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)

Transgenic plants characterized for SAR gene expression and

Proposal Title

Evaluate Differences in Response to HLB by Scions on Different Rootstocks

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
7/15/10	Citrus Research and Development Foundation	Transgenic/Metagenomic Mediation of Resistance

REPORT UPDATE (500 words; summarize your accomplishments)

Objective: Determine if Carrizo rootstocks, either wild type or over-expressing the Arabidopsis NPR1 gene (with 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. Some transgenic 'Carrizo' citrange lines (lines 854, 857, 859 and 884) transformed with the AtNPR1 were produced in Year 1 of this project. In this quarter we were able to start to propagate new transgenic lines from cuttings: 757, 761, 763, 775, 854, 857, 890, 896 and 897, all transformed with the AtNPR1 (the plants were now large enough to propagate). We have also identified sequences for several additional citrus genes that are associated with SAR, including AZI1, BLI, CHI, R13032, R20540, RAR1 and SGT1. These genes were preciously undescribed for citrus, however our microarray studies indicated that these sequences were differentially regulated by chemical and pathogen treatment. R13032 and R20540 belong to the NPR1/NPR3 family of genes in citrus and our experiments show they are all differentially expressed during SAR. Objective 1 of this project proposed to compare the response of AtNPR1 transgenic plants vs. wild type plants to the treatment of the SAR inducer salicylic acid (SA). This has been done with the first set of transgenic lines but we wish to repeat the experiment when the new plants have been propagated so we have more replications.

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Organization University of Florida

Contract Number NAS145

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

Total Funds (current year) $55,000.00

SUBMIT REPORT

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.