



Castration of Beef Calves: Early or Late?

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Castration is a common management practice for most livestock operations in the United States. There are a variety of reasons as to why castration is performed and these cover a range of issues from facilities to economics. Some concerns exist regarding current management practices and future animal welfare issues surrounding castration. Regardless of your stance on this issue, this article will provide a general overview of research related to the timing and method of castration.

The “old school” of thought was that bull calves are heavier at weaning than steers and heifers. Many producers will attest to the truthfulness of this statement. Literature would suggest a 15% advantage for performance of bull calves compared to steers. As a cow-calf producer selling feeder cattle this may mean you choose not to castrate your bull calves and sell them intact. Because of the stress of late castration and loss of performance, feedlot operations, buyers of feeder cattle, discount bull calves in comparison to castrated animals. Smith et al. (2000) reported a \$3.56/cwt deduction for marketed bull calves compared to steers. This would calculate to approximately \$20/hd for a 550 lb calf.

The lost performance due to castration upon arrival at the feedlot has been illustrated by several researchers. Research conducted at the University of Illinois (Faulkner et al., 1992) reported a significant reduction in performance and efficiency of 6-9 month old bulls following surgical castration. In this study average daily gains were approximately 0.92 lb/d and 0.57 lb/d for intact and castrated bulls, respectively, during the following 27 d period. Bagley et al. (1989) investigated the response to castration at birth or four months of age and implanting with Ralgro® or Compudose®. In their study, calves castrated at birth did not have reduced performance compared to those castrated at four months from birth until weaning though later castration tended to give rise to heavier weaning weights (8 lb advantage that was not statistically different). Further, these researchers illustrated a significant improvement in weaning weight (approximately 18 lb advantage) when calves were implanted with no difference among implant type compared to castrated/non-implanted calves. Recent research reported by Kansas State University (Marston et al., 2003), demonstrated calves castrated at approximately 90 d of age and implanted with Synovex C® gained similar to those left intact until weaning (average of 226 d of age) and faster than those castrated at 90 d and not implanted (2.53 lb/d, 2.53 lb/d, and 2.37 lb/d, respectively). Post-weaning performance (28 d) for both groups of early castrated calves were greater than those castrated at weaning (1.72 lb/d, 1.52 lb/d, and 1.16 lb/d for early castrate/implant, early castrate/no implant, and castrated at weaning). This post-weaning performance eliminated the weight advantage intact calves possessed at weaning.

What about method of castration? This is certainly a personal preference of either yours or your consulting veterinarian. Lentz et al. (2001) investigated surgical castration, banding using two small elastrator bands at 2-3 months of age, or left intact until weaning at 7-8 months of age. Calves were implanted with Ralgro® at the time of castration. Banded calves gained slightly faster than those surgically castrated and left intact (2.07, 2.0, and 1.98 lb/d, respectively). Intact bulls were castrated at weaning using a latex band and tended to have lower gains during the

following 50 days compared to those castrated at 2-3 months of age supporting the above data by Bagley et al. LaShell et al. (2001) castrated calves at weaning, approximately 7 months of age, either surgically or using a latex band. This study showed no difference for method of castration at 4 weeks post-weaning/castration. Interestingly, at two weeks post-castration, none of the banded calves had elevated temperatures while seven of the knife cut calves were pulled and treated with an antibiotic. This trend reversed from 2-4 weeks post-weaning as 11 of the banded calves were pulled and treated while only two of the knife-cut calves were treated for infection during this period. This observation is important with regards to management illustrating the importance of monitoring health of castrated calves and that method utilized may influence the length of time post-castration that illness is observed. Utilizing a burdizzo or clamping technique was shown to be less stressful than surgical castration either with or without local anesthetic as indicated by circulating cortisol levels (Fischer et al. 1996).

Whichever method of castration is utilized, the goal is to minimize stress and maintain health, performance and efficiency of calves. The earlier castration is performed, the less stress an animal will incur. Utilization of implants following early castration is expected to support performance similar to animals left intact. Remember, stress is additive and can negatively impact immune response. Spreading out the stress of castration by conducting this either pre-weaning or several days post-weaning or post-arrival to the feedlot is recommended.

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