



Evaluation of grain yield in sorghum hybrids under water stress

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ABSTRACT. Sorghum grain yield can be significantly affected by climatic changes, especially drought and high temperature. The purpose of this study was to evaluate hybrids of grain sorghum grown under normal irrigation conditions or water stress in order to select those likely to be more tolerant of drought. Forty-nine hybrids were grown in a randomized block design experiment, with three replications. The plots consisted of four rows of 5 m length. Grain yield, weight of 1000 grains, harvest index, days to flowering, and plant height were measured. All of these characteristics were affected by water stress; however, grain yield showed the largest relative reduction. Comparison of the various genotypes showed that some hybrids had an acceptable grain yield under water stress, and maintained a high average yield compared to growth without stress. Several hybrids gave better grain yield than commercial check cultivars: 1170090, 1170092, 1170064, 1167026, 1167064, 1170093, 1167008, 1167029, 0009061, 1167092, 1105647, and 1170019 stood out for their acceptable plant height, earliness, and higher productivity.

Key words: *Sorghum bicolor*; Abiotic stress; Drought tolerance; Plant breeding