BEEF CATTLE RESEARCH UPDATE

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Effect of Disposition on Feedlot Gain and Quality Grade

The disposition or temperament of cattle has long been considered by producers as a "convenience" trait which impacts the handling of cattle and the safety of workers as well as the cattle. Recent Iowa research[1] looked at the effect of calf disposition on the performance, carcass quality grade, and economic implications of 13,315 beef calves fed at eight Iowa feedlots in 2000-2004. A disposition score (Beef Improvement Federation Six Point Scoring System: 1 = very docile and 6 = very aggressive) was assigned at on test weighing, re-implant time, and pre-harvest. These scores were used to calculate a mean disposition score for each calf. For their analysis, the Six Point System was condensed to three classifications: 1 and 2 = docile (9,642 hd), 3 and 4 = restless (2,915 hd), and 5 and 6 = aggressive (758 hd).

Feedlot daily gain was reduced by 8.2% (2.92 vs 3.17 lb/day) for aggressive calves compared to docile calves. Gains of calves classified as restless were intermediate between aggressive calves and docile calves (3.11 lb/day). In addition, mortality rate nearly doubled in aggressive calves (1.91 vs 1.09%). Only 58.25% of the aggressive calves graded Choice or Prime versus 74.14% of the docile calves. Furthermore, the acceptance rate for black-hided Angus-type calves eligible for the *Certified Angus Beef* ® Program was reduced by over 50% for aggressive calves compared to docile calves (14.31, 22.83, and 29.07% for aggressive, restless, and docile calves, respectively). When quality and yield grade, feedlot gain, death loss, and medical treatment cost were accounted for, docile calves returned $62.19 per head more than aggressive calves. Calves classified as restless returned $49.06 per head more than aggressive calves.

The results of this research agree with earlier Colorado research[2] that showed that feedlot cattle that were quieter and calmer during handling had greater daily gains than cattle that became agitated during routine handling. This same Colorado research[3] showed that cattle with more excitable temperament ratings produced carcasses with tougher meat and a higher incidence of borderline dark cutters than cattle with calm temperament ratings. Similarly, Texas research[4] has shown that calmer cattle consume more feed and gain faster than more excitable cattle. In this Texas research, exit velocity from a squeeze chute (used motion sensors six feet apart to measure exit velocity) was used as measure of cattle disposition.

Influence of Stocking Rate and Growth Implants on Performance of Steers

In recently published research[5], steers grazed in 2003 (634 lb) and 2004 (594 lb) from mid-March to mid-June (84 day trials) on endophyte-infected fescue in west-central Arkansas. Stocking rates of 1.2, 1.6, 2.0, or 2.4 steers per acre were evaluated with or without Synovex-S implants. Implanted steers gained significantly faster at lower stocking rates but the gain response declined as stocking rate increased. In fact, at the highest stocking rate, non-implanted cattle gained slightly more than implanted cattle. Implanting at the lowest stocking rate increased daily gains by about 33% (approximately 2.2 vs 1.65 lb/day). Non-implanted cattle gained about 1.65 lb/day irregardless of stocking rate. The positive

response to implantation with the lower stocking rates suggests that implantation increases forage consumption if forage availability is not limited. As might be expected, forage availability significantly declined as stocking rate increased.

The results of this trial are supported by Florida research[6] that concluded that dry matter intake must be 1.4 times the maintenance rate to achieve a 10% increase in gain with estrogenic growth promoters (Synovex-S or DES). In this Florida study, no response to estrogenic growth promoters was noted at 1.2 times maintenance intake. A summary of 77 feedlot trials[7] showed that strong estrogen implants (Synovex-S) increased dry matter intake by 9.3% and mild estrogen implants (Ralgro or Compudose) increased dry matter intake by 12.2%.

In conclusion, the results of this research suggest that the response to implanting pastured cattle depends on forage quality and availability. With limited forage availability, the response to implants declines.

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