Genetic parameters for productive life traits and reproductive efficiency traits at 6 years in Nellore cattle

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ABSTRACT. The objective of the present study was to estimate (co)variance components for length of productive life (LPL) and some alternative reproductive traits of 6-year-old Nellore cattle. The data set contained 57,410 records for age at first calving from Nellore females and was edited to remove animal records with uncertain paternity and cows with just one piece of calving information. Only animals with age at first calving ranging from 23 to 48 months and calving intervals between 11 and 24 months were kept for analysis. LPL and life production (LP) were used to describe productive life. LPL was defined as the number of months a cow was kept in the herd until she was 6 years old, given that she was alive at first calving and LP was defined as total number of calves in that time. Four traits were used to describe reproductive traits: two breeding efficiencies on original scale were estimated using Wilcox and Tomar functions (BEW and BET, respectively), and two breeding efficiencies transformed (ASBEW and ASBET, respectively), using the function [arcsine (square root (BEi/100))]. Estimates of heritability for measures of LPL and LP were low and ranged from 0.04 to 0.05. Estimates of heritability for breeding efficiencies on original and transformed

scales oscillated from 0.18 to 0.32. Estimates of genetic correlations ranged from -0.57 to 0.79 for LPL and other traits and from 0.28 to 0.63 for LP and other traits.

Key words: Breeding efficiency; Longevity; Selection; Beef cattle