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Genetic parameters for pre-weaning traits in Braunvieh cattle

D.C. Cucco, J.B.S. Ferraz, L.F.B. Pinto, J.P. Eler, J.C.C. Balieiro and E.C. Mattos

Departamento de Ciências Básicas,
Grupo de Melhoramento Animal e Biotecnologia,
Faculdade de Zootecnia e Engenharia de Alimentos,
Universidade de São Paulo, Pirassununga, SP, Brasil

Corresponding author: D.C. Cucco
E-mail: diegocucco@yahoo.com.br

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ABSTRACT. The objective of this study was to estimate genetic parameters for pre-weaning traits of Braunvieh cattle raised under tropical conditions in Brazil. The weight and weight gain parameters were birth weight (BW, N = 9955), weight at 120 days of age (W120, N = 5901), weaning weight at 205 days (WW, N = 6970), weight gain from birth to 205 days (GAIN205, N = 6013), weight gain from birth to 120 days (GAIN120, N = 5135), and weight gain from 120 to 205 days (GAIN85, N = 4482). Variance components were estimated using the animal model with the MTDFREML software. The relationship matrix included 35,188 animals; phenotypic measures were available for 18,688. Direct and maternal heritability increased from birth to weaning, with estimates of 0.23 ± 0.037, 0.25 ± 0.050, 0.41 ± 0.059 for direct heritability for BW, W120 and WW, respectively, 0.08 ± 0.012, 0.15 ± 0.032, 0.22 ± 0.036 for maternal genetic effects, and 0.18, 0.14 and 0.16 for total heritability estimates. For pre-weaning gains, estimates of heritability were 0.36 ± 0.059, 0.30 ± 0.059, 0.12 ± 0.035 for direct genetic effects of the traits GAIN205, GAIN120 and GAIN85, respectively, 0.23 ± 0.038, 0.17 ± 0.037, 0.03 ± 0.029 for estimates of maternal heritability, and 0.12, 0.13, 0.16 for total heritability, respectively. Genetic correlations between weights were greater between measures taken at shorter intervals. This information can be used to optimize the design of programs for genetic

improvement of Braunvieh cattle raised under tropical conditions.

Key words: Beef cattle; Genetic and phenotypic correlation; Heritability; Maternal effect; Suizo cattle; Weight gain

