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

New non-phytotoxic composite polymer film barrier as ACP repellent for controlling HLB infection

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
07/18/2016	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.)

The objective of this research project is to investigate and develop a potential non-phytotoxic, environmentally-friendly film-forming ACP repellent solution for preventing HLB infection.

In the last reporting period,OS-SG 6, 10, 11, 12 and 13 were studied for plant safety and rainfastness and these formulations were delivered to our collaborators for ACP infection trials. Preliminary results obtained from ACP infection trials on 02/14/2016 and 05/14/2016 revealed all of the formulations demonstrated lower infection rates compare to the control treatment. Among the formulations, OS-SG 10, 12 and 13 revealed minimal infection rate, while OS-SG 6 and 11 formulations displayed a moderate infection rate. In the last report period, OS-SG 15 formulation was proposed as improved version of OS-SG 12 and 13 formulations. In this report period, the formulation was optimized further to have high colloidal stability in aqueous solution, high surface coverage and moderate rain-fastness properties. The colloidal stability of the formulation was checked via measuring %Transmittance (%T) of the supernatant collected from the solution left undisturbed. The formulation revealed less than %50 transmittance up to 4 hours which was found to be comparable or better compare to commercial control -Surround WP- which is currently commercially available for growers. Safety analysis and plant leaf surface coverage of OS-SG 15 formulations were conducted using Cleopatra orange sp (common citrus variety) as a model plant. The formulations were sprayed at the application rate of 0.5 lbs/gallon (recommended rate for the commercial control) based on active content. The formulations revealed high plant leaf surface coverage at the application rate which was comparable to the commercial control. Phytotoxicity studies were conducted using a Panasonic Environmental Test Chamber (Model MLR- 352H) to control light intensity, humidity and temperature cycling to simulate summer conditions (85% RH, 32 Celsius). OS-SG 15 formulation did not cause any plant tissue damage at the applied rates, matching the commercial control. For next reporting period, the film adherence of the formulation will be tested using a rain-fastness experiment comparing the results to the commercial control and optimized version will be selected for future ACP trials.

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Project Number 858

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

Total Funds (current year) $108,319.00

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

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.