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Selecting soybean resistant to the cyst nematode *Heterodera glycines* using simple sequence repeat (microsatellite) markers

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ABSTRACT. The soybean cyst nematode (SCN) is a major cause of soybean yield reduction. The objective of this study was to evaluate the efficiency of marker-assisted selection to identify genotypes resistant to SCN race 3 infection, using Sat_168 and Sat-141 resistance quantitative trait loci. The experiment was carried out under greenhouse conditions, using soybean populations originated from crosses between susceptible and resistant parent stock: CD-201 (susceptible) and Foster IAC (resistant), Conquista (susceptible) and S83-30 (resistant), La-Suprema (susceptible) and S57-11 (resistant), and Parecis (susceptible) and S65-50 (resistant). Plants were inoculated with SCN and evaluated according to the female index (FI), those with FI < 10% were classified as resistant to nematode infection. Plants were genotyped for SCN resistance using microsatellite

markers Sat-141 and Sat_168. Marker selection efficiency was analyzed by a contingency table, taking into account genotypic versus phenotypic evaluations for each line. These markers were shown to be useful tool for selection of SCN race 3.

Key words: Microsatellite; Single sequence repeats; Soybean; Cyst nematode

