# Florida Citrus Advanced Technology Program

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

**Instructions** Complete the fields based on your project specs. When finished, save the form to your local disk using a unique name. Then, go to **http://research.fcprac.com**, and log in with your user name and password using Researcher Login in the lower left. Find this project title and click on **Submit a Report**. Update your profile information if needed, then upload this report as directed.

| 2009-2010 REPORT | CATEGORY (drop-down) | TODAY'S DATE (m/d/yr) |
|---|---|---|
| (●) *Quarterly Report* ( ) *Annual Report* ( ) *Final* | Psyllid | 7/14/10 |

**WHAT IS THE "HEADLINE" FOR THIS REPORT (e.g. a one-sentence "newspaper headline" describing what you accomplished)**

Ongoing testing of Preda-Lure (methyl salicylate) for enhanced biological control of Asian citrus psyllid

**TITLE and CONTACT INFORMATION**

*Proposal Title* Evaluation of Methyl Salicylate as a simultaneous repellent of Asian citrus psyllid and attractant for psyllid natural enemies

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| *Phone* 863-956-1151 ext. 1281 | *Project Duration (years)* 1 *Year of Project* 1 |
| *Organization* UF/IFAS CREC | *Total Direct Funds (current year)* 42054 |

**REPORT UPDATE (650 words; provide details about your headline)**

The objective of this project is to evaluate methyl salicylate dispensers to determine whether their deployment in citrus can enhance biological control of Asian citrus psyllid. Locations were selected for the field trials with the commercially available methyl salicylate (MeSA) lure, Predalure (AgBio Inc.; Denver, CO). The first site was an unmanaged grove of 'Valencia' oranges near Clermont, FL and plots were established on 4/13/10. Four plots were designated to have 1 lure hung per tree and 4 plots were designated as control plots. The plots were 0.4 ha in area with a 0.4 ha buffer between the plots. Twelve unbaited Pherocon AM yellow sticky traps were placed in all plots in rows 2, 5, 7 and 9 in trees 3, 7 and 12 to determine pretreatment populations of Asian citrus psyllid (ACP) adults and natural enemies. The trees were in late bloom stage. On 4/20/10, MeSA lures were attached to the trees with twist ties at mid-canopy height and sticky traps were replaced. The plots were then checked every 2 weeks. Sampling included replacement of sticky traps, sweep net samples of trees 6 and 11 in rows 2, 7 and 9 of all plots and 5 flush samples/plot, when suitable flush was available. The flush samples were examined in the laboratory and the number of ACP eggs and nymphs were counted. The flush were then placed in a jelly cup with water and a mylar cylinder with a mesh top placed around the flush to capture emerging ACP and parasitoid adults. They were placed in an incubator maintained at 25oC and egg, nymphs and adult ACP as well as any parasitoids were counted at 5-10 day intervals. In the field, MeSA lures were replaced on 6/24/10. The second location was established on 4/22/10 in a minimally managed grove of mixed citrus cultivars in Lake Alfred, FL. In this grove, only 3 replications of MeSA treated plots and controls were possible. Traps were placed as before and lures were hung 1/tree on 4/29/10 (post-bloom) with biweekly sampling as above. Lures were replaced in this grove on 6/30/10. The third site was a heavily managed grove of 'Hamlin' oranges in Auburndale, FL at the beginning of fruit set. Replicated plots (4) of MeSA treated and controls were established as above on 5/5/10 with the lures placed in the treated plots on 5/11/10. Biweekly sampling was conducted with traps, sweeps and flush (when available). Lures will be replaced in this grove on 5/15/10.

To date, very few ACP and beneficial insects have been collected in sweep samples in any of the 3 groves. Flush has only been available for 3 sampling dates at the Clermont grove and no parasitoids have been found although there was successful adult ACP development from the eggs and nymphs present. Traps are being held in refrigeration until the ACP and beneficial species can be counted. The unusually cold winter most likely reduced overwintering ACP population levels and also had an effect on the flush cycle of the citrus trees, but the most recent samples indicate an increase in ACP populations.

An experiment to investigate the effects of MeSA lures on the behavior of ACP is being conducted. When feather flush suitable for oviposition by ACP appeared all but 5 flush were removed and the plants placed in 58 X 58 X 90 cm screen cages. Five plants were designated as treatment and 5 as control. In the cages with treatment plants, 1 MeSA lure was suspended from the top of the cage centrally. The control cages had no lures. All cages were placed under natural conditions outside the laboratory and treatment cages were separated from the control cages by a distance of 50 m. On July 8, 2010, 50 adult ACP from a greenhouse colony were released in each cage and the number of psyllids settling on the plants was observed at 1 hour, 24 hours, 5 days and will be continued at 7 days and 10 days. At 10 days the adult ACP will be removed from the plants and examined to determine the number of males and females. The flush will be examined and the number of ACP eggs and nymphs will be counted.