

YIELD OF SWEET SORGHUM GENOTYPES IN THE BRAZILIAN MIDWEST

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The sorghum has a high potential for crop rotation for being more resistant than maize to drought and pest. With similar cultural techniques as corn crop, sorghum has greater versatility and could be used for biofuel production, animal feed and soil cover because of the post-harvest regrowth. Therefore, the aimed of this study was to evaluate the productivity of different sorghum genotypes in Mato Grosso do Sul. The experiment was conducted at Embrapa Western Agriculture, in Dourados, MS, Brazil. Sorghum was seeding in November of 2016, in a Dystroferric red latosol (Oxisoil). The climate is classified as Tropical Monsoon, according to Koppen classification. The experimental design was a randomized block with three replicates of 25 genotypes. Chemical fertilization was not performed. The control of diseases and pests was carried out as recommended for the culture. Data were subjected to ANOVA and averages were compared by Tukey test at $p < 0.05$ probability. The genotype 201636B016 was statistically significant among the others for the cultivation environment, with higher height, green mass yield of stem (119,326 kg ha⁻¹), total (139,413kg ha⁻¹) broth (75,022 L ha⁻¹) and yield dry weight (51,599 kg ha⁻¹);however, it showed lower concentration of sugar in the steam (11.3 % sugar) and medium disease tolerance. The variety 201636B008 showed the best health index for major diseases sorghum, yet the production performance was lower than the other genotypes, with lower dry matter yield of 18,479 kg ha⁻¹ and broth production 35,335 L ha⁻¹. The highest concentration of sugar in the steam (22% Brix) was observed in the genotype 201636B005, and medium performance of the other parameters evaluated. In general, the 201636B016 genotypes was the most productive in the analyzed variables, with possible use for the cultivation of soil cover or for animal feed, while the production of 201636B005 genotype is more appropriate for bioenergy production and ground cover.

Keywords: crop rotation, Sorghum bicolor, biofuel.

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