

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

GENETIC PARAMETERS FOR GROWTH TRAITS IN SENEPOL CATTLE

Taynara Raimundo MARTINS*¹, João Teodoro PÁDUA¹, Rodrigo Zaiden TAVEIRA²,
Paulo Roberto Costa NOBRE³, Luiz Otávio Campos da SILVA⁴, Andrea GONDO⁴,
Roberto Augusto de Almeida TORRES JÚNIOR⁴, Gilberto Romeiro de Oliveira
MENEZES⁴

*corresponding author: taynara_enz@hotmail.com

¹Universidade Federal de Goiás, Goiânia, Goiás, Brasil

²Pontifícia Universidade Católica de Goiás, Goiânia, Goiás, Brasil

³Programa Geneplus-Embrapa, Campo Grande, Mato Grosso do Sul, Brasil

⁴Embrapa Gado de Corte, Campo Grande, Mato Grosso do Sul, Brasil

To provide information that can contribute to the genetic evaluation and selection of Senepol cattle, genetic parameters were estimated for growth traits. Birth weight (BW), weaning weight (WW) and post-yearling weight (PW) were evaluated using a three-trait animal model. Fixed effects of contemporary group and age of dam as a covariate (linear and quadratic – except for PW) were adopted. For the random part of the model, direct additive genetic effect, maternal additive genetic effect (except for PW), maternal permanent environmental effect (except for PW) and error were used. (Co)variance components were estimated by a Bayesian approach using the Gibbs Sampler with software Gibbs2f90. An 800,000-cycle chain with burn-in equal to 300,000 and sampling interval equal to 50, resulting in 10,000 samples was used. Convergence was verified by visual inspection of the chain graphs for each (co)variance component and by checking the effective sample size using the software Postgibbsf90. Moderate and similar responses to selection are expected when selecting for weights at the three ages since the direct heritability estimates were similar and of average magnitude (0.18 for BW, 0.15 for WW and 0.20 for PW). Maternal heritabilities for BW and WW were lower than the direct ones (0.11 for BW and 0.10 for WW). The direct additive genetic correlations between all pairs of weights were positive (BW/WW=0.33, BW/PW=0.25, and WW/PW=0.92), indicating a significant degree of association among them. This suggests that using any of them as a selection criterion will result in a correlated response in the others and that a multi-trait approach is recommended for the genetic evaluation of growth traits in Senepol cattle for exploiting this association.

Keywords: beef cattle, breeding value, genetic correlation, heritability

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