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	4/9/10

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

HLB-PCR positive ACP were found in fall, spring and summer in all plots with and without vector control program

TITLE and CONTACT INFORMATION

Proposal Title Reduction of bacterial inoculum and vector control as strategies to manage citrus huanglongbing (greening)

Principal Investigator Renato Beozzo Bassanezi	*PI Last Name* Bassanezi
Email rbbassanezi@fundecitrus.com.br	*FDACS Contract Number* NAS-8
Phone (+55) 16 3301-7025	*Project Duration (years)* 3 *Year of Project* 1
Organization Fundecitrus	*Total Direct Funds (current year)* $49,000.00

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

During last three months data still have been collected from this field experiment.

In average, after the symptomatic tree have been observed it was exposed in the field before be eliminated 1, 7, 29 and 67 days, respectively for frequencies of local inoculum reduction of 14, 28, 84 and 182 days. However, the shortest frequency of local inoculum reduction treatment (every 14 days) did not result in significant differences on HLB progress rate and HLB incidence 46 months after planting compared with longer frequency (every 182 days), probably because primary infections were more important and intensive than secondary ones.

The tested program of ACP has been efficient to reduce the number of adult psyllids captured on yellow stick traps in 79% and to reduce the number of eggs and nymphs observed on new shoots in 94%. However this vector control reduced HLB-incidence in only 48%. The disease progress rate (estimated by Gompertz model) in plots with ACP control program was significantly reduced in 27% compared to the disease progress rate in plots without ACP control (Average Gompertz rate of 1.35 for plots without vector control and 0.99 for plots with vector control). From December/09 to March/10 the disease incidence increased from 28.9% to 35.2% in plots with ACP control program and from 61.8% to 67.1% in plots without vector control.

All psyllids captured on yellow stick traps from the winter/07 to fall/09 were tested for the presence of Candidatus Liberibacter spp. by conventional PCR. PCR-positive ACP have been observed only during spring/07 (1.8% of tested samples), summer/08 (2.1%), spring/08 (4.5%), summer/09 (11.1%), and fall/09 (11.1%). Infective ACP were found both in plots with and without vector control program. Samples from spring/09 and summer/10 are being processed.

Annual maps of HLB-symptomatic trees were prepared for spatial analysis using stochastic models (MCMC) to verify the effects of each treatment on primary and secondary spread of HLB. Because of the nature of the data (based on visual symptoms and not on infection) and because the long incubation period, new data set are being prepared to be analysed using only year based data from months were the new symptoms development is null. Also, to avoid the edge effect, only central area of each plot will be analysed. This analysis will be done at USDA lab in Fort Pierce by Gottwald's team.

The results of this experiment are being compared with the results of other similar experiment, but carried out in a region with lower external inoculum pressure. So far, it could be comments that HLB managent is much easier and economically sustainanble under low pressure of external inoculum and that only local disease management could be not enough to control HLB in a region with high external inoculum pressure.

These and others results were presented in four semminars given in CREC, Florida Citrus Show, Syngentha Experimental Station, and Florida Natural's in the last week of January/10.

The assessments on this experiment will continue at least for one more year to allow more detailed temporal and spatial analysis and get final conclusions.