

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

GENETIC GROUP, MATING SYSTEM AND HETEROSIS ON CALVES MORPHOMETRIC MEASUREMENTS

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The objective was to evaluate the genetic group and heterosis effects on cattle morphometric measurements. A total of 159 calves were used: straightbred Charolais (C = 29) and Nellore (N = 22) and crossbreeds of the second generation (G2, 3/4C 1/4N = 21 e 3/4N 1/4C = 9) and third generation (G3, 5/8C 3/8N = 44 e 5/8N 3/8C = 34). The increment from birth to 12 months of age in the arm perimeter (API), thoracic perimeter (TPI), body length (BLI), and rump height (RHI) measurements were evaluated. Charolais calves had greater increments in the measurements when compared to the Nellore calves, except for the rump height. In G2, the Charolais predominance calves had also greater increments when compared to Nellore predominance calves, whereas in G3 only the Nellore predominance animals had higher rump height increment. In G3 no differences ($P > 0.05$) were observed for any of the measurements between the genetic groups. However, in the straightbred and G2 animals the increment differences were mostly significant within them. Heterosis was manifested in the API, TPI, BLI and RHI measurements, being greater in G2 when compared to G3, with the exception of body length. The retained heterosis of the two generations was 14.04, 6.24, 8.25 e 11.83% for API, TPI, BLI and RHI, respectively. The differences of the crossbreed animals means were more pronounced in relation to straightbred Nellore (22.0, 15.11 e 7.49%) when compared to straightbred Charolais (7.06, 2.88 e 16.55%), respectively for API, BLI and RHI. In the TPI, different from the others measurements, the G2 and G3 increment means was lower than the shown by the straightbred Charolais animals of -0.44%, whereas in the straightbred Nellore animals this increment was 13.90%. In the alternate crossbreeding of the Charolais and Nellore breeds, the advance generations determines more homogeneous genetic groups for morphometric measurements evaluated within the mating systems. The higher Charolais genetic proportion is determinant of more similar animals for API, TPI and BLI morphometric measurements, while the RHI is more influenced by the Nellore proportion increase, determining significant heterosis levels in the different crossbreeding generations.

Keywords: *Bos indicus*, *Bos taurus*, Crossbreed, Growth, Straightbred

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