CITRUS ADVANCED TECHNOLOGY PROGRAM

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

SELECT PERIOD June 2016

(●) *Quarterly Report* ( ) *Final*

Proposal Title

Strigolactones types of growth regulator to combat HLB in Florida

Today's Date

Sponsoring Organization (drop-down)

Citrus Research and Development Foundation

Category (drop down)

Infection Consequences

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

Between March and June 2016, we followed the proposed research plan by terminating few greenhouse and field experiments, collect and analyze data.

I: Effect of drenching application of SL on HLB-infected trees. The soil in potted Valencia trees was drenched with SL at predetermined concentrations. As in the case for foliar applications, tree characteristics were noted and changes recorded on a bi-weekly basis. The second drenching treatment was applied in February as planned and data continued to be collected. The data indicated that drenching application was inefficient in spurring any physical changes as opposed to foliar applications. Despite the double treatment, application of SL via the root system is not efficient.

II: Effect of spray application of SL on HLB-infected trees (Repeat experiment). This is a repeat of the experiments involving spraying SL on Valencia potted trees in the greenhouse. Tree characteristics were noted and changes recorded on a bi-weekly basis. Second spray treatment was applied in February and data on flowering, flushing and fruit set recorded biweekly.

In parallel to the first year, foliar application of SL oh HLB-affected trees prompted rapid vegetative and reproductive flushes accompanied by the deposition of a wider band of phloem in the roots. This was observed during a routine study of root xylem which walls thicken under HLB. Xylem cell walls in HLB affected trees are considerably thicker then in healthy trees reducing the water conduits.

III: Effect of SL + Fungicides on Phytophthora growth in HLB-infected trees. This treatment has been postponed until the arrival of a new scientist to take over the project. He is expected in October, 2016 and the experiments to commence on Nov 2016.

IV: Effect of spray application of SL on other varieties of citrus in groves. 'Midsweet' was selected as a second variety to be tested for SL effect on tree health. Tree physical characteristics and fruit drop are being monitored throughout. Data on fruit drop was completed after application of spring treatment. The data was similar to those collected the first year.

V: Effect of spray application of SL + other promising compounds on citrus in groves. Additional natural organic such as organic acids, sugars, amino acids, and few other compounds were applied to trees. So far, diluted sucrose solutions have been effective in enhancing new flush in trees with advanced stages of HLB. Sucrose has been applied to trees in a monthly basis and some recovery has been observed. Treatments continue but improvement has slowed down.

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Organization UF-CREC

Project Number 899

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

Total Funds (current year) 347,426

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

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.