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Host–Parasite Relationships in Tobacco Plants Infected with a Root-knot Nematode (*Meloidogyne incognita*) Population from the Azores

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During a nematode survey, severe infections of tobacco feeder roots and heavy soil infestations by *Meloidogyne incognita* race 1 were found in S. Miguel (Azores islands, Portugal). This is the first record of *M. incognita* infection of tobacco in Azores. Morphology of various life stages, analysis of the esterase electrophoretic pattern and differential host tests were used for nematode characterization and identification. Nematode-induced mature galls were spherical and/or ellipsoidal and usually contained more than one female, males and egg masses with eggs. Feeding sites were characterized by the development of giant cells that contained granular cytoplasm and many hypertrophied nuclei. Giant cell cytoplasm was aggregated along a thickened cell wall. Vascular tissues within galls appeared disorganized. The relationship between the initial nematode population density and growth of tobacco plants was tested in a glasshouse experiment in which inoculum levels varied from 0 to 512 eggs and juveniles (J_2) cm^{-3} of soil. Seinhorst's model was fitted to height and top fresh weight data of the inoculated and control plants. Tolerance limits with respect to plant height and fresh top weight of tobacco cv. 'Erzegovina' plants to *M. incognita* race 1 were estimated as 1.25 eggs and J_2 cm^{-3} of soil. The maximum nematode reproduction rate was 404.7 at an initial population density of 4 eggs and J_2 cm^{-3} of soil.
KEY WORDS: Histopathology; *Meloidogyne incognita*; *Nicotiana tabacum* cv. Erzegovina; pathogenicity; tolerance limit.

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