

Current Research Objectives

Dr. Arnold Schumann, Professor, Soil and Water Sciences, CREC
(schumaw@ufl.edu)

Research topic: Comprehensive psyllid and HLB management with Citrus Under Protective Screen (CUPS)

Primary Research Objective(s): (1) Eliminate and exclude psyllids from citrus grown in CUPS, (2) develop sustainable IPM programs for citrus in CUPS, (3) develop autonomous robotic scouting tools for pests and diseases in CUPS, (4) identify suitable rootstocks, scions, and other horticultural enhancements for maximizing fruit production in CUPS, and (5) provide evidence that this approach is an economically viable near-term alternative to grow citrus in the context of HLB.

Research Goal: Develop a commercial screen house citrus production system that can profitably grow HLB-free fresh citrus of premium quality in HLB-endemic regions of the USA.

Outcomes to date: Psyllids and HLB have been successfully excluded from citrus trees planted from clean nursery stock and grown in CUPS for 4.0 years. During that time, cumulative red grapefruit yields averaged 2,135 boxes/acre. Cumulative tangerine yields were lower due to alternate bearing, averaging 1,330 boxes/acre. Fruit were HLB-free, with 100% pack-out for the fresh market, and 60% was premium grade, fetching prices as high as \$37/box.

A number of Florida growers and at least one cooperative packing house have implemented CUPS as a viable commercial solution for growing high quality healthy fresh fruit in Florida. Grower CUPS acreage in 2019 is expected to be more than 300 acres, with plans for more expansion. A UF/IFAS quick guide to CUPS was produced for growers:

<http://edis.ifas.ufl.edu/pdf/HS/HS130400.pdf> Grower web sites featuring their CUPS projects are <http://www.precisioncitrus.com/> and <http://dun-d.com/citrus-under-protective-screen/> CREC, UF/IFAS developed and installed weather and soil moisture monitoring stations specifically for grower CUPS installations to optimize their citrus irrigation management. A live station can be viewed at <http://166.130.8.210:4252/weewx/index.html>

Funding source for this objective(s): SCRI-SCBG, USDA-CDRE