



# Use of weaning management group as a random effect for a more robust estimation of genetic parameters for post-weaning traits in Nellore cattle

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**ABSTRACT.** Data from 69,525 animals were used to compare two types of analyses, one of them having the weaning management group (WEMANG) included as an effect in the contemporary group (F\_WEMANG) and the other considering the weaning management group as a random effect, not related to the mathematical model (R\_WEMANG) for post-weaning traits. The components of (co)variance were estimated for pre-weaning traits (birth weight and weaning weight) and for post-weaning traits [scrotal circumference (SC), weight gain from weaning to 18 months of age (WG) and muscle score (MUSC)] in Nellore cattle, based on a complete animal model. Heritability of SC, WG and MUSC for the F\_WEMANG model was equal to  $0.46 \pm 0.02$ ,  $0.38 \pm 0.03$  and

0.26 ± 0.01, and for the R\_WEMANG model it was 0.45 ± 0.02, 0.31 ± 0.03 and 0.25 ± 0.01, respectively. Genetic correlations between all the studied traits varied between 0.07 ± 0.01 and 0.77 ± 0.03 in F\_WEMANG and between 0.02 ± 0.01 and 0.76 ± 0.04 in R\_WEMANG. The R\_WEMANG model allowed a decrease in the number of contemporary groups as well as an increase in the number of observations per group without significant alterations in heritability coefficients, for the post-weaning traits. Consequently, the analysis became more robust and avoided having contemporary groups with low variability.

**Key words:** Genetic correlation; Beef cattle; Contemporary group; Heritability