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)

Evaluation of ACP control programs on non targets

Proposal Title

Impact of insecticidal control of Asian citrus psyllid (ACP) on leafminers, mites, scales, thrips and their natural enemies in Florida

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
1/11/12	Citrus Research and Development Foundation	Vector Management

REPORT UPDATE (500 words; summarize your accomplishments)

To assess the impact of insecticides used for psyllid control on non targets, replicated blocks of mature citrus untreated or treated with foliar sprays of insecticides, horticultural oils, and nutritionals were sampled for psyllids, citrus rust mites (CRM), citrus red mite, predatory mites, snow scale, chaff scale, Glover scale, purple scale, citrus blackflies, whiteflies, mealybugs, as well as their natural enemies and fruit damage at two conventional groves in Hendry County and one each in Lee and Collier Counties.

Threshold levels of psyllid populations were not reached in two treatments of two Hendry county locations. However plots designated for calendar sprays at both locations received a rotation of insecticides recommended for ACP control applied every month: spirotetramat (Movento MPC) at 16 fl oz/ac + horticultural mineral oil 2% in October, carbaryl (Sevin 7XLR plus) at 0.75 gal/ac in November and phosmet (Imidan 70 W) at 1 lb/ac in December. These treatments provided significant suppression of psyllids and also impacted some non targets. In a block of 'Earlygold' orange, CRM, chaff scale and purple scale averaged 0.4 ± 0.1, 2 ± 0.3 and 1 ± 0.2 per lens field of fruit in the treated plots, respectively, compared to 1 ± 0.2, 2 ± 0.2 and 0.4 ± 0.1 in the untreated plots, respectively. In a 'Valencia' orange block, CRM, chaff scale and purple scale averaged 0 ± 0, 0.5 ± 0.1 and 0.3 ± 0.1 per lens field in the treated plots, respectively, compared to 0.4 ± 0.2, 0.7 ± 0.1 and 0.2 ± 0.1 in the untreated plots, respectively. Percent russeting from CRM averaged 21± 2 and 35 ± 2 in the treated and untreated plots of 'Earlygold', respectively, and 14 ± 2 and 21 ± 2 in the treated and untreated plots of Valencia, respectively, indicating that insecticide treatments, probably spirotetramat, are also provided some protection from CRM. Similar impact was observed against leaf infestation with woolly whitefly. However, more scales particularly purple scale, were observed on fruits in the treated plots. Percent russeting averaged 35 ± 3, 36 ± 3, and 36 ± 3 in the plots treated with grower standard sprays, biweekly sprays of 435 oil or the untreated check in a block of 'Valencia' in Lee county, reflecting no treatment impact. Averages per lens field between treatments ranged from 0.1-0.4 for CRM and 0.2-0.3 for chaff and purple scales. Percent leaf infestation with woolly whitefly averaged 4-5% between treatments. The experiment in Collier county compares 4 treatments (1) Nutritional (2) Insecticides (3) Insecticides + Nutritionals and (4) Untreated control and uses insecticides currently recommended for psyllid control at threshold of 0.2 adults per tap sample and nutritional program developed by McKinnon Corporation averaging three sprays per year. CRM were high on fruits in the treatments using insecticides (0.2-0.5/lens field) compared to nutritionals only and the control (0.06-0.08/lens field), however, russeting was less in the insecticide treatments averaging 3-4% compared to 8-10% in nutritonal and control. Chaff scale averaged 0.5/lens field in insecticides only treatment compared to 1/lens field in the remaining three treatments. Purple scale averaged 0.2/lens field with the nutritional treatment and 0.1/lens field in the remaining three treatments. Percent leaf infestation with woolly whitefly averaged 10, 4, 4 and 2 in treatments 1, 2, 4 and 3, respectively, indicating some suppression with insecticides but increase with the nutritionals only treatment.

Four studies comparing 43 foliar treatments of recommended and experimental insecticides against ACP and citrus leafminer were submitted for publication in the Journal of Arthropod Management Tests of the Entomological Society of America.

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SUBMIT REPORT

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.