



Identification of sorghum hybrids with high phenotypic stability using GGE biplot methodology

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ABSTRACT. The aim of this study was to identify sorghum hybrids that have both high yield and phenotypic stability in Brazilian environments. Seven trials were conducted between February and March 2011.

The experimental design was a randomized complete block with 25 treatments and three replicates. The treatments consisted of 20 simple pre-commercial hybrids and five witnesses of grain sorghum. Sorghum genotypes were analyzed by the genotype main effects + genotype environment interaction (GGE) biplot method if significant genotype x environment interaction, adaptability, and phenotypic stability were detected. GGE biplot methodology identified two groups of environments, the first composed of Água Comprida-MG, Montividiu-GO, and Vilhena-RO and the second of Guaira-SP and Sete Lagoas-MG. The BRS 308 and 1G282 genotypes were found to have high grain yield, adaptability, and phenotypic stability and are thus indicated for cultivation in the first and second groups of environments, respectively.

Key words: Genotypes x environment interaction; Grain sorghum; *Sorghum bicolor*