CITRUS ADVANCED TECHNOLOGY PROGRAM

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

SELECT PERIOD March 2016

(●) *Quarterly Report* ( ) *Final*

Proposal Title

Effect of windbreaks, copper bactericides and citrus leafminer control on temporal and spatial progress of citrus canker

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
15/04/2016	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.)

Background information

The objective of this project is to quantify the relative effect of copper (Cu), windbreak (Wb) and leafminer control (Lc) on the spatial and temporal progress of Asiatic citrus canker (ACC) under conducive conditions for epidemics and disease loss. The experiment is set up in a 10 ha plot planted with Valencia sweet orange grafted on Rangpur lime located in the municipality of Xambre, Paraná, Brazil. The different treatments are the combination of up to three control measures (Cu, Wb, Lc) or none. The presence or absence of windbreak represents a plot. The presence or absence of copper sprays and leafminer control represents a subplot. Each subplot is composed of 112 trees. Each of the eight treatments has three replicates. Cu treated plots are being sprayed with Kocide (35% metallic copper) at 1 kg metallic copper/ha every 21 days. Lc is being performed with application of abamectin at 150 ml/ha every 21 days. Casuarina is used as a natural Wb around the plots. Disease evaluations started in December 2013 and include percentage of trees, leaves and fruits with ACC symptoms, and fruit yield. In the second season, the assessment of fruit drop was included. The present CRDF funding will cover the period of November 2015 to October 2016.

Previous results

Trees and leaves: Up to November 2015 (22 after ACC epidemics begun), incidences of diseased trees in the plots with complete management and no management reached 43.8 and 97.9%, respectively. The incidence of leaves with ACC in the canopy of affected trees dropped for all treatments and reached 0.6 and 2.5%.

Fruits and yield: In the first harvest (September 2015), the incidences of symptomatic fruits from trees treated with the tree measures and none were 3.8 and 58.5%, respectively. Production of trees revealed the same trend observed for other assessments. Fruit yield of trees under complete management (40 kg/tree) was 186% higher than control trees (14 kg/tree).

Latest results (February 2016 – 25 months of epidemics)

Trees and leaves: Incidence of trees with citrus canker reached near 100%, except for trees with complete management (85%) or with the combination of copper sprays and leaf miner control (76%). Incidence of leaves increased since November 2015 and reached 5.6% for unmanaged trees and 1.1% for trees under complete management.

Fruits and yield: Incidence of fruits with citrus canker on the trees reached 50.1% for the unmanaged trees and 5.8% for trees under complete management. Likewise, fruit drop per tree is, up to the present report, at 3.9 and 22.2 for unmanaged and managed trees, respectively. Harvest is planned for August-September 2016. All other treatments are showing intermediate results. Copper is more important for retarding disease dissemination among trees, whereas windbreaks are more important for reducing incidence of leaves with citrus canker on affected trees.

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Project Number 15-050C

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

Total Funds (current year) US$44,000.00

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

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.