Differential response of tomato accessions to *Meloidogyne arenaria* (Neal) Chitwood infection

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The root-knot nematodes (*Meloidogyne* spp.) are one of the most dangerous and widespread species of nematodes affecting tomatoes. There are few methods for controlling nematodes in tomatoes. The use of resistant cultivars is economical and environmentally safe method for controlling *Meloidogyne* species. They are cultivated with a dual purpose: to reduce nematode population levels and to avoid crop damage by nematodes. The study was conducted to evaluate the reaction of tomato accessions to root-knot nematode *Meloidogyne arenaria* (Neal) Chitwood. Twenty one tomato accessions were subjected for screening. Susceptible tomato variety Ideal was used as control. The tomato plants were evaluated 60 days after inoculation on the basis of the gall index (GI), egg mass index (EMI), final populations (Pf) and reproduction factors (Rf). All the tomato accessions show varying degree of response. Most of the screened accessions were susceptible to *M. arenaria*, six were resistant and two accessions showed hypersensitive reaction.

Susceptible genotypes allowed the juveniles of nematodes to enter the roots, reached maturity and produced many eggs while resistant plants suppressed their development and thus do not allow reproduction. Tomato lines, resistant to *M. arenaria* are extremely valuable and can be used in heterosis breeding as parent lines or in combinatie breeding in tomato as resistant gene carriers.

Keywords: tomato; resistance screening; root-knot nematode