ZOOTECNIA BRASIL
Centro de Convenções da PUC-GO | Goiânia-GO
27 a 30 de agosto de 2018

55ª REUNIÃO ANUAL DA SOCIEDADE BRASILEIRA DE ZOOTECNIA

ZOOTEC 28º CONGRESSO BRASILEIRO DE ZOOTECNIA

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

GENETIC CORRELATIONS BETWEEN REPRODUCTIVE TRAITS OF NELORE FEMALES AND PRINCIPAL COMPONENT ASSOCIATED WITH MATURITY

Patrícia Iana SCHMIDT*[1], Isabella Almeida FERREIRA[2], Gabriel Soares CAMPOS[3], Daniel Duarte da SILVEIRA[2], Roberto CARVALHEIRO[1], Fabio Ricardo Pablos de SOUZA[2], Arione Augusti BOLIGON[2]

*corresponding author: pati.iana@hotmail.com
[1]Universidade Estadual Paulista "Júlio de Mesquita Filho", Jaboticabal, São Paulo, Brasil
[2] Universidade Federal de Pelotas, Pelotas, Rio Grande do Sul, Brasil
[3]Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brasil

One of the biggest challenges for the beef cattle breeders is to produce sexually precocious cows with high fertility rates, which could be obtained with the selection for age at first calving (AFC), heifers rebreeding (HR), heifer pregnancy at 18 months of age (HP18) and number of calvings at 53 months of age (NC53). In the present study, genetic associations between reproductive traits of Nelore females (AFC, HR, HP18 and NC53) and a principal component associated with maturity (PCM) were investigated. Dataset was provided by Conexão Delta G and contained information of 55,963 (AFC), 97,842 (HR), 87,575 (HP18) and 171,797 (NC53) Nelore females. The PCM was obtained in previously analyses from breeding values predicted for selected traits in this population (birth to weaning weight gain; weaning to yearling weight gain; conformation, finishing precocity, and muscling scores at weaning and at yearling; and yearling scrotal circumference), using phenotypic data of 600,132 animals. Contemporary groups of female traits were defined by year and season of birth, year and farm at weaning, and weaning and yearling management groups. Analyses were performed by Bayesian inference and consisted of chain of 800,000 cycles, burn-in of 200,000 cycles and a thinning interval of 20 cycles. Linear animal model were used for AFC and PCM, and threshold animal model for HR, HP18 and NC53. Systematic effects of contemporary group (except for PCM) and random effects of additive direct genetic and residual were considered. The PCM were used in two-trait analyzes including each of females traits. In evaluated females, 58.67% and 15.37% showed successful for HR and HP18, respectively. The phenotype for NC53 ranged from 0 to 2 and the most cows presented extreme values (0 or 2). Heritability for females traits were of 0.20±0.01 (AFC), 0.11±0.01 (HR), 0.33±0.02 (HP18) and 0.10±0.01 (NC53). The PCM, contrasting late biotype animals (better breeding values for weight gains and conformation) with early biotype animals (better breeding values for finishing precocity, muscling and scrotal circumference), had negative and favorable genetic associations with HR (-0.10±0.02), HP18 (-0.14±0.02) and NC53 (-0.09±0.01). Favorable genetic correlation also was estimated between AFC and PCM (0.13±0.01). Thus, sires selection based on the precocious biotype at weaning and yearling (i.e. lower values of PCM) should provide progress in efficiency of cows used in reproduction over generations.

Keywords: age at first calving, breeding values, heifers rebreeding, number of calvings