

Changing Market Dynamics and Value-Added Premiums in Southeastern Feeder Cattle Markets

(K. H. Burdine et al., University of Kentucky, *The Professional Animal Scientist* 30 (2014): 354-361)

What's Inside

Page	Topic
2	• Calm Temperament Improves Reproductive Performance of Beef Cows
3	• Effect of Method and Timing of Castration on Newly-Arrived Stocker Cattle
	• Growth, Reproductive Development and Estrous Behavior of Beef Heifers Treated With Growth Promotants
4	• Assessment of the Effect of Castration Upon Arrival on Long-Term Growth Performance of Stocker Cattle

The southeast region from Kentucky and Virginia south to Florida is home to more than 5 million beef cows, representing a significant source of farm income. Because very little feedlot capacity exists in the region, feeder cattle sales represent the majority of beef cattle receipts. This work examined numerous factors that affect feeder cattle prices including the effect of changes in corn price, the dynamics of body weight uncertainty in video auctions and price premiums associated with age and source verification and cattle selling certified natural.

Sale data from Internet sales and preconditioned feeder cattle sales were made available by a large cattle marketing firm in the region from 2008 to 2011. A hedonic model was used to examine the effect of cattle characteristics and market factors on the selling price of feeder cattle.

- Evidence was found that corn price negatively affected feeder cattle prices, but the magnitude was found to be smaller than in previous research.
- Premiums for age and source verification were found to be moderate at \$15.00 per animal, which was largely consistent with estimates from other regions of the United States.
- Premiums for cattle selling certified natural were estimated to be around \$17.00 per animal.

Finally, in contrast to previous research, results suggest that market incentives with respect to existing price–body weight relationships have changed such that incentives to underestimate body weight in video auctions may not have existed during this time period.

Using Tall Fescue in a Complementary Grazing Program for Spring-Calving Beef Cows in Southern Arkansas

(Beck et al., *The Professional Animal Scientist* 30 (2014): 423-431)

Over three years, spring-calving beef cows (n = 108, year 1; n = 72, year 2 and 3; initial fall body weight = 1,058 pounds, body condition score = 5.5; age = 6 years) were allocated by parity, breed composition and body weight to 10.8 acres (n = 6) of warm-

season pastures and limit grazed 5.4 acres of tall fescue during the winter and spring to determine the effect of endophyte toxicity or clover additions on cow performance (body weight, body condition score and reproductive rates) and calf growth.

*Arkansas Is
Our Campus*

Visit our web site at:
<http://www.uaex.edu>

Limit-grazed pastures were nontoxic endophyte-infected tall fescue and toxic endophyte-infected tall fescue or toxic endophyte-infected tall fescue established with white, red and crimson clovers.

- Calving body condition scores tended to be less for nontoxic endophyte-infected tall fescue than for toxic endophyte-infected tall fescue and toxic endophyte-infected tall fescue established with white, red and crimson clovers but was greater for nontoxic endophyte-infected tall fescue than for toxic endophyte-infected tall fescue established with white, red and crimson clovers in April, before breeding.
- At weaning, body condition scores of nontoxic endophyte-infected tall fescue was less than toxic endophyte-infected tall fescue or toxic endophyte-infected tall fescue established with white, red and crimson clovers.
- Pregnancy percentage was greater for nontoxic endophyte-infected tall fescue (80%) than toxic

endophyte-infected tall fescue (70%) and toxic endophyte-infected tall fescue established with white, red and crimson clovers (54%) and was greater for toxic endophyte-infected tall fescue than toxic endophyte-infected tall fescue established with white, red and crimson clovers.

- Calf body weight was unaffected by treatment, but weaning body weight per cow exposed to a bull was greater for nontoxic endophyte-infected tall fescue than toxic endophyte-infected tall fescue and toxic endophyte-infected tall fescue established with white, red and crimson clovers.

This experiment indicates that improvements in pregnancy percentages led to increased calf body weight at weaning per cow exposed to a bull, an important profitability indicator. Pastures with toxic endophyte-infected tall fescue established with white, red and crimson clovers did not improve cow and calf performance or pregnancy percentages compared with toxic endophyte-infected tall fescue.

Calm Temperament Improves Reproductive Performance of Beef Cows

(R. Kasimanickam et al., Washington State University, University of Idaho and Virginia Polytechnic Institute and State University, *Reproduction in Domestic Animals* 49, (2014): 1063-1067)

Profitability of a beef operation is determined by the proportion of cows attaining pregnancy early in the breeding season and those that are pregnant at the end of breeding season. Many factors, including temperament, contribute to those reproductive parameters.

The objective of this study was to evaluate effects of temperament on reproductive performance of beef cows. In Experiment 1, Angus and Angus-cross beef cows (n = 1,546) from eight locations were assigned a body condition score and chute exit and gait score (1 = slow exit, walk; calm temperament; 2 = jump, trot or run; excitable temperament). Cows were grouped with bulls (1:25 to 1:30; with satisfactory breeding potential and free of venereal disease) for an 85-day breeding season. Pregnancy status and stage of gestation were determined (transrectal palpation) 35 days after the end of the breeding season.

- Controlling for body condition score and handling facility and handling facility by temperament score interaction, breeding season pregnancy rate was lower in excited versus calm cows (88.6% vs 94.1%).

- Cows with an excitable temperament took 24 more days to become pregnant compared to calm cows (median days to pregnancy, 35 vs 59 days).

In Experiment 2, Angus and Angus-cross beef cows (n = 1,407) from eight locations were assigned scores for body condition and chute exit and gait (as described in Experiment 1) and assigned to bulls (breeding sound and free of venereal disease; 1:25 to 1:30) for 85 days. Pregnancy status was determined by transrectal palpation at 2 and 6 months after the onset of the breeding season.

- Controlling for body condition score, pregnancy loss was higher in excited versus calm cows (5.5% vs 3.2%).

In conclusion, beef cows with an excitable temperament had significantly lower reproductive performance than calmer cows. The modified two-point chute exit–gait scoring method was repeatable and identified cattle with an excitable temperament.

Effect of Method and Timing of Castration on Newly-Arrived Stocker Cattle

(M. D. Ratcliff et al., University of Arkansas, *The Professional Animal Scientist* 30 (2014): 457-465)

To determine the effects of castration method and timing on performance and morbidity of newly arrived beef stocker cattle, 271 crossbred calves (184 bulls, 87 steers; 643 pounds) were purchased at livestock markets in three groups. Upon arrival, calves were weighed and, within arrival group, were assigned randomly to one of eight pens. Within pens, calves were assigned to one of five treatment groups consisting of (1) calves that arrived as steers; calves that arrived as bulls and were castrated surgically on (2) day 0 or (3) 14; and calves that arrived as bulls and were castrated utilizing a bander on (4) day 0 or (5) 14. The following day, calves were processed and designated bull calves were castrated. On day 14, remaining bull calves were castrated.

- Calves surgically castrated on day 0 had the greatest average dairy gain, with those surgically castrated on day 14 and band-castrated at day 0

gained the least for the 50-, 53-, or 43-day trial (trials 1, 2 and 3, respectively; method × castration day interaction).

- Steers had greater average daily gain over the course of the study compared with calves that arrived as bulls.
- No differences in the percentage of bulls treated once or thrice with antibiotic were observed; however, a tendency for fewer bulls castrated on day 14 versus 0 to be treated twice was noted.
- Fewer steers were treated with antibiotics than bulls.

This study indicated that method and timing of castration affected growth performance, and if calves were castrated before arrival, average daily gain was improved and morbidity reduced.

Growth, Reproductive Development and Estrous Behavior of Beef Heifers Treated With Growth Promotants

(T. L. Devine et al., University of Arkansas, *The Professional Animal Scientist* 31 (2015): 114-119)

Charolais × Balancer heifers (n = 65; body weight = 395 pounds; 255 days of age) were used to determine the influence of growth-promoting implants on growth, reproductive development, estrous behavior and pregnancy rate. Heifers were assigned to one of four implant treatment groups: (1) control, no implant (n = 16); (2) trenbolone acetate (200 mg of trenbolone acetate; n = 15); (3) trenbolone acetate plus estradiol (40 mg of trenbolone acetate and 8 mg of E2; n = 17); or (4) zeranol (36 mg of zeranol; n = 17). Reproductive-tract scores were determined via ultrasonography on day 106 and 195 (day 0 = implant treatment). Estrous behavior was monitored by radiotelemetry.

- Average daily gain was greater for trenbolone acetate plus estradiol heifers compared with other treatment groups.
- A lower percentage (18%) of heifers treated with zeranol were classified with cyclic reproductive-

tract scores on day 106 compared with control (53%) and trenbolone acetate heifers (67%); heifers treated with trenbolone acetate plus estradiol (35%) were similar to all treatments.

- Heifers treated with trenbolone acetate had increased mounts received (60.1 mounts) during estrus compared with all other treatments (27.0 mounts).
- Overall pregnancy rate did not differ among treatments (72%).

Implanting with trenbolone acetate plus estradiol after weaning resulted in heavier heifers at breeding, and reproductive development was delayed in zeranol heifers. Implant strategies after weaning may alter heifer growth and development on forage systems, but overall fertility was not affected in this experiment.

Assessment of the Effect of Castration Upon Arrival on Long-Term Growth Performance of Stocker Cattle

(M.D. Ratcliff et al., University of Arkansas, *The Professional Animal Scientist* 30 (2014): 466-475)

Existing records were used to quantify the effect of castration and dehorning of calves upon arrival at a stocker unit on long-term growth performance and morbidity. Male calves (n = 1,105; body weight = 410 pounds) received over three years were used to assess the effects of castration and dehorning on receiving health and average daily gain, as well as subsequent grazing performance. Data were compiled from nine studies in which the protocols used were similar. All bulls (n = 672) were castrated upon arrival, and their average daily gain and morbidity over the course of the receiving (22–69 day) and grazing (44–217 day) phases were compared with calves received as steers (n = 433).

- During the receiving phase, bulls gained 0.26 pound per day less than steers, and polled calves gained 0.20 pound per day more than dehorned calves.

- During the grazing phase, no differences in average daily gain were noted between castrated bulls and steers or polled and dehorned calves.
- For the combined receiving and grazing phases, steers tended to gain body weight faster (1.48 pounds per day) than castrated bulls (1.37 pounds per day) and polled calves tended to have greater average daily gain (1.43 pounds per day) than dehorned calves (1.35 pounds per day).

This study suggests that purchasing bulls over steers, or horned calves over polled calves due to lower initial costs, would have a negative effect on receiving average daily gain and overall average daily gain but would not affect performance during the grazing phase.



Tom R. Troxel
Professor and Associate Department
Head - Animal Science