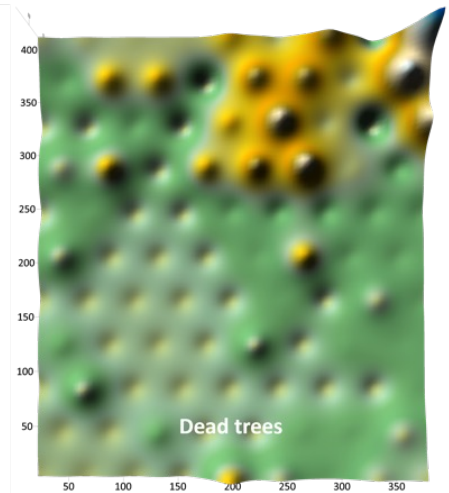
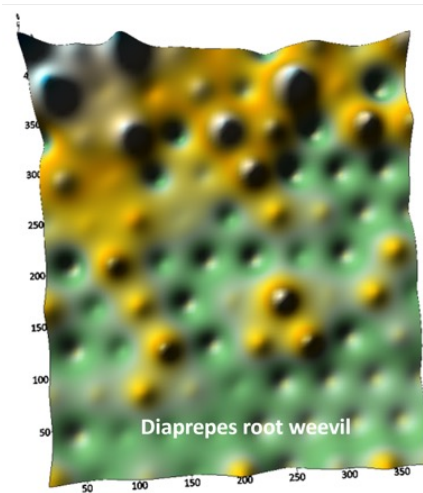


Individual Protective Covers and Management of Soilborne Pests

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Take Home Message:

- There is preliminary evidence for tolerance to sting nematode in some experimental rootstocks.
- Metagenomic methods may reveal interactions between soil properties and soil organisms that modulate root weevil abundance.
- Frequent application of EPN to discrete area at the base of the tree may improve efficacy compared to infrequent undercanopy coverage.

Summary: Following five months exposure to sting nematode in the greenhouse, the ratio of infested/non-infested root mass for the four most 'tolerant' of 16 UF rootstock lines was five-fold that of the four least tolerant lines. All of the most tolerant

lines were derived from crosses between the same tetrazygotic parents. In a second trial, seven USDA hybrid rootstocks (trifoliolate orange crossed with pumelo or mandarin parents) exhibited no root reduction, whereas two non-hybrid conventional rootstocks (sweet and sour orange) experienced a 29% reduction of fibrous roots compared to plants not exposed to nematodes. Validation of the results of both experiments is ongoing using the most and least tolerant lines in both trials and several conventional rootstocks. Additional trials were initiated to evaluate several of the most and least tolerant lines for sting nematode resistance (inability to reproduce) in addition to tolerance (ability to thrive despite nematode

ability to reproduce). Ninety-four pairs of ground traps and Tedders traps were installed on a grid pattern in a 5-acre grove infested with *Diaprepes* root weevil. During 2022 the pattern of weevil abundance was significantly associated with the tree mortality pattern in the grove. We are currently measuring the patterns of soil physical properties and food webs to discover additional associations with the weevil pattern that might reveal potential cultural integrated pest management (IPM) tactics. In addition, entomopathogenic nematodes (EPN) have been applied monthly to a subset of trees that were either protected or not from citrus psyllid and *Diaprepes* root weevil for two years after planting.

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