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Phenotypic and Genetic Parameters for Temperament of Guzerá (*Bos indicus*) Females under Selection for Milk Production in Brazil

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Temperament is an important trait of animal behavior related to animal welfare and production, as well as to the economic efficiency of any production system. The objective of this study was to assess the phenotypic and genetic parameters for temperament of dual purpose Guzerá cattle to assist in defining strategies for the improvement of this trait. The temperament of Guzerá females at different ages from five herds were measured using the method of reactivity in a mobile cage (TR). Measurements were taken in the rainy season and repeated in the dry season, totalizing 2663 records. For the statistical analysis, the reactivity data were transformed into a base e-logarithmic scale. Data were analyzed using the procedure MIXED available in SAS[®] and the free software MTDFREML. The model included as fixed effects herd, season, order of entry in the cage, weight, physiological state and age at measurement, as a covariate. As random effects, it was included the sire and the residual. Variance analysis found significance ($p < 0.001$) of herd, season, order of entry in the cage, physiological status, weight and linear and quadratic age at measurement effects. Herd constituted the most important factor associated to temperament of Guzerá females and is tightly related to handling routines such as taming and human-animal interaction within the herds. Age was the second important effect, being related to previous experience, maturity and disposal of bad-temperament animals. The estimation of heritability and repeatability was respectively 0.06 ± 0.025 and 0.40 ± 0.033 , emphasizing the importance of environmental effects on the temperament of Guzerá females. The results of this study indicate that Guzerá animals respond to positive-handling routines and that selection for the improvement of temperament in this metapopulation will reach low genetic progress.

Key Words: Animal behavior, Selection, Zebu cattle, Dual purpose

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