100   Heritabilities and genetic correlations for male scrotal circumference and female reproductive and growth traits, in Canchim cattle. M. M. Alencar[*1], A. M. Silva[2], A. R. Freitas[1], R. T. Barbosa[1], and L. A. Correa[1], EMBRAPA-Centro de Pesquisa de Pecuária do Sudeste/São Carlos, SP/Brazil, [2] Graduate
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The objective of this study was to estimate heritabilities of and genetic correlations among male scrotal circumference (SCI2; 857 observations) at 12 months of age, and female body weights at first (BWFC; 927 observations) and second (BWSC; 769 observations) calvings, adult weight (AW; 956 observations), and mature weight (A; 486 observations) and maturation rate (k; 486 observations) obtained using the Von Bertalanffy model, for Canchim (5/8 Charolais + 3/8 Zebu) cattle. The restricted maximum likelihood method with an animal model that included the fixed effects of contemporary groups (year-season of birth for SC12, AFC, ASC, A and k, and year-season of calving for BWFC, BWSC and AW) and the random effects of animals, was used to estimate the variance and covariance components. The heritability estimates, obtained by univariate analyses, were equal to: 0.30 (SC12), 0.38 (parameter A), 0.35 (parameter k). 0.12 (AFC), 0.33 (BWFC), 0.04 (ASC), 0,39 (BWSC), and 0.38 (AWj. The genetic and phenotipic correlations between the parameters A and k were equal to -0.74 and -0.75, respectively. The genetic correlations, obtained by bivariate analyses, among SC12 and the female traits were: -0.24 (parameter A), 0.27 (parameter k), -0.47 (AFC), 0.09 (BWFC), -0.67 (ASC), 0.07 (BWSC), and -0.17 (AW). These results indicate that male scrotal circumference, and female weights (BWFC, BWSC and AW) and growth curve parameters A and k have enough additive genetic variation to respond to mass selection. Selection to increase SC12 should result in desirable correlated responses in AFC, ASC and k, without any considerable change in female adult body weights. Thus, SC12 is a good selection criterion to increase reproductive efficiency of the herd studied.

Key Words: Beef cattle, Growth and reproductive traits, Genetic parameters