Effect of sire-cluster interaction on genetic values for eighteen month weight of Canchim cattle

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The extent to which a genotype is expressed can be determined by the environment, therefore, it is possible that the best genotype in an environment may not be in another one. The aim of this study was to evaluate the existence of genotype–environment interaction (GEI) in eighteen month weight (EMW) in Canchim cattle, using Pearson's and Spearman's rank correlations of breeding values (BV) of sires in different environments. Three different clusters of cities in the State of São Paulo, homogeneous with respect to environment variables, were considered as the environments. The three-trait statistical model used to predict BV by bayesian inference included the fixed effects of contemporary group and age at weighing (covariate), and additive and residual random effects. Pearson's and Spearman's correlations varied from 0.39 to 0.78 and 0.42 to 0.75, respectively, suggesting that the genetic potential of sires for EMW depended on the clusters environment conditions.