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Tolerance of *Psidium guajava* x *P. guineense* hybrids to *Meloidogyne enterolobii*

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Guava (*Psidium guajava*) is ranked among top ten fruit species in Brazil, with large importance in the São Francisco river valley (SFRV). Guava orchards have been destroyed in the SFRV by the *Meloidogyne enterolobii* nematode, reducing the guava area from around 5,000 to 2,500 ha. No effective control has been identified to overcome this nematode. Previous studied at Embrapa Tropical Semi-Arid have found that around 110 guava accession were susceptible, while some *Brazilian Psidium* wild species, called 'araçazeiro', were tolerant to this pest, but with limitations to be used as guava rootstock. The goal of the present study was to obtain and evaluate inter specific hybrids among *P. guajava* x *P. guineense* to be used as guava rootstock or identified F2 plants resistant to the nematode. Susceptible guava mother plant GUA161-PE and tolerant plants ARA138-RR and ARA153-BA, established at an experimental field station in 2008, Petrolina, PE, were used to obtain inter specific hybrids. Guava mother bud flowers presenting petals rupture were emasculated in the anthesis and used for pollinization. The pollinated flowers were protected with plastic bags for 15 days. Parents and putative hybrid seeds were sowed in 20 kg plastic pots and inoculated with 10,000 nematode eggs/pot when plants were 20 cm height. Four months after inoculation roots were harvested and evaluated to the scale: 0 = no mass eggs or galls, 1 = 1-2, 2 = 3-10, 3 = 11-30, 4 = 31-100, and 5 = more than 100 galls or egg mass. Plants classified lesser than two were considered tolerant. Inter specific hybrids were genotyped with SSR markers or phenotyped for dominant trait. Fifty-five ARA138-RR out sixty-three plants were lesser than two, 10 out 20 ARA153-BA plants were lesser than two and all GUA161-PE presented scale greater than two. All ten evaluated GUA161-PE x ARA138-RR hybrids were high tolerant to *M. enterolobii*, presenting scale = 0, while ten evaluated GUA161-PE x ARA153-BA were susceptible to the nematode. Hybrids were independently confirmed by two SSR markers and also by leaf veins trait. The results suggested tolerance variability for *M. enterolobii* among and within *P. guineense* accessions, and that tolerance to the nematode should be controlled by dominant alleles. It is expected that inter specific *Psidium* hybrids presenting more exuberant stem and canopy, the principal limitation of *P. guineense* plants, will make possible the use of such hybrids as guava rootstock for commercial orchards and genetic studies.

Keywords: Guava, tolerance, araçazeiro, compatibility, root-knot nematode.

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