# CITRUS ADVANCED TECHNOLOGY PROGRAM

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

▶**PROJECT QUARTER END** July 2024 ◉ *Quarterly Report* ○ *Final*

Proposal Title

A combined approach to reduce CLas and reverse symptoms in orchard trees

Today's Date: 08/01/2024

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

Category (drop down): Other


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

1. Please state project objectives and what work was done this quarter to address them:

Objective 3.1: Evaluate the modified SoD2* for enhanced expression levels and antimicrobial activities using the CTV vector. Five CTV constructs (CTV-SoD2*, CTV-Cmpp16-SoD2* CTV-SoD2*-Cmpp16-SoD2*, CTV-p13-SoD2* and CTV-SoD2*-p13) were proposed for testing SoD2* expression levels and antimicrobial activities. This quarter, all five constructs were successfully generated, introduced into Agrobacterium, and inoculated into Nicotiana benthamiana. Systemic infection of all five constructs in N. benthamiana was confirmed via RT-PCR. Western blot (WB) analysis and enzyme-linked immunosorbent assay (ELISA) for SoD2* levels are currently in progress. To prepare for bark-flap inoculation of CTV constructs into citrus, Citrus macrophylla plants are currently being propagated in the greenhouse.

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

We will conduct Western blot (WB) analysis and enzyme-linked immunosorbent assay (ELISA) to quantify SoD2* levels in Nicotiana benthamiana and Citrus species. We will also extract virions from CTV positive N. benthamiana plants, followed by bark-flap inoculation of CTV constructs into Citrus macrophylla. Subsequent testing will be performed to confirm CTV infection in citrus. CTV-positive citrus plants will then be propagated for in-house trials to assess their resistance to HLB challenge.

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

The budget is currently on track, with expenditures proceeding as planned. All necessary resources have been procured on schedule, and project milestones are being met within the allocated budget.

4. Please show all potential commercialization products resulting from this research, and the status of each:

The CTV vectors expressing modified SoD2* will be potential commercialization products. Silvec has received a permit from USDA to apply its products in all Florida counties and is expecting regulatory approval from EPA in late 2025 which would allow full commercial sales in Florida in 2026.



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Organization: Silvec Biologics Inc.


Sponsor Project Number: #23-044

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

% Completion of Objectives (FDACS requirement): 25.00%




CITRUS RESEARCH AND DEVELOPMENT FOUNDATION, INC.