CITRUS ADVANCED TECHNOLOGY PROGRAM

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

SELECT PERIOD December 2015

(●) *Quarterly Report* ( ) *Final*

Proposal Title

Correlating pesticide residue analysis with psyllid feeding to improve protection of young trees

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
2/15/17	Citrus Research and Development Foundation	Vector Management

REPORT UPDATE (500 words-It is not necessary in this public report to disclose your institution's proprietary information or intellectual property.)

Report for period ending 12/2015

During the previous reporting period, we established an experiment in the greenhouse to compare the spatial distribution of soil applied neonicotinoids within leaf tissues. LC-MS-MS analysis of all of these samples is still ongoing, but we are fairly confident that the preliminary information presented in the following is an accurate representation of what the final results will be. For thiamethoxam, peaked around 2 weeks after application, and slowly declined over the next 8 weeks. The levels of material seen in the plants tissues analyzed across all samples dates was sufficient to control ACP. When tissue samples were separated and analyzed by either leaf margin or leaf center, there was no significant difference between the two for thiamethoxam. For imidacloprid, the concentrations did not peak until 5 weeks after application but even 1 week after application were high enough to control ACP and remained high enough through week 8 of the study. For imidacloprid there was a significant difference in product concentration between the leaf center and leaf margin which we had anticipated based on our previous work. Similar to imidacloprid, clothianidin concentrations peaked 5 weeks after application but were probably not high enough to control ACP 1 week after application. By two weeks after application, concentrations were high enough to have an effect on ACP. Residues remained high enough to control ACP through week 8 of the study. Similar to imidacloprid, clothianidin concentrations were significantly different between the center of the leaf and leaf margins. These results confirmed that large differences do exist between the three soil-applied neonicotinoids in terms of how they move in the plant, become distributed within leaf tissues, and the duration of control. This information will be used to design the next set of experiments examining these and other more pertinent questions under field growing conditions.

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Organization UF/IFAS/CREC

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Form PR-12 Quarterly Reports **SUBMIT REPORT**

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.