CITRUS ADVANCED TECHNOLOGY PROGRAM

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

SELECT PERIOD December 2013

(●) *Quarterly Report* ( ) *Final*

Proposal Title

Study the role of basal defense and chemical treatments in the response of citrus to HLB

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
1/30/14	Citrus Research and Development Foundation	Infection Consequences

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

We initiated an Illumina NextGen DNA sequencing project comparing 'Sun Chu Sha' mandarin (HLB tolerant) and 'Duncan' grapefruit (HLB sensitive) infiltrated with Candidatus Liberibacter asiaticus flagellin 22 (CLas-flg22) peptide and water control. Between 42 and 63 millions of pare-end reads were generated from our six cDNA libiaries per genotype (three replicates for CLas-flg22 treatment and control, respectively). Using Citrus clementina genome as the reference, an average of 45% of reads for each sample were uniquely mapped reads. It was shown that over 700 genes were differentially expressed in 'Sun Chu Sha' mandanrin due to the treatment of CLas-flg22. In contrast, only 1 gene is differentially expressed in 'Duncan' grapefruit. Interestingly, in our other project comparing the effect of flg22 of citrus canker causal bacteria Xanthomonas citrus subsp. citri (Xcc-flg22) showed that a much more extensive transcript reprogramming was triggered in both 'Sun Chu Sha' (over 2600 genes) and 'Duncan' (over 1300 genes), suggesting a weaker defense eliciting ability of CLas-flg22 than Xcc-flg22's. Functional analysis of CLas-flg22 affected genes in the two citrus genotypes is underway.

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Project Number

Project Duration (years) *Year of Project*

Total Funds (current year)

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.