ESTIMATES OF GENETIC PARAMETERS USING RANDOM REGRESSION MODELS FOR WEIGHTS FROM BIRTH TO SELECTION (378 DAYS) OF NELLORE MALES

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Estimates of variance and covariance components of random regression coefficients for additive direct effect, permanent environmental effect due to animal, and maternal permanent environmental effect were obtained by restricted maximum likelihood method, using 17,942 records of 2,582 Nellore males. Legendre Polynomials for additive direct(kA), permanent environmental due to the animal(kC) and maternal permanent environmental(kQ) effects of orders $k=6,5,3$ and $k=6,6,4$ ($k=kAkCkQ$) were used, with residual variances modeled with four (R4) or eight (R8) classes. Estimates of heritability varied in different points along the growth trajectory: decreasing from 0.44 and 0.29 at 35 days to 0.22 and 0.21 at 210 days, increasing again to 0.40 and 0.39 at 378 days of age, for models $k=6,5,3R4$ and $k=6,6,4R8$, respectively. Maternal permanent environmental effect was responsible for 29% of the phenotypic variance at 91 days ($k=6,6,4R8$). In general, genetic correlations were high, with values of 0.88 and 0.83 between weight at 120 days and weights at 210 and 378 days of age, respectively, and of 0.90 for body weights at 210 and 378 days of age, for $k=6,5,3R4$. Estimates of variance components for random regression models for additive direct and maternal permanent environmental effects changed along growth curve up 378 days of age. Responses to selection could be effective, mainly if the weights considered are close to 378 days of age.