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)

A novel method for efficient inoculation of trees with the HLB

Proposal Title

A novel method for efficient inoculation of trees with the HLB bacterium

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
1/15/13	Citrus Research and Development Foundation	Culture, Molecular Biology, Koch's Postulates

REPORT UPDATE (500 words; summarize your accomplishments)

In this project we are developing a new method for rapid and efficient inoculation of plants with HLB based on a Pulse Micro Dose Injection System (PMDIS). In our preliminary experiments we have had some success in inoculation of Periwinkle plants using this technique, which suggested a feasibility of further adaptation of the PMDIS system for HLB inoculations. Our goal now is to optimize the protocol for PMDIS-based plant inoculation.

We are conducting experiments in order to 1) identify what types of tissue within an infected citrus plant can serve as a good resource of the HLB bacteria for preparation of the inoculum by comparing extracts from stems, leaves and seed coats as inoculum sources; 2) examine whether HLB-infected psyllids can be utilized for preparation of the inoculum suspension; 3) optimize the composition of the extraction buffer used for preparation of the bacterial suspension and the extraction conditions, so they would support high efficiency of the PMDIS-mediated transmission of the pathogen; 4) optimize the parameters of injection. We are also evaluating how age of receptor plants, types of citrus varieties used as HLB bacterium donors as well as for plants being inoculated, types of flushes being inoculated affect efficiency of inoculation.

Several sets of plants have been already injected using PMDIS. Those are being maintained in the greenhouse and monitored for the disease development.

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Organization University of Florida/CREC

Contract Number

Project Duration (years) 2 *Year of Project* 1

Total Funds (current year) $94,757.00

SUBMIT REPORT

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.