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*	Genetics	7/15/09

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

The cloning of phloem-specific promoters and resistance proteins has been initiated for eventual transfer to citrus.

TITLE and CONTACT INFORMATION

Proposal Title Engineering citrus for resistance to Liberibacter and other phloem pathogens

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Phone (352) 392-1568	*Project Duration (years)* 3 *Year of Project* 1
Organization University of Florida	*Total Direct Funds (current year)* $112,894

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

Due to the recent arrival of the funds on campus, experimental aspects of the project are still in the early stages and limited to preparation of primers and the cloning of the promoters and resistance protein genes that will be evaluated in the project as follows:

1-A series of phloem-specific promoters from Arabidopsis and other plants are in the process of being cloned for evaluation in transformed plants. Initial assessment of the constructs will be evaluated in transient assays and suitable candidate clones will be transformed into Arabidopsis and citrus plants to test for phloem-specific expression. These promoters will be used to express resistance proteins (R proteins) and R protein mutants in an attempt to confer resistance to Liberibacter infection. Due to the potential of R proteins to interfere with normal growth and development of the plant, their expression will be limited to the phloem tissues, the site where the pathogen resides.

2- Several R proteins are being cloned for expression in Arabidopsis and citrus plants. Attenuated mutants of these proteins will be first expressed in the transient assay using Arabidopsis leaf mesophyll protoplasts to evaluate their effects on normal cellular function. Expression of these proteins will be driven by the phloem-specific promoters cloned in objective 1 above.