

Forage Nutritive Value in the USDA-NPGS *Cynodon* spp. Germplasm Collection

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Bermudagrass (*Cynodon* spp. L.) is an important warm-season perennial grass grown for forage in subtropical/tropical areas around the world. A world collection of *Cynodon* species is available at the USDA National Plant Germplasm System (USDA-NPGS). The objective of this study was to calculate genetic parameters in a set of 286 bermudagrass genotypes for forage nutritive value across harvests in Citra, FL. The population was composed of: i) 137 PI's from the NPGS maintained at Griffin, GA; ii) 146 PI's from the bermudagrass core collection maintained at Tifton, GA; and iii) commercial cultivars ("Tifton 85", "Coastal", and "Jiggs"). The experiment, established in 2014, was designed as a row-column with two replicates and augmented representation of the cultivars. The entire population was evaluated twice (June 2nd and August 12th 2015), while a select group of 15 genotypes were sampled nine more times, for crude protein (CP), phosphorus (P), in-vitro dry organic matter digestibility (IVOMD) and neutral detergent fiber (NDF). Linear mixed models with repeated measures were implemented in R. For the entire population, significant genotype by harvest interaction ($P < 0.05$) were observed for CP and IVOMD, and significant genotype and harvest main effects ($P < 0.05$) were observed for P and NDF. PI's exhibiting higher and lower parameters than commercial cultivars were identified. For the subset of 15 genotypes, the absence of significant genotype by harvest interactions for all traits indicated performance stability across harvests. Genotype and harvest main effects ($P < 0.05$) were statistically significant for all traits, and PI's with improved nutritive value have been selected. Hence, genetic variability exists for forage nutritive value in the population, indicating that genetic improvement for those traits could be achieved.