CITRUS ADVANCED TECHNOLOGY PROGRAM

QUARTERLY & FINAL PROGRESS REPORT FORM: Control of Citrus Greening, Canker & Emerging Diseases of Citrus

▶ SELECT PERIOD December 2019

● Quarterly Report ○ Final

Proposal Title

Evaluation of citrus rootstock response to HLB in large-scale existing field trials

Today's Date 01/13/2020

Sponsoring Organization (drop-down) Citrus Research and Development Foundation

Category (drop down) Plant Improvement

ABSTRACT (750-word Executive Summary-public report-do not disclose proprietary information or intellectual property)

Tree evaluations at the two locations (Fort Basinger and Lake Wales) were continued during the fourth quarter of 2019. Hamlin and Valencia trees in both locations were rated for canopy density, canopy color, and foliar HLB disease symptoms. Ratings were conducted on a scale of 1 to 5 on each side of a tree as outlined in the appendix of the RFP. The average ratings for HLB foliar disease symptoms ranged from 1.2 to 1.6, indicating an overall low percentage of disease symptoms. Although significant differences were found among rootstocks, they varied depending on the location and the scion variety. The average ratings for canopy density and canopy color ranged from 4.0 to 4.9, indicating a healthy canopy. No significant differences were found among rootstocks for the canopy color ratings. Canopy density ratings varied significantly among rootstocks, but results varied depending on the location and the scion variety.

In addition to the tree health ratings, leaves were collected from trees in all four trials and sent to a service lab (Waters lab) for leaf nutrient analysis. For many of the macro- and micro-nutrients significant differences were found among rootstocks, but there was no clear trend. For all nutrients, significant differences were also found between the two locations and between the two scion varieties.

For the Hamlins, a subset of fruit from each experimental unit was collected in December at both the Lake Wales and Fort Basinger location. Fruit were analyzed for the following quality parameters: fruit weight, % juice, % solids, % acid, brix/acid ratio, and juice color. Fruit quality analyses were conducted at the CREC Processing Pilot Plant. Overall, extensive fruit drop was observed, which will be assessed in January immediately before the harvest. Weight per fruit was 156 g (5.5 oz) on average. The average percentage of juice was 54.5%. Average acid was 0.47-0.50% and average TSS was 8.7-9.1. The resulting brix/acid ratio was 17.4-19.5. For all measured parameters significant differences were found among rootstocks but results also varied between the two locations.

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