CITRUS ADVANCED TECHNOLOGY PROGRAM

QUARTERLY & FINAL REPORTS: Control of Citrus Greening, Canker & Emerging Diseases of Citrus

▶ INSTRUCTIONS

(●) *Quarterly Report* ( ) *Annual Report* ( ) *Final*

Required: What is the "headline" for this report (e.g. a one-sentence "newspaper headline" describing what you accomplished)

Psyllid and for Ca. Liberibacter asiaticus sampling continues

Proposal Title

How the Ca. Liberibacter asiaticus prevalence in groves can affect the acquisition and transmission by the Asian citrus psyllid

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
10/29/10	Citrus Research and Development Foundation	Epidemiology and Cultural Control

REPORT UPDATE (500 words; summarize your accomplishments)

The objective of this project was to investigate three questions: 1) what is the seasonal pattern of Ca. Liberibacter asiaticus prevalence in leaf tissue on a grove scale; 2) what are the flushing patterns of citrus and whether these flushing patterns affect the prevalence of Ca. Liberibacter asiaticus in Diaphorina citri or citrus leaves; and 3) what is the prevalence of Diaphorina citri carrying Ca. Liberibacter asiaticus on a grove scale and how does it compare the results from the citrus trees in the same grove.

In 2008 and 2009 Ebert and Rogers demonstrated that the prevalence of Ca. Liberibacter asiaticus in the Asian citrus psyllid varied seasonally but the pattern between seasons was not consistent. It was suggested that perhaps the reason for the differences between the years related to the flushing patterns of citrus and the prevalence of the bacterium in the leaves where psyllids are feeding. This project aims to determine if there is a relationship between the frequency of disease on branches and psyllids.

The postdoc has been hired for this project and is currently processing the backlog of samples but we have some preliminary results from 1 grove. An 'Earlygold' grove in Orange county Florida was selected to examine seasonal prevalence of HLB over a 3-year period. Two hundred trees were selected from 10 consecutive rows. One leaf/tree was randomly picked every fortnight. Sample collection began at the end of June 2010 with collections ongoing. For qPCR detection of Las, the midribs of five random leaves were pooled to obtain 40 samples/date. An estimated Las prevalence in the branches was generated from the pools with PooledInfRate v3. Simultaneously, ACPs were collected from the same location to compare the seasonal prevalence of Las in citrus branches and ACPs. Las prevalence increased (from 0.14, 0.20, 0.21 to 0.27) from June to September. The data from ACPs are still being processed. Comparing the data from ACPs and citrus trees could provide more information on seasonal variation in Las prevalence in both the vector and the host, and thereby enhancing our management strategies by identifying the essential periods for ACP control to prevent HLB transmission.

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Organization CREC, University of Florida

Contract Number 309

Project Duration (years) 3 *Year of Project* 1

Total Funds (current year) $84,023.00

SUBMIT REPORT

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.