

Genetic parameters for growth traits in Mexican Nellore cattle.

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Abstract

The aim of this study was to estimate genetic parameters for growth traits in Mexican Nellore cattle. A univariate animal model was used to estimate (co)variance components and genetic parameters. The traits evaluated were birth weight (BW), weaning weight (WW), and yearling weight (YW). Models used included the fixed effects of contemporary groups (herd, sex, year, and season of birth) and age of dam (linear and quadratic) as a covariate. They also included the animal, dam, and residual as random effects. Phenotypic means (SD) for BW, WW, and YW were 31.4 (1.6), 175 (32), and 333 (70) kg, respectively. Direct heritability, maternal heritability, and the genetic correlation between additive direct and maternal effects were 0.59, 0.17, and -0.90 for BW; 0.29, 0.17, and -0.90 for WW; and 0.24, 0.15, and -0.86 for YW, respectively. The results showed moderate direct and maternal heritabilities for the studied traits. The genetic correlations between direct and maternal effects were negative and high for all the traits indicating important tradeoffs between direct and maternal effects. There are significant possibilities for genetic progress for the growth traits studied if they are included in a breeding program considering these associations.