

# ESTABLISHING CITRUS RESEARCH TRIALS TO SUPPORT THE GROWING INDUSTRY IN GEORGIA AND THE SOUTHEAST

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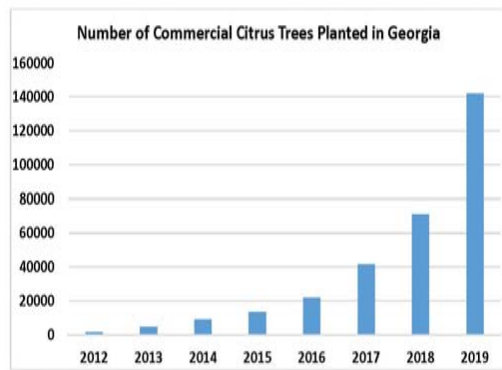
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## NEED/GOAL STATEMENT

Commercial citrus is a new but rapidly expanding industry in Georgia. Little research data is available on satsumas and other cold hardy citrus in the southeast to guide growers. Citrus trees are custom grown for research trials and can take two years to produce. Lowndes County Extension has established four unique research trials with two more in development which will provide growers with research based information to guide their decisions on selecting rootstocks, early maturing satsuma varieties, and new cold hardy citrus hybrids to support this rapidly emerging industry. The short term goal was to plan, develop, and establish citrus research plots while the long term goal is to collect data to provide information to growers in Georgia and other southeastern states.



Trial #1	Trial #2	Trial #3	Trial #4	Trial #5 & #6
OWARI SATSUMA ON 10 ROOTSTOCKS (6 repetitions)	EARLY MATURING SATSUMA VARIETIES (6 repetitions)	ORANGE FROST(OFF) & ARTIC(AF) (6 repetitions)	SUGAR BELLE ON 4 ROOTSTOCKS (5 repetitions)	SATSUMA & TANGO ON NEW HLB TOLERANT ROOTSTOCKS
Planted 2014	Planted 2016	Planted 2018	Planted 2018	(2020)
Swingle	Okitsu Wase	OF/Rubidoux	SB/US-897	US-1279
Sour Orange	Miho Wase	OF/US-852	SB/US-942	US-1282
Cleopatra	Ueno	AF/Rubidoux	SB/Rubidoux	US-1283
Rubidoux	Owari 25	Owari/Rubidoux	SB/US-852	US-1516
US-897	Brown Select			UFR-6
US-852	Miyagawa			UFR-17
US-942	Iveriya			US-942
US-812	Iwasaki			US-812
X-639	Sweet Frost			US-1777
Kuharski	Xie Shan			Rubidoux

## OBJECTIVES

- Compare satsuma cold hardiness, yield, disease resistance, and fruit quality on new citrus rootstocks.
- Find the best early maturing satsuma varieties for Georgia and the southeast.
- Evaluate newly released citrus hybrids that have potential in Georgia on newer rootstocks.

## METHODS

- Collaborate with USDA-ARS in Ft. Pierce Florida and National Germplasm Repository for Citrus in Riverside California.
- Cooperate with USDA certified citrus nurseries in Florida: Briteleaf, Rucks, & Agromillora to grow rootstocks and research trees.
- Negotiated trial agreement between Greenleaf Nursery of Oklahoma and the University of Georgia Board of Regents to propagate satsuma hybrids.
- Propagated trees for trials at Loch Laurel Nursery in Georgia using budwood that could not be shipped to Florida for propagation.

## RESULTS

- Obtained "Owari" satsuma trees on 10 standard and newly developed rootstocks.
- Successfully propagated early maturing satsuma varieties from California for a trial.
- Successfully propagated 2 potentially cold-hardy satsuma hybrids "Artic & Orange Frost", developed in Texas for trial.
- Obtained the potentially cold-hardy University of Florida patented variety "Sugar Belle", on 4 rootstocks for trial.
- 9 new HLB tolerant rootstocks have been tissue cultured for a trial to be planted in 2020.

## IMPACT

- Satsumas are being evaluated on new rootstocks that have never been tested before. Three year preliminary data shows promising new rootstocks.
- New hybrid satsuma varieties are being evaluated in the southeast for the first time.
- "Sugar Belle" which has HLB tolerance, is being evaluated for the first time in Georgia.
- Early maturing satsuma varieties never tested in the southeast have begun to yield fruit data as of 2019.
- Tango mandarins and Silverhill satsumas are being grown on HLB tolerant rootstocks for a trial that will provide data as HLB encroaches on Georgia growers.

