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)

Dormant sprays and first harvest in threshold experiment.

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)
4/8/11	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 "Earlygold" oranges and the other with "Valencia" oranges. Average HLB incidence estimated in both groves based on PCR analysis of a random sample of 160 trees is 98% in 'Earlygold' and 76% in 'Valencia'.
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 are being estimated by assessing the number of new shoots per tree and evaluating the proportion infested with psyllids. Effects of treatments on natural enemy populations is being evaluated by counting beneficials in tap samples, suction samples and flush observations.
Treatments (2), (3) and (4) received the dormant spray on January 20 in the "'Early Gold" block and on January 21 in the "Valencia" block. Both blocks were sprayed with fenpropathrin (Danitol 2.4 EC) at 8 fl oz/ac. Treatment (2) received an additional spray in both blocks on March 16 using the IGR diflubenzuron (Micromite 80WGS) at 6.25 oz/ac.
ACP numbers at the present, in all the treatments of the 'Early Gold' block are below the nominal thresholds established (0.01 ± 0.01, 0.03 ± 0.01, 0.02 ± 0.01 and 0.05 ± 0.02 ACP adults/tap in treatments (1), (2), (3) and (4) respectively). Greatest cumulative ACP values since the beginning of the experiment are being found in treatments (1) and (4) with significantly higher numbers than in treatment (4) ($P = 0.0062$; $df = 3,15$; $F = 6.03$). In the 'Valencia' block, ACP populations are increasing in treatments that have not yet been sprayed (0.53 ± 0.14 in treatment (1) and 0.23 ± 0.06 in treatment (4) at the beginning of April). Density of ACP adults remains close to zero in treatments (2) and (3). Despite of this, no statistical differences are being found yet in the cumulative ACP numbers between treatments ($P = 0.9531$; $df = 3,15$; $F = 0.11$).
Block 1 and 2 were harvested on December 2010 and January 2011 respectively. As yet no significant treatment effect on yield has been observed ($P = 0.3582$; $df = 3,15$; $F = 1.11$ for the 'Earlygold' block and $P = 0.7033$; $df = 3,15$; $F = 0.478$ for the 'Valencia' block). Neither is the correlation between the yield loss and adult ACP cumulative numbers significant ($r2 = 0.0026$; $P = 0.8516$; $df = 1,14$; $F = 0.03632$ for the 'Early Gold' block and $r2 = 0.1390$; $P = 0.1549$; $df = 1,14$; $F = 2,261$).
There were no significant differences among treatments in juice quality measured as the ratio Brix/acid and the Lbs of Solids per box.
Predatory flies, spiders, parasitoids and arboreal ants are the beneficial groups that are being found in highest numbers. Calendar applications seem to be negatively affecting mainly spiders and arboreal ants. Further results will be needed to confirm this tendency.

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

Total Funds (current year) $72,890.00

SUBMIT REPORT

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.