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)

Breakthrough achieved in identification of ACP attractants

Proposal Title

Identification of psyllid attractants and development of highly effective trapping and attract-and-kill methods for improved psyllid control

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
10/23/11	Citrus Research and Development Foundation	Vector Monitoring, Behavior, Cultivation

REPORT UPDATE (500 words; summarize your accomplishments)

Laboratory and field studies were conducted to examine the behavioral responses of male and female Asian citrus psyllid (ACP) to their cuticular extracts and to identify an attractant for ACP. In olfactometer assays, more male ACP were attracted to 1, 5, or 10 female cuticular extract equivalent units than blank controls. The results were confirmed in field studies in which clear or yellow traps baited with 10 female cuticular extract equivalent units attracted more males than clear traps baited with male cuticular extract or unbaited traps. Analyses of cuticular constituents of male and female ACP revealed differences in relative amounts of certain compounds. Dodecanoic acid, present in greater amounts on females than males, elicited antennal responses from male and female ACP as measured by gas chromatographic-electroantennogram detection. Dodecanoic acid was also attractive to males, but not females, in laboratory olfactometer assays. Our results suggest that docacanoic acid is an attractant for ACP, but its function—sex attraction versus aggregation—remains to be determined.

In addition to the above exciting finding, we had a breakthrough in finally developing an effective gas chromatograph coupled with electroantennogram (GC-EAD) system for determining how ACP antennal neurons respond to chemicals. This has allowed us to specifically narrow down five more potential pheromone components. We were able to purchase three of these from standard chemical manufacturers and we have been able to synthesize the two others. Behavioral testing of these is currently taking place. Also, using this new GC-EAD system, we are identifying the specific plant volatile attractants for ACP. We should have an attractive lure for ACP developed in the near future.

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Organization University of Florida

Contract Number 215

Project Duration (years) 2 *Year of Project* 3

Total Funds (current year) $137,573.00

SUBMIT REPORT

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.