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)

Cooperative ACP management key for psyllid control

Proposal Title

Development and Delivery of Comprehensive Management Plans for Asian Citrus Psyllid (ACP) Control in Florida Citrus

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
10/15/11	Citrus Research and Development Foundation	Epidemiology and Cultural Control

REPORT UPDATE (500 words; summarize your accomplishments)

This project has 5 objectives: (1) evaluate efficiency of ACP control techniques in cooperation with growers, (2) develop efficient monitoring methods for ACP, (3) accelerate testing of new chemistries and techniques for ACP management, (4) evaluate the economic component of the comprehensive program, and (5) provide an information bridge between researchers, growers, and industry. The following is an update of ongoing field and laboratory experiments.

Experiments are underway to 1) compare selection rates for resistance using mixture (AgriFlex) versus rotation of its two components, and 2) evaluate stability of insecticide resistance and number of generations required to return tolerant populations to susceptibility. Estimates of dose-response relationships of ACP adults to the two insecticides and pre-mix were as follows: commercial grade thiamethoxam (Actara 25WG, LC25 6.48, LC50 15.36) and abamectin (Agri-mek, LC25 1.16, LC50 2.79) and a pre-mix (Agri-flex, LC25 0.26, LC50 0.91). The plan is to evaluate rate of resistance induction in caged psyllids using the LC25 dose, using discriminating dose bioassays to monitor response to 5 treatments: the premix, rotation, each insecticide alone, and a check. Later, insecticides will be withdrawn and return to susceptibility evaluated.

Citrus leafminer (CLM) incidence and damage has been increasing, possibly due to increased use of broad spectrum insecticides to control ACP. Canker is also on the rise and growers are demanding assistance with management of CLM, thought to exacerbate the disease. We tested the hypothesis that heavy damage from CLM typically seen in late spring and early summer could be mitigated by controlling the first generation of the year in the spring flush. Aerial applications have not been used often for CLM control, so we also initiated a trial in July with 2 treatments of Intrepid (ground vs. aerial) compared to Delegate applied by air and results are described in the report for project 210. Intrepid (aerial/ground) applications showed the least damage of leaves compared with Delegate or untreated. Finally, we are initiating a colony of CLM to rear the parasitoid Citrastichus phyllocnistoides and support a program for monitoring CLM susceptibility to key insecticides.

We began monitoring CLM using pheromone traps dispensed in a natural preserve (Okaloacoochee Slough State Forest) at distances of 2.0mi, 3.0mi, and 4mi (3 traps at each distance) from citrus to determine the furthest distance traps will catch citrus leafminer. We have found what we believe to be 4 different species attracted to the pheromone lure. We are in the process of identifying all the leafminer species caught by CLM pheromone lures in groves and in the slough through use of bucket traps and plant samples. Representative moths will then be keyed to species by a taxonomist and subject to DNA bar coding by a molecular biologist. A botanist has been contacted to identify the host plants.

We are collaborating with the DPI CHRP program to evaluate results of the cooperative (area wide) ACP management program, in SW Florida, now the Gulf CHMA which uses a sampling protocol of 50 taps/block. The objective is to provide growers with tabular or graphical representations of results from this area.

PI First Name Philip

PI Last Name Stansly

Email pstansly@ufl.edu

Phone 239-658-3400

Organization SWFREC - University of Florida

Contract Number 00078266

Project Duration (years) 3 *Year of Project* 2

Total Funds (current year) $128,758.00

SUBMIT REPORT

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.