



Performance and carcass traits of super-young crossbred beef cattle finished on feedlot fed two different diets

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Crossbreeding *Bos taurus* with *Bos indicus* and improving diet are alternatives to obtain high productivity and meat quality. The aim of this study was to evaluate performance and carcass traits of crossbred super-young animals finished on feedlot, fed two different diets. Weaned crossbred bulls and heifers (n=169), produced in two years, the offspring of Charolais (Ch) or Hereford (He) bulls and ½ Angus x ½ Nelore (AN) or ½ Simmental x ½ Nelore (SN) cows, were randomly assigned to two different diets - A and B. Within diet, formulation was changed from A1 (14.3% PB, 71.3% NDT) to A2 (13.4% PB, 79.1%) and B1 (14.4% PB, 69.9% NDT) to B2 (13.3% PB, 73.4% NDT) when females and males reached 330kg and 380 kg respectively. Rations were fed *ad libitum* during 110 days. Initial weight (IW), final weight (FW), daily dry matter consumption (DMC), daily weight gain (DWG) and feed efficiency (FE) were evaluated. Average age at slaughter was 12 months. Animals were slaughtered when reached 5 mm of fat thickness estimated by ultrasound measurements. After slaughtering in a commercial abattoir, carcasses were chilled overnight at 2°C. Hot carcass weights were obtained at the time of slaughter. Twenty four hours *post mortem*, the left half-carcasses were cut between the 12th and 13th ribs and 2.5 cm steaks were removed to obtain the following parameters: rib eye area (REA) taken by direct grid reading of *longissimus* muscle at the 12th rib; marbling score (MAR), carcass yield (CY), hindquarter (H), forequarter (F) and spare ribs (SR). Analyses of variance of the traits studied were by Mixed procedure with models that included the fixed effects of sire breed (SB), cow genetic group (CGG), diet, sex, and their interactions, besides year and residual random effects. The interactions were not significant, so they were removed from the model. Sex affected (p<0.05) all studied traits, with males showing higher means than females: IW (273.5 kg vs. 256.4 kg), FW (483.4 kg vs. 422.1 kg), DMC (8.91 kg vs. 8.15 kg), DWG (1.63 kg vs. 1.24 kg), FE (0.18 vs. 0.15), REA (68.60 cm² vs. 58.07 cm²), YC (56.97 % vs. 54.91 %), H (162.3 kg vs. 143.8 kg), F (111.7 kg vs. 89.2 kg), and SR (32.4 kg vs. 30.2 kg), except for MAR (3.04 vs. 3.78). Sire breed affected (p<0.05) IW, FW, REA, MAR, CY, H and F. Cow genetic group affected (p<0.05) IW, DWG, REA and MAR. The offspring of the SN cows showed higher means than the offspring of AN cows for IW (271.8 kg vs. 258.0 kg), DWG (1.47 kg vs. 1.40 kg) and REA (65.76 cm² vs. 60.90 cm²). The offspring of Ch bulls showed higher means than the offspring of He bulls for IW (271.8 kg vs. 258.1 kg), FW (460.5 kg vs. 444.5 kg), REA (66.69 cm² vs. 59.98 cm²), CY (56.55 % vs. 55.32 %), H (157.7 kg vs. 148.4 kg) and F (102.1 kg vs. 98.8 kg). For MAR, the offspring of Hereford bulls (3.78 vs. 3.03) and of the AN cows (3.74 vs. 3.08) showed higher means than the offspring of Ch bulls and SN cows, respectively. Crossbreeding with Ch bulls or SN cows can improve efficiency performance and carcass quality, while crossbreeding with He bulls or AN cows can improve marbling score.

Keywords: Charolais, crossbreed cows, Hereford, ribeye area, super-young

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