CITRUS ADVANCED TECHNOLOGY PROGRAM

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

SELECT PERIOD December 2015

(●) *Quarterly Report* ( ) *Final*

Proposal Title

Development of Supersour and Other Promising Rootstocks for Florida

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
1/15/16	Citrus Research and Development Foundation	Conventional Citrus Breeding

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

Excellent progress was made in continuing the development of new hybrid rootstocks for the Florida citrus industry. As requested by CRDF, project 15-002 will place highest priority on hybrid rootstocks being considered for release to growers over the next six years, including about 400 Supersour-type rootstocks. It is expected that at least one of these SuperSour rootstocks will be released within three years, with more to be released in the following years as further information is collected from ongoing field trials.

During this quarter, six new replicated rootstock field trials were planted, including trials on flatwoods and ridge sites. Emphasis in the new trials was on SuperSour selections, although standard rootstocks and previously released USDA rootstocks were included to allow good comparisons for relative assessment of field performance. The new plantings included two trials with Hamlin scion, two with Valencia scion, and two with specialty scion cultivars. Analysis of results from previously established trials indicates that HLB introduces additional variability to trials that requires more than the previously effective five or six statistical replicates to provide clear evidence of rootstock performance. Based on this observation, new USDA rootstock trials will usually include more than six statistical replications, regardless of the number of trees per replication. Using statistical comparisons is essential to develop reliable information about relative rootstock performance in field trials.

During this quarter, trees in field trials were scored for health, HLB symptoms, and samples were collected from some groups for PCR detection of Las infection. Typically, trees in plantings with good ACP control remain nearly free of Las infection for the first 1-2 years, regardless of surrounding tree infection. Because of this, rootstock HLB tolerance can only be assessed when trees in field trials are more than 2-3 years old, or when special steps are taken to ensure trees become infected earlier. During this quarter, yield and fruit quality data were taken from 8 rootstock field trials with early maturing scion varieties. Analysis was completed on data from several established trials to assess relative rootstock performance, rootstock effects on yield, fruit quality, tree size, and HLB symptom development. A comprehensive presentation on standard and new rootstocks was made at the Florida Citrus Show. A new publication was prepared, providing a comprehensive comparison of the new USDA rootstocks with other standard rootstocks, and will be submitted for publication in the next quarter.

Trees in the USDA nursery on a large number of advanced rootstock selections, especially SuperSour-type, were continued in propagation for field trials to be planted in 2016. Nursery experiments were conducted with promising new rootstocks to determine nursery-related traits important for commercial use. Cooperative work continued with commercial nurseries involved with micropropagation, to facilitate more rapid deployment of the best new rootstocks. Greenhouse experiments continued to assess rootstock tolerance to HLB, CTV, and high pH.

Cooperative work continued with UF researchers and a commercial nursery to propagate trees for use in multiple rootstock field trials sponsored by the HLB MAC program. Trees from the commercial nursery are scheduled to be planted into six cooperative field trials in 2016, and six more field trials in 2017.

PI First Name Kim

PI Last Name Bowman

Email kim.bowman@ars.usda.gov

Phone 7724625920

Organization USDA, ARS, USHRL

Project Number 15-002

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

Total Funds (current year) $314,570.00

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

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