CITRUS ADVANCED TECHNOLOGY PROGRAM

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

SELECT PERIOD September 2015

(●) *Quarterly Report* ( ) *Final*

Proposal Title

Establishing citrus nutrition trials for young & mature trees in the Indian River Region to promote plant growth, mitigate HLB, decrease fruit drop, and improve postharvest fruit storage properties

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
1/15/16	Citrus Research and Development Foundation	Epidemiology and Cultural Control

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

This project was initiated in 2014 and is focused on understanding the effect of nutrients applied through foliar fertilization programs (FFP) on HLB-affected trees in the Indian River marketing district. Two research trials have been established in commercial mature grapefruit groves in St. Lucie County and a young tree trial is being conducted at the UF-IRREC grove. Grove 1 has ~25 years old of 'Flame' grapefruit on Swingle rootstock. Grove 2 utilizes ~7-year-old 'Ruby Red' on Sour orange trees. Trial 3 is looking at the effect(s) that foliar fertilizers have on young tree growth and their ability to protract HLB disease symptoms in 2-year-old 'Ray Ruby' grapefruit on Kuharske rootstock. Combinations of macro and micronutrient treatments initiated on all three trials in February 2014 and applications have been made quarterly since.

Foliar nutrient applications were made according to schedule during the quarter. Materials are sprayed with a hand gun to all trees within plots, averaging about 2.3 gallons of solution per tree. Sticky traps are changed out every month and the number of psyllids counted. No differences between treatments have been observed.

Fruit drop counts began in each grove in mid-July. During each count, the number of fruit on the ground under each measurement tree in each plot were counted. After counting, fruit were raked into the water furrow or bed middles to ensure an accurate count on the next measurement date. During the four measurement dates in the quarter, fruit drop in Grove 2 was minimal, ranging from 0 to 18 fruit per tree, averaging 4.1 fruit per tree. There were no differences among treatments. In Grove 1, drop was also minimal with an average of 3.0 fruit per tree. Drop ranged from 0 to 20 fruit per tree. No differences were found with respect to treatment.

Leaf samples were taken in each grove for nutrient analysis in mid-August. In Grove 1, trees in the control plots and those not receiving phosphite had lower K than other treatments. Treatments not receiving the minor element sprays had lower leaf Mg, FE, Cu, Mn, Zn, and B than trees in treatments receiving the applications. In Grove 2, most leaf N and K levels overall were in the optimum range compared to mostly below optimum in Grove 1. With the exception of Zn and Mn, the minor element concentrations were similar among treatments. Leaf Mn and Zn concentrations were lower in control trees and the treatments not receiving the minor element sprays.

Soil samples were taken in all plots in July. In grove 2, pH ranged from 7.2 to 7.6, averaging 7.4. Soil P ranged from 166 to 244 lb/ac, averaging 208 lb/ac. In Grove 1, soil pH ranged from 7.4 to 7.9, averaging 7.6. Soil P ranged from 148 lb/ac to 209 lb/ac, averaging 172 lb/ac. No differences in any soil parameter were evident with respect to treatment in either of the groves.

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Organization UF-IFAS

Project Number 903

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

Total Funds (current year) $120,000.00

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

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.