

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

ESTIMATION OF GENETIC PARAMETERS AND SELECTION OF ELEPHANT-GRASS FOR FORAGE PRODUCTION USING MIXED MODELS

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The efficient use of fodder and grassland as the basis of animal feed represents a way of raising productivity and reducing production costs. In this scenario, elephant-grass stands out among the most used forages in the intensive animal production systems in the world mainly due to its high productive potential, support capacity and nutritional quality. The purpose of this work was to estimate genetic parameters for the selection of elephant-grass (*Pennisetum purpureum* Schum.) clones for forage production in two seasons, a period of water restriction and the total period of study. We evaluated 80 accessions of elephant-grass by means of the mixed-models methodology (REML/BLUP). The evaluation of dry matter yield (DMY) of the different genotypes were executed in edaphoclimatic conditions in Campos dos Goytacazes, Rio de Janeiro, Brazil. The Selegen-REML/BLUP software accomplished the statistical and genetic analyses. It was seen that the DMY trait was with a low estimate of coefficient of genotypic variation (3.08%), which demonstrates possible difficulties with the selection for this trait. Heritability-coefficient estimate was 0.3606 for the dry season and 0.4193 for the total period. Those results were the variation in that trait due to genetic causes. Although those values may not be considered of high magnitude, they are of great interest for the breeding mainly because it is a polygenic trait. In both periods, genotypes 68 (Pasto Panamá), 41 (Gramafante), 58 (IJ 7125 cv EMPASC307), 77 (02 AD IRI), 78 (08 AD IRI), 57 (IJ 7125 cv EMPASC309), 25 (Elefante de Pinda), 7 (Gigante de Pinda), 64 (Australiano), 43 (Guaçu/I.Z.2) and 62 (CAC-262) stood out among the others, since it presented the highest genetic gains for DMY, which will enhance progress in the evaluated trait.

Key words: Dry matter yield, genetic variability, *Pennisetum purpureum* Schum., REML/BLUP methodology, selective accuracy.

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