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*	Psyllid	4/15/10

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

Managing ACP to prevent HLB in newly-planted citrus trees

TITLE and CONTACT INFORMATION

Proposal Title Efficacy of seasonal insecticide programs for suppressing HLB in new citrus plantings

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Organization USDA-ARS	*Total Direct Funds (current year)* $99,701

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

USDA test 1. A new block of young, HLB–free citrus (Val on Carr) was planted on May 1, 2008 in a grove with substantial levels of HLB. Three ACP control treatments (programs) are being compared in this planting: 1) a monoculture of citrus receiving monthly insecticide applications (annual chemical cost of $198/acre); 2) citrus interplanted with jasmine with a relaxed insecticide program for the citrus (annual chemical cost of $156/acre), jasmine not treated with insecticides; and 3) citrus interplanted with jasmine with a relaxed insecticide program for the citrus and regular applications of imidacloprid to jasmine (total annual chemical cost of $213/acre). For plots with jasmine, a jasmine plant was planted between each citrus tree along some rows in each plot. Program 2 is being studied because ACP may be attracted to jasmine thus reducing numbers of ACP that go to citrus, and population levels of ACP natural enemies may be enhanced by having jasmine in the vicinity of citrus. Program 3 is being studied because ACP may be attracted to jasmine and killed, reducing numbers of ACP in citrus. HLB-infected trees are removed. None of the trees tested HLB positive just before planting in May 2008. One year later, a mean of 0.9, 0.6, and 0.6% of the trees were HLB-infected under programs 1, 2 and 3, respectively. During August 2009, a mean of 9.8, 3.9, and 4.2% of the trees were infected under programs 1, 2 and 3, respectively. The rapid increase in incidence of HLB in the plots between May and August 2009 was attributed to increases in ACP infestations during June and July, particularly in one program 1 plot that was adjacent to older citrus. In February 2010, a mean of 13%, 12% and 13% of the trees were HLB-infected under programs 1, 2 and 3.

USDA test 2. Three ACP control programs are being compared for preventing HLB in a block of young, HLB-free citrus (Val on Carr): 1) citrus under a relaxed insecticide program (annual chemical cost of $173/acre); 2) citrus receiving monthly insecticide applications (annual chemical cost of $198/acre); and 3) citrus treated once every three weeks with spray oil [PureSpray Foliar (470, C27) and PureSpray Green (435, C23)] from February through November (plus a December application of Danitol) (annual chemical cost of $76/acre). There are two replications of each treatment. The experiment officially started in August 2009. In January 2010, 0%, 0.3% and 0.3% of the trees tested HLB positive under programs 1, 2 and 3, respectively. These trees were removed.

UF test. The ability of systemic insecticides to protect a new planting of citrus from ACP (and consequently HLB infection) is being evaluated. 112 Hamlins were planted in two rows at 15 ft spacing on 03 Mar 2009. Half of each row was considered a replicate and divided into two main plots, treated and untreated. Treated plots were split into two subplots on 13 March, one receiving a liquid formulation of imidacloprid (Nuprid 2f @ 32 oz/acre – 0.5 lbs a.i./acre) and the other receiving a solid formulation of the same (Suscon 13 @ 10 lbs/acre – 0.5 lbs a.i./acre). On 11-Sep 2009, no significant treatment effects (Chi square = 3.61, P = 0.182) were found with respect to numbers of HLB trees. At that time, 10 of the 56 control (untreated) trees tested positive for HLB, 10 of the 28 trees treated with the granular slow release imidacloprid were positive, and 6 of the 28 trees treated with the liquid formulation of imidacloprid were positive. The same trees were resampled on 15 Jan, but all tested negative. PCR was run twice more on the DNA from both the Sep and Jan samples and the results were confirmed. Thus, the different result from Jan could only be attributed to effects of cold weather on titer and/or lack of ACP to reinoculate the trees.