

Carcass traits of crossbred steers surgically castrated or immunocastrated

Ricardo Favero¹, Gelson L. D. Feijó², Marina N. Bonin³, Rodrigo C. Gomes², Gilberto R. O. Menezes^{*2}, Roberto A. A. Torres Júnior², Lucy M. A. Surita⁴, Ivone Y. Mizubuti¹

¹Universidade Estadual de Londrina, UEL, Londrina, PR, Brazil, ²Embrapa Gado de Corte, CNPq, Campo Grande, MS, Brazil, ³Universidade Federal de Mato Grosso do Sul, UFMS, Campo Grande, MS, Brazil, ⁴Universidade Estadual de Mato Grosso do Sul, UEMS, Aquidauana, MS, Brazil.

The aim of this study was to evaluate carcass traits of crossbred steers surgically castrated or immunocastrated. Steers produced along two years from mating Nellore, $\frac{1}{2}$ Nellore x $\frac{1}{2}$ Angus and $\frac{1}{2}$ Nellore x $\frac{1}{2}$ Caracu dams with Braford, Charbray and Caracu sires were raised grazing tropical grasses until 20 months of age (n = 80; 40 per treatment; five of each genetic group per treatment), finished feedlot for 4 months (n = 64; 32 per treatment; four of each genetic group per treatment), and harvested at 570 ± 63 kg of body weight. The immunocastration protocol was performed in three applications of vaccine Bopriva (Zoetis; 1 ml subcutaneous each application), targeting the complete castration effect, obtained in the 2nd dose, at 14 months of age, when was also performed surgical castration of the other steers, so that all animals were castrated at the same age. Ultrasound scanning was performed at the beginning and end of the growing period to determine ribeye area (REA_i / REA_f), backfat thickness (BFT_i / BFT_f) and rump fat thickness (RFT_i / RFT_f). Hot carcass weight (HCW) and carcass dressing (CD) were measured at slaughter. Following 24-h chill, *Longissimus* marbling score (12th-13th ribs section), carcass backfat score (BFS), REA_{sl} and BFT_{sl} were evaluated. *Longissimus* samples were analyzed for Warner Bratzler shear force (SF) following 0d and 7d aging as well as Hunter L*, a* and b* values following 7d aging. Data were analyzed under a mixed model with sire and dam genetic group (and its iteration), birth season, castration method and backgrounding paddock as fixed effects, and sire nested in sire genetic group as random effect. There were no differences on BFT_i, RFT_i and RFT_f (P > 0.05), however, there was tendency (P < 0.10) that BFT_f was higher for immunocastrated steers (3.3 vs 2.8 mm). HCW, CD, BFT_{sl} and BFS were similar (P > 0.05) among animals. The REA_{sl} was superior for immunocastrated steers (81.8 vs. 76.5 cm²; P < 0.05). Marbling score was higher for surgically castrated (626 vs. 582; P < 0.05) and no significant differences for SF and Hunter color values were observed among steers (P > 0.05). Immunocastration can be used as alternative for surgical castration to improve backfat thickness, however it can negatively affect marbling in crossbred steers.

Key Words: backfat, intramuscular fat, musculature, temporary castration

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