CITRUS ADVANCED TECHNOLOGY PROGRAM

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

▶PROJECT QUARTER END April 2025 ◉ *Quarterly Report* ○ *Final*

Proposal Title

Understanding the HLB tolerance and reduced fruit drop in Parson Brown and evaluation of other early season sweet oranges

Today's Date	Sponsoring Organization (drop-down)	Category (drop down)
05/31/2025	Citrus Research and Development Foundation	Plant Improvement

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

1. Work done this quarter

In this quarter, physiological analyses was conduted on samples. Results indicated reduced callose deposition and starch accumulation in `Parson Brown,' in contrast to increased levels in `Hamlin' and `Roble.' This dynamic regulation was characterized by decreased expression of callose synthase and increased expression of β-1,3-glucanase, which helped maintain phloem integrity. The observed tolerance of `Parson Brown' oranges to citrus greening disease is attributed to a complex cascade of defense mechanisms rather than a single genetic factor. This highlights the importance of traditional breeding methods, as hybrids can inherit a wide range of defense traits from their parent plants. A publication has been submitted for peer review and will be shared with CRDF as soon as available in final print.

2. Please state what work is anticipated for next quarter:

N/A

3. Please state budget status (underspend or overspend, and why):

We are on track with the budget spending

PI First Name Manjul

PI Last Name Dutt

Email manjul@ufl.edu

Phone 8639568679

Organization UF-CREC

Sponsor Project Number 22-019

Project Duration (years) 2 *Year of Project* 2

% Completion of Objectives (FDACS requirement) 95.00%

CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.