CITRUS ADVANCED TECHNOLOGY PROGRAM

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

SELECT PERIOD March 2014

(●) *Quarterly Report* ( ) *Final*

Proposal Title

Enhancing psyllid control through a better understanding of the effects of pesticide applications on psyllid feeding and mortality

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
3/31/14	Citrus Research and Development Foundation	Vector Management

REPORT UPDATE (500 words-It is not necessary in this public report to disclose your institution's proprietary information or intellectual property.)

Update for 3/31/14

During this quarter, work continued on a field trial examining the timing of soil applied insecticides on young trees with the goal of determining the potential for insecticide translocation of product to floral nectar. Monthly applications continued through February which was the time when bloom began. During the bloom period, nectar was sampled on three dates. Sampling was conducted by hand picking 100+ blooms per plot and taking back to the laboratory where a capillary tube was used to collect nectar from each flower. Nectar collected from all flowers from each plot was pooled in one capillary tube and then placed into the freezer for analysis using LC-MS-MS at a later date.

In addition to the experimental trial described above, we also sampled commercial citrus groves around the state to determine whether if growers follow the currently recommended young tree care program utilizing soil applied neonicotinoids, would there be detectable levels of such products in floral nectar of young tree plantings. During the bloom period of 2014, blocks of young trees were sampled from both central and the east coast of Florida. Special attention was made to survey primarily those trees in the 5-9' size class. Blooms collected from each commercial grove were taken back to the lab and processed as described above. For the large majority of samples analyzed, residues levels were at or below the level of detection. In cases where residues were detected, they were below the level of concern where applications were made more than 6 weeks prior to bloom.

Work also continued on a greenhouse trial initiated in the fall where four soil-applied systemic insecticides (imidacloprid, thiamethoxam, clothianidin and cyazypyr) were applied to potted citrus and challenged with psyllids containing the Las bacterium. The purpose was to provide direct evidence of the ability of these insecticides to prevent pathogen transmission via disruption of phloem feeding by psyllids. To date, we have collected psyllid mortality data from this experiment and have recently completed collecting and grinding all leaf material (allowing 6 mo for pathogen latency in plants) from the 100 plants used in this study. The DNA extractions from processed leaf samples followed by PCR to confirm successful pathogen inoculation will be conducted prior to the next reporting cycle.

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Organization UF-IFAS-CREC

Project Number 590

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

Total Funds (current year) $296,567.00

Form PR-12 Quarterly Reports **SUBMIT REPORT**

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.