

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

GENETIC PARAMETERS FOR DAYS TO FIRST CALVING AND HEIFER WEIGHT AT THE START OF FIRST BREEDING SEASON IN NELORE HEIFERS

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The reproductive performance is a determinant factor for the economic efficiency of beef cattle production. Many studies have considered age at first calving and calving interval as main traits of reproductive efficiency. However, currently, the trait days to first calving (DFC) has been highly recommended for evaluation of reproductive performance. DFC is represented by the interval, in days, between the first day of the breeding season, when the female is introduced to the bull, and its first calving. Some recent studies reported that DFC is genetically associated with the heifer weight at the start of the first breeding season (WFBS). In this context, we aimed to estimate genetic parameters for the DFC and WFBS traits in Nelore heifers. The data used in this study consist of 1273 heifers raised in an extensive system. The heifers entered a breeding season, lasting around 120 days, with an average of 24.16 months old. DFC and WFBS traits were measured from 1999 to 2012. Data consistency, outliers detection and descriptive analyzes were performed in R software. Afterwards, the variance components were estimated assuming an bivariate animal model implemented in the AIREMLF90 software. DFC and WFBS obtained an average of 340.73 days and 302.90 kg, respectively, while the coefficient of variation was 0.10 and 0.11, respectively. The estimated heritability for DFC was 0.17, considered low to moderate. WFBS presented a heritability of 0.43 and a positive genetic correlation of 0.20 with DFC. The positive genetic correlation between WFBS and DFC may indicates that lighter heifers at the beginning of the breeding season have better reproductive performance. This can be explained considering that lower females have a lower nutrient requirement for maintenance and consequently are more fertile and more adapted to nutritional limitation systems, such as in extensive system in Brazil. In general, there is sufficient additive genetic variance to perform a genetic evaluation of the analysed traits, justifying the use of DFC in beef cattle breeding programs.

Keywords: beef cattle, fertility, genetic correlation

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