CITRUS ADVANCED TECHNOLOGY PROGRAM

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

SELECT PERIOD March 2016

(●) *Quarterly Report* ( ) *Final*

Proposal Title

Functional disruption of the NodT outer membrane protein of Candidatus Liberibacter asiaticus for rootstock-mediated resistance to citrus greening using a phloem-directed, single-chain antibody

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
April 25, 201	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.)

During this reporting period (January, February, and March, 2016), control plants that have been through the transformation process, but not containing the transgene, were generated and sent to Penn State, and they are growing well at the Penn State location. These plants are the best comparison to the FLT-antiNodT plants in terms of plant behavior and disease resistance. We call these the "transformation control" trees.

The transgenic plants being produced for this project continued to grow at two different locations in secure greenhouses and growth chambers. Seven independently-transformed citrus plants carrying the FLT-antiNodT fusion protein expression construct are growing in Dr. McNellis' lab at the Pennsylvania State University at University Park, PA, and an additional eight independently-transformed citrus plants carrying the FLT-antiNodT fusion protein expression construct are growing at Dr. Tim Gottwald's lab at the United States Horticultural Laboratory in Fort Pierce, Florida.

Dr. McNellis has applied for and been granted an APHIS BRS permit to send propagated FLT-antiNodT plants to Florida for replicated testing for HLB resistance in Dr. Gottwald's lab. However, before sending the plants, we must obtain the needed Florida state permit (FDACS 08084), and this is in progress.

Dr. Janice Zale (University of Florida Mature Citrus Transformation Facility, Lake Alfred) transformed 'Hamlin' sweet orange and the 'Carrizo' rootstock with the FLT-antiNodT expression construct, and we received these plants at Penn State in early April, 2016. During the next reporting period, we will test these plants for expression of the FLT-antiNodT anti-HLB protein. Dr. McNellis will also produce rooted cuttings of all these lines for later testing for HLB resistance in Florida.

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Organization The Pennsylvania State University

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Total Funds (current year) $55,000