CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

HERITABILITY OF SCROTAL CIRCUMFERENCE ADJUSTED FOR GROWTH TRAITS IN BRAFORD CATTLE RAISED UNDER TROPICAL CLIMATE CONDITIONS

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The aim of this paper was to identify heritability estimates (h^2) of scrotal circumference adjusted for growth traits in Braford bulls. Data from 24,688 young Braford bulls born between 1991 and 2017, belonging to the historical dataset from Conexão Delta G was used in a first step with the help of software SAS (2014) to estimate simple and double adjustment factors of scrotal circumference (SC) for: age (SC_A), weight (SC_W), conformation (SC_C), precocity (SC_P), musculature (SC_M), size (SC_S), age and weight (SC_{AW}), age and conformation (SC_{AC}), age and precocity (SC_{AP}), age and musculature (SC_{AM}), age and size (SC_{AS}), weight and conformation (SC_{WC}), weight and precocity (SC_{WP}), weight and musculature (SC_{WM}), weight and size (SC_{WS}), being all measures taken at yearling. After edition, the dataset totalized 7,594 young bulls belonging to 401 contemporary groups considered as fixed effect. The covariates, when significant, either linear or quadratic, were individual and maternal heterozygosity, age and weight. The scrotal circumference values were adjusted for each growth trait, so the genetic and environmental variances and h^2 were estimated by BLUPF90 package (Misztal et al., 2014). The h^2 were similar to SC_A and SC_W, being 0.30 ± 0.05 and 0.31 ± 0.05, respectively. However, for SC_C, SC_P, SC_M and SC_T there was a gradual increase in h^2: 0.25 ± 0.05, 0.27 ± 0.05, 0.30 ± 0.05 and 0.34 ± 0.06, respectively. For double adjustment SC_{AW} presented the highest h^2 of 0.40 ± 0.06. When conformation, precocity and musculature were adjusted for age it discriminated better the differences between h^2 of these traits compared to weight adjustment of the order of 0.27 ± 0.05, 0.28 ± 0.05, 0.31 ± 0.05. vs 0.32 ± 0.05, 0.31 ± 0.05, 0.32 ± 0.05, respectively. Although SC_{AS} and SC_{WS} had greater h^2 than others score traits, 0.33 ± 0.06 and 0.39 ± 0.06, respectively, it was due to different N because a smaller number of animals had information size, changing the data structure, which influenced the result. Therefore, different adjustments of growth traits for circumference scrotal can be used in order to emphasize different selection objectives.

Keywords: conformation, musculature, precocity, size, visual scores

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