Body weight and reproductive traits of Nelore, 1/2 Angus + 1/2 Nelore and 1/2 Senepol + 1/2 Nelore females

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The adequate use of crossbreeding in the beef cattle industry depends on the characterization of the genetic groups, for economically important attributes, such as reproductive and growth traits. The aim of this study was to evaluate sexual precocity and body weight of Nelore (NE), 1/2 Senepol + 1/2 Nelore (SN) and 1/2 Angus + 1/2 Nelore (AN) females. The NE, SN and AN animals were sired by 21, 13 and 23 bulls, respectively, and were the daughters of commercial Nelore cows. They were born during late spring and early summer from 2004 to 2006 and were raised together on pasture. Sexual precocity was taken as the age at first observed estrus (AFE; days) and at first calving (AFC; days). First estrus of 67 NE, 73 SN and 60 AN heifers was observed daily since 10 months of age, with the help of teaser bulls. All heifers were first exposed to Canchim bulls during a 60-day fall/winter breeding season, just after 16-18 months of age. After that, they were exposed to Canchim bulls in a spring/summer breeding season, at 22-24 months of age if they came out non pregnant of the first breeding season, and every year to Canchim and other two breed bulls in a spring/summer breeding season from about three years of age on. Females would be culled if they did not have at least one calf at 4 years of age, with a tolerance of six months, due to changes in the breeding season. Other traits studied were weight at first observed estrus (WFE; kg) and at first calving (WFC; kg). Age and weight traits were studied by analyses of variance with a model that included the fixed effects of calf-crop (year of birth) and genetic group (GG), and the random effect of sire (GG), using the Mixed procedure. A total of 64 (95.5%), 73 (100.0%) and 60 (100.0%) of the NE, SN and AN heifers, respectively, showed first estrus, with no difference (P>0.05) among GG. After culling due to accidents or health problems, from the heifers left, 55 (94.8%) NE, 67 (95.7%) SN and 59 (100.0%) AN calved for the first time meeting the stayability requirement. The analyses of variance showed significant effects of GG for AFE (P<0.0001), AFC (P<0.0001) and WFC (P<0.0038), but not for WFE (P>0.05). Least squares means were 662.04 ± 12.66 (NE), 561.66 ± 12.29 (SN) and 477.57 ± 12.90 (AN) for AFE, and $1,138.62 \pm 20.97$ (NE), $1,008.16 \pm 19.44$ (SN) and 922.17 ± 20.15 (AN) for AFC, with significant differences among GGs. For WFC the least squares means were significant different only between NE (421.30 ± 6.79) and AN (454.19 ± 6.45), but not between these and SN (437.02 ± 6.58). For WFE the least squares means were 307.93 ± 5.39 (NE), 317.70 ± 5.43 (SN) and 312.63 ± 5.41 (AN). Crossbred AN heifers are more precocious (younger at first observed estrus and at first calving) followed by the SN heifers, which are more precocious then the Nelore heifers.

Keywords: age at first estrus, age at firs calving, beef cattle, body weight, crossbreeding