

Evaluation of rice genotypes for resistance to *Diatraea saccharalis* (Fabricius) using phenotyping methods

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The sugar cane borer, *Diatraea saccharalis* (Fabricius) is a pest of rice in Brazil and several American countries. An increase in *D. saccharalis* frequency of occurrence in recent years has emphasized the necessity to develop more effective stem-borer management strategies for the Brazilian rice growers. Control borers with insecticides after larvae penetrate into the rice stalk is difficult. The search for resistance to *D. saccharalis* is very important to identify source of resistance for breeding programs. Since 2010, we have conducted a series of experiments in greenhouse conditions, to identify genotypes with resistance to borers in the Brazilian rice genebank. The ultimate goal of our study is to use selected accessions as donor parents with the aim to produce rice cultivars with enhanced resistance to sugarcane borer via conventional methods of plant breeding, and in the future, through the use of molecular markers using genetic engineering methods. The experimental design was randomized blocks with five replications. Infestations were made when rice plants were 50 days old placing neonate larvae on the leaf sheaths of rice plants (2 larvae/tiller). At 30 days after infestation the rice plants were cut at ground level and taken to the laboratory where the signs of borer attack, external and internal diameter of the stem and weight of surviving larvae were determined. The morphological traits of the rice plant, response of the plant to insect attack and development of the sugarcane borer larvae indicated a genotypic variation. Our studies were successful in separating accessions into groups in relation to resistance to *D. saccharalis*. Although different groups of accessions with similar morphological traits could be discriminated, we observed that there is a considerable variability within accessions. Development of new tools to combine with traditional methods is determinant of a successful screening for insect host resistance in the future.