

RESPONSE TO SELECTION FOR DIVERSE FORAGE TRAITS IN A *Panicum maximum* BREEDING POPULATION EVALUATED UNDER A HIGHLY ACID SOIL

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Acid soils are widely used for production of beef cattle in Brazil. However, *Panicum maximum* is considered a low adapted tropical forage species for acid soils. The objective of this study was to estimate the selection response in a *P. maximum* breeding population under a highly acid soil. A bi-parental population of a hundred and fifty nine plants along with its parents (S10 and cv. Mombaça) and cv. Tanzâniawere evaluated in spaced plants for six clippings (two in the dry season and four in the rainy season of 2013/2014) in a completely randomized block design for total dry matter yield (TDM, g plant⁻¹), leaf dry matter yield (LDM, g plant⁻¹), leaf percentage (LP, %), and regrowth (R, scores ranging from 1 to 5). A mixed model procedure was applied for estimating components of variance by REML and best linear unbiased prediction (BLUP). For all of the traits there was a significant genetic variance. Broad sense heritability on a plant basis was significant and varied from 0.08 for LP to 0.38 for LDM, indicating that selection response will vary according to the trait. Genetic correlations between traits ranged from -0.34 for TDM vs LP to 0.99 for TDM vs LDM. Truncated selection responses were 67.73%, 62.11%, 4.30% and 27.93% for TDM, LDM, LP and R respectively. For all the traits the mean of the 10% selected plants were higher than the parent Mombaça, indicating that this population can be a source of yielder plants than the most adopted *Panicum maximum* cultivar in Brazil. Thus, the results show that *P. maximum* can be high-yielding under highly stressed conditions such as acid soils.

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