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	7/9/09

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

Grafted plants ready to be challenged with HLB

TITLE and CONTACT INFORMATION

Proposal Title Evaluate Differences in Response to HLB by Scions on Different Rootstocks

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Phone 352.392.4711x221	*Project Duration (years)* 3 *Year of Project* 2
Organization University of Florida	*Total Direct Funds (current year)* $55,000

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

The objective of this project is to determine if Carrizo rootstocks, either wild type or overexpressing the Arabidopsis NPR1 gene, and so having an enhanced, inducible defense response, have any effect on gene expression and/or the defense response of wild type (non transgenic) grapefruit scions to HLB. It has long been recognized in the traditional growing of citrus that rootstock selection has a large effect on scion phenotype. However, it is not understood at the molecular level how rootstocks provide their advantages or disadvantages. For this purpose we have propagated transgenic Carrizo rootstock plants (lines 776, 854 and 857) that express the AtNPR1 gene. This gene is central in plant defense and these lines also show enhanced expression of the marker PR1 gene. Additionally, one transgenic line that lacks AtNPR1 expression and PR1 overexpression (line 884) and one transformed but nontransgenic line (i.e. lacks the AtNPR1 transgene, line 859) and wild type Carrizo planst were also propagated as negative controls. These lines have been grafted with wild type 'Duncan' grapefruit. Other controls consist of nongrafted clones of AtNPR1 Carrizo (all lines mentioned above), wild type Carrizo, and non grafted grapefruit. The plants are being maintained in a containment facility at UF in Gainesville. We have also multiplied our HLB inoculum in 'Duncan' grapefruit. The next step is to challenge the different graft combinations and to examine them for phenotype and gene expression with and without HLB challenge.