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	7/11/10

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

Development, dissemination, and adoption of an efficient monitoring program for Asian citrus psyllid.

TITLE and CONTACT INFORMATION

Proposal Title Sampling Plans to Guide Decision Making for Control of Asian Citrus Psyllid (ACP)

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Phone (239) 658 3400	*Project Duration (years)* 2 *Year of Project* 1
Organization SWFREC - IFAS - University of Florida	*Total Direct Funds (current year)* $66, 791

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

Objectives of this project include 1) refinement of sampling methods, 2) testing the influence of adult density and shoot infestation on precision of estimated means and distribution of population within blocks, and 3) evaluation and integration of methods for assessing psyllid density, shoot density, and infestation rates into a user friendly system accessible to consultants and managers. Accomplishments and plans for further studies are described for each objective. 1) Data from an experiment conducted at a commercial grove showed that although sticky traps caught more adults over a two week period compared to one time tap sample at the end of that period conducted at both low and high psyllid densities, they were not only expensive but consumed more time and provided data after at least a 1-week delay compared to a tap sample that provided instant data with no more supplies than a laminated sheet of letter size paper or a smooth white surface such as a clipboard, and a one-foot piece of PVC tube. We have collected more data on comparison of these methods which is being entered and analyzed. Our commercial collaborators are now using tap sampling method and shoot examination to assess ACP populations in their groves and providing us data that is being entered for analysis. Comparison of the tap sampling and sweep net sampling methods at the SWFREC orchard showed that at low density tap method was more efficient in detecting ACP than sweep net although no significant difference was observed in numbers detected and sampling time at high density. However, density averaged less than 0.5 adults per sample with either method. Therefore, we have planned to conduct this comparison at a commercial grove where ACP density is much higher and maintained at two levels (low and high) through use of insecticides and untreated control. 2) Regression analysis using bootstrapping procedure indicated that the precision targets of 0.25 and 0.01 SEM:mean were reached at high psyllid density with 8 and 66 tap-samples, respectively, compared to 12 and 75 YCRW traps and 13 and 74 ACP traps. At low psyllid density, 267 and 1929 tap-samples, 16 and 130 YCRW traps, and 43 and 219 ACP traps were needed to attain these precision ratios, respectively. At low density 100 and 571 tap-samples and 160 and 1295 sweep net samples were needed at ratios of 0.25 and 0.1, respectively, compared to 35 and 196 tap samples and 37 and 198 sweep net samples at high density. Therefore, the sweep net would take more time to provide the same data and more work and difficulty in counting at high density. As indicated above we have included additional locations to conduct these comparisons at density above the one reported here. 3) A rapid system that includes tap samples, flush inspections and natural enemy evaluations along with forms and spreadsheets is available on our website swfrec.ifas.ufl.edu/entlab/. Just during this quarter 400 tap sampling kits were distributed among growers. Five presentations and 5 workshops on psyllid monitoring were conducted at SWFREC to train 250 attendants. A survey of 27 growers in SW Florida conducted by SWFREC and IFAS extension in 2009 covered 106,148 acres of commercial citrus (80% of productive area) reported that among 96% conducting sampling, 85% use the tap method, along with shoot examination (56%), sticky traps (7%), and sweep nets (4%). We are starting another survey to collect information for 2010. We are also working on the development of a website where growers will be able to enter data on the incidence of pest and disease in order to assess the need and recommendation of appropriate treatments. Findings from the above studies were published in citrus industry and being prepared for publication in a peer reviewed journal.