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	1/15/10

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

Postharvest peel breakdown of fresh citrus reduced using a preharvest foliar application of K/Mg or an antitranspirant

TITLE and CONTACT INFORMATION

Proposal Title Grove Practices that Increase Fresh Fruit Quality and Reduce the Development of Peel Disorders

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Organization UF/IFAS	*Total Direct Funds (current year)* $52,918.00

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

Research results from the first season were successfully completed, the results reported at the Florida State Horticultural Society (FSHS) meetings and at Packinghouse Day and the Indian River Postharvest Workshop in Sept. 2008, a manuscript published in the FSHS proceedings (http://www.fshs.org/; Proc. Fla. State Hort. Soc. 2008. 121:322–325), and results reported in previous FCPRAC progress reports.

Several experiments were conducted since the 2007-08 season. Preharvest treatments consisted of 1) foliar K (8lb K2O), 2) foliar Mg (6% solution), 3) foliar K + Mg, 4) foliar Vapor Gard® (1% or 2%), and 5) induced tree water stress. Treatments were conducted on White grapefruit twice, Valencia oranges once, and Flame red grapefruit once. So far, we have found less promising results with foliar K alone than we did in the previous season. In one experiment, foliar K even increased peel breakdown. The reason for this is unclear. However, applying a combination of foliar K and Mg or use of an antitranspirant resulted in a significant reduction in peel breakdown during postharvest storage. Application of foliar Mg (Epsom salt) alone showed a trend in reducing peel breakdown that, while not significant, is worth repeating. We are still conducting harvests from the Flame grapefruit block that was treated in October. In general, the fruit has been very healthy with fruit harvested in early Nov. showing very little decay or peel breakdown even after over 2 months storage at ambient temperatures. We have also conducted four sets of postharvest experiments that gave similar results as the previous year. Interestingly, postharvest treatments with Imazalil sporadically reduced peel breakdown as was noted the previous year. The reason for this is unclear but worth investigating further.

We are currently setting up another experiment in different Flame grapefruit block that will include a cocktail of materials, in addition to the previous treatments, to see about reducing peel breakdown. Soil water content probes are installed in a water-stress and control plot and we have arranged to have leaf and peel samples for nutrient content.