



Concentration Area: Plant breeding

Optimal number of repeated measures for selection of superior genotypes of *Cynodon* spp.

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Forage grasses of the genus *Cynodon* have been indicated as species with great potential for quality fodder production. The use of repeated measures represents an important strategy for the evaluation of productive traits in forage species. In this context, the present study aims to find the optimal number of repeated measures for the accurate selection of *Cynodon* spp. genotypes. The experiment consisted in the evaluation of five commercial cultivars of *Cynodon*: Florona, Porto Rico, Roxa, Tifton 68, and Tifton 85. The experimental design was a randomized complete block design, with four replications and one individual per plot. The traits plant height (PH - cm) and dry matter (DM - %) were evaluated in four consecutive harvests. The variance components were estimated through restricted maximum likelihood (REML) and the genotypic values were predicted through best linear unbiased prediction (BLUP). The selective accuracy associated with the use of m repeated measurements was estimated for both traits. The statistical analyses were performed by Selegen-REML/BLUP software. The likelihood ratio test (LRT) indicated statistical significance ($p < 0.05$) for the genetic effects for PH and DM traits, showing the variability between the genotypes assessed. The repeatability coefficients were equal to 0.41 (PH) and 0.57 (DM), respectively. The repeatability coefficients found for both traits were classified as moderate. The use of four repeated measurements provided a selective accuracy of approximately 96% for both traits (PH and DM). The high accuracy value estimated reflects a good experimental conduction, indicating a greater confidence in the evaluation and the predicted genetic values. Therefore, at least four repeated measurements are required to obtain high accuracy in the selection of superior genotypes of the genus *Cynodon* for the traits PH and DM.

Keywords: Forage breeding; repeatability coefficients; selective accuracy.