



The Root Of The Problem

IFAS researchers continue their work in developing citrus rootstocks tolerant to Diaprepes and phytophthora.

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The Diaprepes root weevil was first detected in Orange County in 1964 and has spread primarily by movement of contaminated ornamental nursery stock. Since then, studies of infested citrus groves have led to the discovery of a Phytophthora/Diaprepes complex (P/D complex), a complicated interaction of insect damage, invading Phytophthora fungi, rootstock, and soil type.

A primary research objective of the Citrus Research and Education Center variety improvement program is the development of improved rootstocks than can handle the P/D complex. The solution for rootstock improve-

ment programs is to package resistance genes against Phytophthora into appropriate hybrids that also exhibit wide soil adaptation.

Citrus rootstock improvement is a daunting task because a large number of traits must be combined in any successful new rootstock, including resistance/tolerance to blight, citrus tristeza virus, *Phytophthora spp.*, nematodes, Diaprepes, salinity, adaptation to challenging soils, tree size control, nucellar embryony for seed propagation, good nursery performance, the ability to consistently produce high yields of quality fruit, and now tolerance of greening.

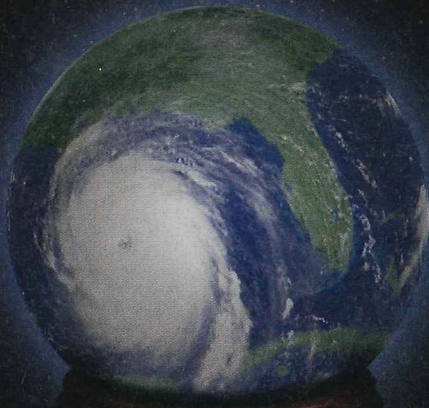
Recent research has provided data aimed at developing complex rootstock hybrids that have the capacity to tolerate mechanical damage caused by

weevil feeding and recovery by exhibiting vigorous root growth in challenging soils inoculated with *Phytophthora nicotianae* and *P. palmivora*. Data from seven screening experiments has been evaluated, along with progress from screening experiments.

Promising Selections

Test material, featuring a high level of genetic diversity, has been selected from tetrazygs obtained from 2000-2004 crosses of selected somatic hybrids, open-pollinated seedlings, somatic hybrids, and diploid hybrids. Weevil larvae fed on all candidate rootstocks; however, it was evident that the average amount of mechanical damage from feeding per candidate rootstock was quite variable.

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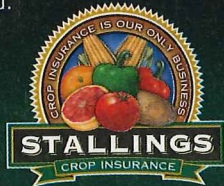
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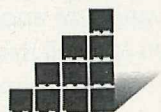


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