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)

Threshold experiments up and running

Proposal Title

Thresholds for Vector Control in Young Citrus Treated for symptoms of HLB with a Nutrient/SAR Package

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
1/10/10	Citrus Research and Development Foundation	Vector Management

REPORT UPDATE (500 words; summarize your accomplishments)

The goal of the present project is to establish economic thresholds under different juice price scenarios that optimize returns on investment when a nutrient/SAR package is being applied in groves with moderate to high incidence of HLB. Two 3-year field experiments were initiated in two commercial orange blocks in Hendry County (southwest Florida). One of the groves is planted with 'Early Gold' oranges and the other with 'Valencia' oranges. Average HLB incidence estimated in both groves based on symptoms is more than 70%.

Experimental design is randomized complete block with 4 replicates and 4 treatments: (1) No insecticide, (2) Calendar applications, in order to drive vector populations close to 0, (3) nominal threshold of 0.2 psyllids per tap, and (4) nominal threshold of 0.7 psyllids per tap. Calendar applications will be applied approximately every 1-2 months and consist of a rotation of insecticides recommended for managing this pest.

Adult psyllid populations are being monitored every two weeks by tap sampling. Flushing patterns and flush infestation is being estimated by assessing the number of new shoots per tree and evaluating the proportion infested with psyllids. Negative incidence of spray applications on natural enemy populations will be evaluated by counting beneficials in tap samples and flush observations.

At the beginning of the experiment, average psyllid infestation in the 'Early Gold' block was estimated at 0.26 ± 0.04 adults/tap. On July 30, treatments (2) and (3) were sprayed using the spinosyn spirotetramat (Delegate) at 4 oz/ac plus 5% 435 horticultural mineral oil. The treatment drove psyllid populations in sprayed plots down to 0.01 ± 0.01 and 0.03 ± 0.01 adults per tap in treatments 2 and 3 respectively. One month and a half later, populations were still low: 0.01 ± 0.01 and 0 adults/tap in treatments 1 and 2 respectively, but also low (0.07 ± 0.03 and 0.21 ± 0.06 adults/tap) in treatments (1) and (4) respectively. An additional spray with the organophosphate Dimethoate at 24 oz per acre has been scheduled in treatment (2) for the second week of October. Cumulative psyllid numbers are below threshold in all treatments though greater in treatments 1 and 4 (2308 and 1062 adults/tap respectively) compared to treatments 2 and 3 (227 and 843 accumulated adults/tap respectively) as a consequence of the spray in late July. Comparisons between sprayed and unsprayed treatments have not yet revealed negative effects on beneficials.

In the 'Valencia' block, average psyllid infestation was estimated at 0.06 ± 0.01 adults/tap at the beginning of the experiment. Treatment (2) was sprayed on September 28 with the organophosphate Dimethoate at 24 oz per acre. Cumulative adults/tap previous were similar among treatments (93, 91, 49 and 58 adults/tap for treatments 1-4 respectively, all below the cumulative number corresponding to pre-established theoretical thresholds (448 and 1568 adults/tap for the 0.2 and 0.7 thresholds respectively.

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Contract Number 78030

Project Duration (years) 3 *Year of Project* 1

Total Funds (current year) $72,890.00

SUBMIT REPORT

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.