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	8/13/10

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

Horticultural Approach to Maintaining Citrus Trees with HLB

TITLE and CONTACT INFORMATION

Proposal Title Cultural Practices to prolong productive life of HLB infected trees and evaluation of systemic acquired resistance inducers combined with psyllid control to manage greening NAS179

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Organization UF/IFAS	*Total Direct Funds (current year)* 212,793,00

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

The third season (2010) of the trials with treatments of foliar applied nutritional sprays has begun with trees responding with vigorous vegetative growth and strong flowering resulting in impressive fruit set. Trees in decline at the start of experiments in spring 2008 have regrown canopy on the exterior of the trees leaving dead and declined wood in the tree interior. Our approach of arranging the components of the Boyd cocktail into groups of micronutrients (Mg, Zn, Mn, Mo, B), SARs (Salicylic acid & Serenade), Phosphite, hydrogen peroxide, and other macronutrients is beginning to identify those components most important for maintaining trees with respect to yield and fruit quality. Although we did experience cold damage to fruit in the January 6 & 11, 2010 freezes with some drying in fruit, our yield and fruit quality data appear sound. In a 30-acre commercial block of 8-year-old Valencia trees the highest yield was with the complete nutrients plus Phosphite (93 lbs/tree) with and (82 lbs/tree) without the SARs. Statistically the addition of hydrogen peroxide in the mix did not improve yield (70 lb/tree). The treatments without the micronurients were among the lowest yields (61 to 42 lbs/tree) as was the treatment with micronutrients without the phosphite (57 lbs/tree).

Juice quality among treatments from fruit harvested in April from the 30-acre commercial block of Valencia was generally not different except for Brix and pound solids/box. Percentage juice, acid, and Brix/acid ratio were not generally significant among treatments. Brix were highest for the complete nutrient cocktail without SARs (10.5) and the complete cocktail with SARs (10.4). Brix were generally lowest for treatments without micronutrients (9.7 to 9.9). Pound solids per box were highest for the complete nutrient cocktail without SARs (5.1) and the complete cocktail with SARs (5.0). Pound solids per box were lowest for treatments without micronutrients (4.5 to 4.6).

We are in the third year of a replicated experiment in a 12-acre experiment commercial block of 8-year-old 'Valencia' oranges on 'Swingle' to test effects of micronutrients + systemic acquired resistance inducers, and Asian citrus psyllid (ACP) chemical control on ACP populations on Can. Libericacter asiaticus (CLas) titer, and plant yield. After two dormant sprays (Dimethoate @ 1pt in Dec and Danitol @ 12 oz/ acre in Jan) 2 more sprays, Delegate @ 5 oz/ac in May and Lorsban at 3pt/acre in July, were needed to maintain the ACP population below a threshold of 0.2 adults/tap in treated plots. Trees in plots where ACP was managed using insecticides produced significantly more Lb-solid per tree (5.76±0.36 Lb-solid/tree) than trees in untreated plots (4.17±0.65 Lb-solid/tree), continuing a trend seen last year. Also, trees treated with Micro+SAR produced more (5.26±0.55 Lb-solid/tree) compared with untreated trees (4.55±0.64 Lb-solid/tree), again following trends seen from the first harvest in the 2008-2009 season although differences this year were not significant. Although, neither the insecticide treatment nor the nutrients have slowed down the spread of HLB (now virtually 100%), Treatments where ACP is being managed have had consistently lower titer over the two year study, except in May 2010 where titers were higher than previously and not significantly different among treatments.

Arevalo, H. A., and P. A. Stansly. 2010. Effects of Diaphorina citri management on Can. Liberibacter asiaticus titer and fruit yield in Valencia oranges. Florida Entomologist Society. Jupiter, FL. July 2010