003. Since then some variety meats have just gone into rendering. An estimated 50% of US beef tongues harvested went to the Japanese market in 2003 where the retail value of tongue is considerably greater than in the US. However, in its short time open, the market had yet to establish how any premiums may be shared along the production chain.

While information concerning the Japanese market has received most press, opportunities exist for other export and domestic markets that require a QSA or PVP. Retailers have indicated they want source verification although as of yet they have not backed that up with a strong market signal. Cow/calf producers should explore options to capture additional value associated with age and source and stay up to date with these evolving market opportunities.

Born on Date

While some producers that strive for age verification individually tag calves and record a birth date for each, a majority of producers have a less defined calving season and do not routinely tag calves. For those producers that see the value of age verification but want a simpler system consider the following.

Assume the first calf born for the 2006 spring calf crop was observed by a producer on March 5th. The producer will have extra help available on the weekend of April 8th when he expects at least 50% of his calves to be born. At that point all calves will be gathered and receive the same color of dangle ear tag. The date of the first calf born is clearly noted on a calendar and the date the calves received their colored tag. At branding time and/or when it is time to move to summer grass all remaining calves will receive a tag of a different color from the first group. This creates two age groups of calves to be marketed. The same principle could be applied more frequently for larger groups of calves. If calves are to be marketed through a sale barn, each will need a program compliant tag.

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well-done appearance. This allowed ground beef patties to be cooked to a lower temperature, likely preserving juiciness and flavor. Employing either a slow cooking rate or rapid cooking with a post-cooking holding time will foster a well-done appearance. Internal cooked color is not an adequate indicator of ground beef doneness. Only strict temperature control and monitoring can ensure product safety.

Timing of Insemination in a CO-Synch + CIDR Protocol

The recommended interval for fixed-time insemination in a CO-Synch + CIDR protocol (shown below) for cows has been 60 to 66 hours after the prostaglandin injection. Depending on the day length and temperature at the time of year you are breeding, this interval can create some logistical challenges. In 2005, four intervals from prostaglandin injection to fixed-time insemination were tested in 605 mature beef cows at three locations. Intervals tested were 48, 56, 64 or 72 hours. Pregnancy rate to fixed-time AI produced a quadratic curve that peaked between 56 and 64 hours. Pregnancy rates were 43 (58/136), 62 (98/157), 54 (92/170) and 51 (73/142) percent for 48, 56, 64 and 72 hours, respectively. This broader window of acceptable insemination times should provide producers more flexibility in scheduling activities. For a diagram of other recommended protocols see: www.oznet.ksu.edu/nwao/livestock.htm or contact Sandy Johnson at sandyj@ksu.edu or 785-462-6281.

CO-Synch + CIDR®

Perform TAI at 60 ± 6 hr after PG with GnRH at TAI.

