

## FEASIBILITY OF USING PHYSIOLOGICAL PARAMETERS TO SELECT UPLAND RICE GENOTYPES WITH TOLERANCE TO WATER DEFICIT

<sup>1</sup>GUIMARÃES, C. M., <sup>2</sup>STONE, L. F., <sup>2</sup>CASTRO, A. P. DE, <sup>3</sup>MORAIS JUNIOR, O. P. DE

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Rice, a basic food for over one half of the world population, is widely cultivated in conditions subject to drought stress, in Asia as in Brazilian upland systems. More than 45% of the total cultivated rice area does not receive irrigation and the productivity is severely affected by drought stress. To reduce the risk for the culture, beyond the most appropriate agronomic practices that enable plants to better use soil water, it is recommended new cultivars with greater capacity to adapt to the irregular distribution of rainfall. This study aimed to evaluate the feasibility of using physiological parameters of water deficit tolerance as an auxiliary method in selecting upland rice genotypes for regions with irregular rainfall distribution. Two experiments were conducted in Porangatu, GO, one without and another with water deficit (half of irrigation applied to the well-watered), using four genotypes with different tolerance to this stress. The genotypes UPLRI 7, B6144F-MR-6-0-0, and IR80312-6-B-3-2-B showed the highest grain yields under drought stress and presented lower drought susceptibility index. The BRS Soberana (susceptible control) was totally unproductive at the level of water deficit applied. The most productive genotypes under water stress showed lower stomatal diffusive resistance and leaf temperature, and higher leaf water potentials throughout the day than the control. The leaf temperatures varied linearly with leaf water potentials. Infrared thermometry, if properly conducted, constitutes an important secondary component in the evaluation of lines for regions with irregular rainfall distribution, since readings are quick, nondestructive and correlated with plant water status.

<sup>1</sup> Eng. Agr., Dr., Embrapa Arroz e Feijão, Rodovia GO 462 km 12, Santo Antônio de Goiás, GO, C. P. 179 CEP: 75375-000. E-mail: [cleber.guimaraes@embrapa.br](mailto:cleber.guimaraes@embrapa.br)

<sup>2</sup> Embrapa Arroz e Feijão

<sup>3</sup> Universidade Estadual de Goiás