Florida Citrus Advanced Technology Program

QUARTERLY & FINAL REPORTS: Control of Citrus Greening, Canker & Emerging Diseases of Citrus

Instructions Complete the fields based on your project specs. When finished, save the form to your local disk using a unique name. Then, go to **http://research.fcprac.com**, and log in with your user name and password using Researcher Login in the lower left. Find this project title and click on **Submit a Report**. Update your profile information if needed, then upload this report as directed.

2009-2010 REPORT	CATEGORY (drop-down)	TODAY'S DATE (m/d/yr)
◉ *Quarterly Report* ○ *Annual Report* ○ *Final*	Management	7/29/10

WHAT IS THE "HEADLINE" FOR THIS REPORT (e.g. a one-sentence "newspaper headline" describing what you accomplished)

Several soil applied SAR inducers are effective for canker control on young non bearing and bearing trees in Florida

TITLE and CONTACT INFORMATION

Proposal Title Soil applied Systemic acquired resistance (SAR) for control of citrus canker on young trees

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Phone 863-956-1151	*Project Duration (years)* 3 *Year of Project* 2
Organization UF, Citrus Research and Education Center	*Total Direct Funds (current year)* $93,888

REPORT UPDATE (650 words; provide details about your headline)

Objective 1: Potential for soil application of the neonicotinoids, Admire (imidacloprid, IMID)and Platinum (thiamethoxam, THIA), and Actigard (acibenzolar-S-methyl, ASM), to provide long-lived SAR control of canker was evaluated. In the field trial of 3- and 4-year-old 'Ray Ruby' grapefruit trees in Ft. Pierce, Florida, soil drenches of IMID, THIA, and ASM were compared with contact activity of Kocide 3000 (copper hydroxide, CH) and/or Firewall (streptomycin, STREP) applied as a foliar spray at 21-day interval for canker control on foliage. Canker on each set of vegetative flushes was assessed as the percentage of leaves with lesions. In 2008, despite above average rainfall and a tropical storm event, all treatments significantly reduced incidence of foliar canker. Spray of CH was the most effective treatment. As a group, soil drenches of SAR inducers reduced foliar disease incidence depending on rate and frequency of application. In 2009, all treatments significantly reduced incidence of foliar canker compared to the untreated check. IMID, THIA, and ASM as soil drenches were each effective for sustained control of canker on young trees under epidemic conditions. Control with SAR inducers was highest for four applications of ASM in 2008 and 2009 seasons which demonstrated the value for maintenance of SAR with repeated soil applications. Objective 2 Integration of soil applied IMID with foliar applications of copper sprays for control of canker. IMID applied once at the beginning of the season followed by 11 CH sprays gave the bst control in the 2009 trial. This suggests that SAR and copper could be used in an integrated program for augmenting canker control for young fruiting trees. In 2010, a trial integrating ASM at different frequency of soil application with THIA and CH sprays at 21 day interval was set up on 1-yr-old Vernia sweet orange in Ashland, FL. Incidence of newly infected trees is just starting to increase in the various treatments this summer. This highest incidence of disease trees and leaves is in the nontreated check. Objective 3 is to evaluate of the complementary use of ASM, THIA and IMID soil applications to increase and/or extend canker control in 2-yr-old grapefruit trees. Canker was first observed in the trial area in September 2009 after a very high rainfall period in August (17 inches). The pattern of disease spread was across the trial area from southwest to northeast. Incidence of trees with canker was 56% in the non-treated check trees, whereas in most of the SAR treatment combinations the incidence was less than 10%. Incidence of canker in this trial continues to increase in 2010. Trials with soil applied inducers in Parana, Brazil will be evaluated in September with the collaborator.