EFFICACY OF ROOTSTOCKS FOR CONTROL OF *MELOIDOGYNE INCOGNITA* ON GRAFTED TOMATO AND CANTALOUPE

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A microplot experiment was conducted to evaluate root-knot nematode (*Meloidogyne incognita*) resistance in rootstocks used for producing grafted tomato (*Solanum esculentum*) and muskmelon (*Cucumis melo*). Three tomato rootstocks including 'TX301' (Syngenta Seeds), 'Multifort' (De Ruiter Seeds), and 'Aloha' (American Takii), were tested in addition to the non-grafted scion, 'Florida-47' (Asgrow Seed), on its own rootstock. Two melon rootstocks included *C. metulifer* (Trade Wind Fruit Co.) and 'Tetsukabuto' (*Cucurbita maxima* x *C. moschata,* Takaii Seed) were evaluated with the non-grafted scion 'Athena' (Syngenta Seed) on its own rootstock. *M. incognita* eggs were extracted from tomato roots in greenhouse cultures and applied at approximately 23,000 eggs/microplot in late September 2007. Tomatoes were planted in September 2007 followed by melons in March 20008. Nematodes were not re-inoculated into microplots before planting melons. Plots previously planted with 'Florida 47' tomatoes were excluded from the melon trial and the three melon rootstocks tested were randomly distributed among the remaining plots with half of each rootstock type planted in plots previously inoculated with nematodes (before tomato) and half in non-inoculated plots. At the end of each crop, nematode populations were assessed in soil, and plants were evaluated for root weight, stem weight, root galling, root condition, and nematodes/g root.

Throughout the growing season, non-grafted 'Florida 47' plants were more vigorous than 'Aloha' and 'TX301', with 'Multifort' having intermediate vigor. Late in the season, root-knot nematode populations in soil were not significantly different among the rootstocks. Populations in roots, however, were higher in the non-grafted 'Florida 47' than in 'Aloha' and 'TX301'. 'Multifort' was intermediate, not differing from either the non-grafted or 'Aloha' and 'TX301'. Non-grafted 'Florida 47' also had significantly larger root systems and more galling than all other rootstocks at the end of the season. Some of the rootstocks of tomato exhibited regrowth of the rootstock meristems. This was particularly true of 'Multifort' and 'Aloha' which produced 56% and 12% of plants with regrowth respectively. There were no differences in soil nematode populations prior to planting the melon crop. At the end of the season, there were no differences in melon root and shoot weights, however, *C. metulifer* had better root condition ratings and lower gall ratings in plots that had been inoculated with root-knot nematodes than the non-grafted 'Athena' and 'Tetsukabuto'. There was no galling on any rootstocks in plots that were not inoculated with root-knot nematodes.