CITRUS ADVANCED TECHNOLOGY PROGRAM

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

SELECT PERIOD June 2015

(●) *Quarterly Report* ( ) *Final*

Proposal Title

Development of Technologies Important for Creation and Commercialization of Transgenic HLB Resistant Citrus

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
8/30/15	Citrus Research and Development Foundation	Transgenic/Metagenomic Mediation of Resistance

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

The main accomplishments during this quarter:

We repeated and confirmed the effects of K and I genes on genetic transformation for cultivars Valencia and Washington oranges and observed drastic increases in transformation efficiencies if compared to a conventional Ti-plasmid vector containing no K or I gene. We have confirmed that the K and I genes can drastically enhance transformation efficiencies of juvenile explants of 5 different citrus cultivars. We started test the effects of the K gene on transformation efficiency of a lemon cultivar. Lemon is difficult for genetic transformation.

Our major efforts have been in testing the effects of the K and I genes and other factors on mature tissues. We used K and I genes to do genetic transformation of mature 'Pineapple' orange. The K gene resulted in about two fold increases in transformation efficiency while the I gene produced about three fold increases in efficiency compared to control vector. We have also started testing effects of other factors on transformation of mature tissues in combination with the K gene. We have made some significant progress but microbial contaminations of adult tissues harvested from greenhouse grown trees have sometimes caused problems for us. One example is that we have repeated and confirmed the effects of the transport of an endogenous plant hormone in explants on shoot regeneration efficiency. We observed that manipulating that process improves shoot regeneration and transformation efficiency of juvenile citrus explants. We are testing the effects of the same manipulation on transformation efficiency of adult tissues of citrus.

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Project Number 749

Project Duration (years) 1 *Year of Project* 3

Total Funds (current year) $78,862.00

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

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.