



BEEF CATTLE RESEARCH UPDATE

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Factors Contributing to Value and Returns in Steer Feedouts

Recently Arkansas researchers summarized data from nine years (1996 thru 2004; 1,917 calves) of the Arkansas Steer Feedout program.¹ Their analysis showed that quality grade, medical expenses, and average daily gain significantly contributed to returns above feedlot expenses in each of the nine years. Hot carcass weight and yield grade were significant sources of variation 8 of 9 years. Hot carcass weight appeared to be the major factor affecting returns accounting for 40.5 to 67.8% of the variation in returns in 8 of the 9 years. Similarly, Colorado researchers identified hot carcass weight as the single most important component of carcass value in both a quality-based grid and yield-based grid.²

In a second analysis, these researchers categorized the calves into two groups to evaluate characteristics of calves that did (FIT) or did not (NOFIT) fall within a price grid structure based on hot carcass weight (must weigh 550 to 950 lb), choice grade (minimum of choice), and yield grade (maximum of 3.5). NOFIT calves exhibited more Brahman (11.4 vs 7.8%) and continental breeding (41.7 vs 28.1%), but less English breeding (44.9 vs 60.8%) than FIT calves. More NOFIT calves were classified as USDA large frame calves, whereas, more FIT calves were classified as moderated framed. FIT calves gained 7.4% faster and had 35 lb heavier final weights and 24 lb heavier carcass weights than NOFIT calves. Medical expenses were 34% greater for NOFIT than FIT calves (\$2.67/hd). As a result of these differences, FIT calves returned \$75 more than NOFIT calves.

In a third analysis, the calves were categorized into two groups (healthy vs treated) to evaluate the impact of morbidity on performance and carcass merit. Overall, 15.7% of the calves were treated for sickness. Healthy calves gained 4.4% faster and had 15 lb heavier final weights and 20 lb heavier carcass weights than treated calves. Healthy calves also graded better than treated calves (46 vs 25% choice). Healthy calves returned nearly \$66 more per head than treated calves with \$42 of the difference in returns being due to medicine cost. Similar results were reported from the Texas A&M Ranch to Rail databases for 1991-1995³ in which healthy cattle averaged \$92 more profit per head than sick cattle with \$31 of the difference being due to medicine cost.

In a final analysis, the initial (initial weight X initial price/lb) and final values (carcass weight X price/lb) of the steers were used to divide the cattle into four groups. The four groups were: steers with above average initial and final value (AA), steers with above average initial value but less than average final value (AB), steers with less than average initial value but above average final value (BA) and steers with less than average initial and final value (BB). The AA cattle showed less Brahman influence and more continental influence than the other groups. Returns from feeding differed among the four groups averaging \$183, \$123, \$79, and \$28 per head for the BA, AA, BB, and AB groups, respectively. Not surprisingly, these returns suggested that the most profitable cattle were those that were bought cheaper, performed well and had good carcasses.

Effect of BRD on Feedlot Performance and Impact of Genetics on BRD Susceptibility

Recent Iowa research analyzed performance and health treatment records on 1,714 Angus-sired calves fed at various feedlots over a three year period (2003-2005).⁴ In this summary, treatment for bovine respiratory disease (BRD) ranged from a high incidence of 18.6% in 2003 to a low incidence of 5.8% in 2004. Overall, 89.5% of the cattle were never treated, whereas 4.6% of the cattle were treated once or twice and 1.5% were treated three to six times. Treatment for BRD significantly reduced daily gain, carcass weight, ribeye area, and marbling score. Sire also significantly effected the number of times an animal was treated for BRD suggesting that genetics plays an important role in the resistance to BRD in Angus cattle.

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

Recent Arkansas research evaluated the overall impact of castration and the effects of timing and method of castration on growth performance and health of newly arrived stocker cattle.⁵ This research project used 272 crossbred male calves (185 bulls and 87 steers) weighing 462 lb that were purchased from sale barns and shipped to the University of Arkansas Stocker Unit in Savoy, AR (three trials). Bull calves were castrated by banding or surgical methods on day 0 or 14 of the receiving period. Over the 43 to 52 day trials, bulls castrated surgically on day 0 gained significantly faster (1.45 lb/day) than bulls castrated surgically on day 14 (1.12 lb/day) or banded on day 0 (1.21 lb/day) with bulls banded on day 14 having intermediate gains (1.36 lb/day). No differences in morbidity were observed among the castration treatments. Steers gained faster than bulls (1.78 vs vs 1.28 lb/day) and had a lower incidence of morbidity than bulls (50 vs 79%).

These data suggest that if bulls are castrated surgically, castration at arrival does not add enough stress to reduce growth performance as compared to delaying castration to day 14. Postponing surgical castration reduced performance. Whereas, banding castration could be delayed until two weeks following arrival without effecting growth performance.

¹ Gadberry, M. S. and T. R. Troxel. 2006. Nine-year summary of the Arkansas steer feedout program: Factors contributing to value and return. *Prof. Anim. Sci.* 22:454-462.

² Tatum, J. D., K. E. Belk, T. G. Field, J. A. Scanga, and G. C. Smith. 2006. Relative importance of weight, quality grade, and yield grade as drivers of beef carcass value in two grid-pricing systems *Prof. Anim. Sci.* 22: 41-47.

³ McNeill, J. W., J. C. Paschal, M. S. McNeill, and W. W. Morgan. 1996. Effect of morbidity on performance and profitability of feedlot steers. *J. Anim. Sci.* 74 (Suppl. 1): 135 (Abstr.).

⁴ Schneider, M., R. G. Tait, and J. Reecy. 2007. Estimation of the effects of bovine respiratory disease treatments through the feedlot phase and the differences among sires of Angus cattle. Iowa State University Animal Industries Report. A.S. Leaflet R2195. Available: <http://www.ans.iastate.edu/report/air/2007pdf/R2195.pdf>

⁵ Ratcliff, M. D., E. B. Kegley, S. L. Krumpelman, and J. A. Hornsby. 2005. Effect of method and timing of castration on newly arrived stocker cattle. *Arkansas Anim. Sci. Dept. Rep. Research Series* 535:115-117. Available: <http://www.uark.edu/depts/agripub/Publications/researchseries/535-29.pdf>

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