



Citrus Research and  
Development Foundation, Inc.

**NOTICE OF A MEETING  
OF THE  
CITRUS RESEARCH AND DEVELOPMENT FOUNDATION  
SELECT COMMITTEE ON PLANT IMPROVEMENT  
Tuesday, February 16, 2021 – 1:00 pm EST**

**TIME AND PLACE OF MEETING**

A TELECONFERENCE meeting of the Select Committee on Plant Improvement of the Citrus Research and Development Foundation, Inc. will be held on **Tuesday, February 16, 2021 at 1:00 p.m. EST.** This meeting is accessible via Zoom Video Conferencing. To join Zoom Meeting visit <https://ufl.zoom.us/j/91367570774> and enter the Meeting ID: 913 6757 0774 or by dialing 646-558-8656 and entering participant access code/Meeting ID 913 6757 0774 when prompted.

To avoid interruptions/distractions during the call, please be mindful of the following:

- When speaking, please say your name so that the minutes can be properly captured.
- Please mute your line whenever you are not speaking to prevent background noise from disrupting the meeting and ensure the best sound quality during the call.
- If you have any problems during your call, please text Audrey Nowicki at 412-554-5143 or Deidra Whatley at 863-412-1071, to try to help resolve the problem immediately.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting is asked to advise the Foundation at least 72 hours in advance by contacting Deidra Whatley by phone at (863) 956-8817 or by email at [d.whatley@citrusrdf.org](mailto:d.whatley@citrusrdf.org).

**CITRUS RESEARCH AND DEVELOPMENT FOUNDATION**  
**SELECT COMMITTEE ON PLANT IMPROVEMENT**  
**Tuesday, February 16, 2021 – 1:00 pm EST**

**AGENDA**

- A. Call to Order
- B. Roll Call/Determination of Quorum
- C. Update on CRDF rootstock trial Notice for Grower Participation \*
- D. Discussion of potential new scion trials
- E. Potential scion trials:
  - 1. CRDF scion trials
  - 2. NIFA grant
- F. Other Business
- G. Public Comments
- H. Adjournment

\* Materials

## CRDF Rootstock Trials Call for Grower Cooperators

**February, 2021**

The Citrus Research and Development Foundation (CRDF) is establishing a new project with the objective of evaluating the most promising citrus rootstocks in grower field trials, which are projected to be planted in the spring or summer of 2022. The goal of the new trials will be to identify plant material with the traits needed by growers to realize the highest possible pounds solids per acre and increased tree viability in the HLB era.

The CRDF rootstock trials will be large-scale field trials assessing new rootstock varieties in the final phase of evaluation. Trials will be scientifically designed and set up for powerful data analysis to identify the best performing varieties. Sixteen rootstocks have been chosen for evaluation based on superior performance in small-plot field trials.

Of these 16 rootstocks, some of the new plant material will have been previously unavailable for commercial use and others will be known rootstocks which will be used as a standard for comparison. There will be 3 scions used: Valencia 1-14-19, Vernia UF 35-15, and Hamlin 1-4-1. These scions will be combined with the 16 rootstocks resulting in 48 rootstock/scion combinations. Each rootstock scion combination will be replicated 5 times for a total of 240 plots in the trial. Each plot will have 20 trees per rootstock/scion combination. The total complement of trees for each trial site is 4,800. At about 200 trees per acre, each site will require about 24 acres.

Below is a list of all the candidate rootstocks for this project:

<b>USDA Candidate Rootstocks</b>	<b>IFAS Candidate Rootstocks</b>	<b>Testable Rootstocks</b>	<b>Standard Rootstocks</b>
US 1282	UFR 5	US 812	X 639
US 1283	Orange 14	C 54	US 942
US 1281	Blue 1		Kuharski
US 1279			Swingle (sour on the east coast)
US 1284			
US 1516			
Super Sour 2			

A critical aspect of any research trial is the identification of growers willing to host a trial site. Initially CRDF will require three trial sites for this project. The goal is to identify grower cooperators willing to host a trial in each of the three eco-regions of the Florida citrus industry (Ridge, East Coast, and Flatwoods).

Growers selected to host a trial would be provided trees at no cost and a supplement for tree planting and installation of tree wraps. CRDF personnel and subcontractors would require regular access to the field trial planting to conduct evaluations, plant tissue and soil sampling, tree canopy rating, and per plot yield evaluation once the trees reach bearing age. In addition, CRDF will plan and conduct an annual Field Day at a selected site to disseminate data. As well, the data will be shared on the [citrusrdf.org](http://citrusrdf.org) web site.

Grower cooperators would be expected to uniformly apply production inputs to support the trees from establishment through to mature tree production. Production practices are expected to conform with UF-IFAS recommendations for irrigation, drainage, fertilization and pest control. No special treatments would be allowed in the trial which could possibly invalidate the rootstock trial data.

Growers interested in participating and hosting a trial site should submit a letter with their contact information, site location, soil type and acreage available by email to [catp@citrusrdf.org](mailto:catp@citrusrdf.org).



Please provide analyzed data values for the following factors. An in-trial standard will be used to evaluate the nominated scion's performance. If the nominated scion has been evaluated in multiple eco-regions or trials and you wish to submit data from multiple field trials, please provide data for an appropriate standard scion with similar maturity in each field trial location.

\*Please use the most current analyzed data for columns asking for annual values and indicate the year in which the data was collected in the narrative box below.

Breeder Ranking of Nominated Scion	Classification	Rootstock	Scion	County	Location name	Availability (certified or non-certified)	Planting Date (month and year)	No. of trees for recommendation	Is the nominated scion part of a MAC trial? (indicate MAC trial by name)	Scion Maturity Window	Canopy Volume (M^3) *	Tree Survival (%)	Average Annual Yield per Tree (Kg) *	Average Cumulative Yield per Tree and over how many years (Kg)	Average Annual Brix*	Average Annual Acid *	Average Annual Ratio *	Average Annual Pound Solids per Box *	Disease Susceptibility (known significant disease issues)
1	nomination	942	Early Vernia	St. Lucie	Picos 5	Clean budwood available	May-15	5		December	3.5	98	20	65 - 3 years	10	0.62	16.1	6.1	
	standard	942	Vernia UF 35-15	St. Luice	Picos 5	Clean budwood available	May-15	5		January	3.2	100	18	60 - 3 years	9	0.61	14.75	6	
1	nomination	Carrizo	Early Vernia	Polk	Peace River 1	Clean budwood available	Jun-14	3		December	4.1	100	40.5	88 - 4 years	11	0.59	18.6	6.2	
	standard	Carrizo	Vernia UF 35-15	Polk	Peace River 1	Clean budwood available	Jun-14	6		January	3.7	100	39.5	79 - 4 years	11	0.6	18.3	6	
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. The narrative should contain observations made that support the submitted data. Any observation about pest and disease pressure and site factors should be discussed. Attachments can be submitted for leaf nutrient analysis and fruit quality analysis.

Please provide analyzed data values for the following factors. An in-trial standard will be used to evaluate the nominated scion's performance. If the nominated scion has been evaluated in multiple eco-regions or trials and you wish to submit data from multiple field trials, please provide data for an appropriate standard scion with similar maturity in each field trial location.

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1	nomination	own root	R25-T2 Vernia	Osceola	Lee Groves Mathew Block 2019	No, but in thermotherapy chamber	Mar-14	1	No	December	n/a	100	n/a	n/a	10.14	0.52	19.5	4.76	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2019		Mar-14	48		mid-January	n/a	100	n/a	n/a	9.95	0.79	12.88	5	typical Vernia
1	nomination	own root	R25-T2 Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	1		December	n/a	100	n/a	n/a	9.53	0.59	16.15	4.46	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	48		mid-January	n/a	100	n/a	n/a	9.79	0.76	13.13	4.8	typical Vernia
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. This nomination is a true early-maturing Vernia sweet orange clone derived from a nucellar seedling of previously developed superior Vernia somaclones. It has repeated two consecutive seasons for full maturity the first week of December. Data is from juvenile trees, so soluble solids are expected to increase as trees age. The clone is currently in the Dawson Thermotherapy Chamber and we expect to have a source of pathogen free budwood in just a few months.

Please provide analyzed data values for the following factors. An in-trial standard will be used to evaluate the nominated scion's performance. If the nominated scion has been evaluated in multiple eco-regions or trials and you wish to submit data from multiple field trials, please provide data for an appropriate standard scion with similar maturity in each field trial location.

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2	nomination	own root	R25-T12 Vernia	Osceola	Lee Groves Mathew Block 2019	No, but in thermo-therapy chamber	Mar-14	1	No	December	n/a	100	n/a	n/a	9.46	0.62	15.26	4.63	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2019		Mar-14	48		mid-January	n/a	100	n/a	n/a	9.95	0.79	12.88	5	typical Vernia
2	nomination	own root	R25-T12 Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	1		December	n/a	100	n/a	n/a	9.17	0.58	15.81	4.4	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	48		mid-January	n/a	100	n/a	n/a	9.79	0.76	13.13	4.8	typical Vernia
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3	nomination	own root	R25-T5 Vernia	Osceola	Lee Groves Mathew Block 2019	No, but in thermotherapy chamber	Mar-14	1	No	December	n/a	100	n/a	n/a	10.3	0.66	15.61	5.2	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2019		Mar-14	48		mid-January	n/a	100	n/a	n/a	9.95	0.79	12.88	5	typical Vernia
3	nomination	own root	R25-T5 Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	1		December	n/a	100	n/a	n/a	9.55	0.55	17.36	4.64	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	48		mid-January	n/a	100	n/a	n/a	9.79	0.76	13.13	4.8	typical Vernia
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4	nomination	own root	R26-T4 Vernia	Osceola	Lee Groves Mathew Block 2019	No, but in thermo-therapy chamber	Mar-14	1	No	December	n/a	100	n/a	n/a	9.87	0.61	16.18	4.84	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2019		Mar-14	48		mid-January	n/a	100	n/a	n/a	9.95	0.79	12.88	5	typical Vernia
4	nomination	own root	R26-T4 Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	1		December	n/a	100	n/a	n/a	10.14	0.72	14.06	5.08	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	48		mid-January	n/a	100	n/a	n/a	9.79	0.76	13.13	4.8	typical Vernia
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5	nomination	own root	R26-T14 Vernia	Osceola	Lee Groves Mathew Block 2019	No clean budwood available	Mar-14	1	No	December	n/a	100	n/a	n/a	10.8	0.73	<b>14.79</b>	5.31	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2019		Mar-14	48		mid-January	n/a	100	n/a	n/a	9.95	0.79	12.88	5	typical Vernia
5	nomination	own root	R26-T14 Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	1		December	n/a	100	n/a	n/a	10.14	10.65	<b>15.9</b>	4.97	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	48		mid-January	n/a	100	n/a	n/a	9.79	0.67	13.13	4.8	typical Vernia
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6	nomination	own root	R26-T10 Vernia	Osceola	Lee Groves Mathew Block 2019	No clean budwood available	Mar-14	1	No	Decemb er	n/a	100	n/a	n/a	10.1	0.67	15.07	4.99	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2019		Mar-14	48		mid-January	n/a	100	n/a	n/a	9.95	0.79	12.88	5	typical Vernia
6	nomination	own root	R26-T10 Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	1		Decemb er	n/a	100	n/a	n/a	9.98	0.61	16.36	4.69	typical Vernia
	trial mean	own root	Vernia	Osceola	Lee Groves Mathew Block 2020		Mar-21	48		mid-January	n/a	100	n/a	n/a	9.79	0.67	13.13	4.8	typical Vernia
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7	OLL sweet orange	White 3	OLL 13W-4- 13	Osceola	Frank's block 13W	No clean budwood available	Jul-13	1	No	January	n/a	100	n/a	n/a	10.56	0.8	<b>13.8 (Dec. 7,2020)</b>	5.34	better HLB tolerance than Valencia
										March									
7	OLL sweet orange	White 3	OLL 13W-4- 13	Osceola	Frank's Block 13W		Jul-21	1	No	January					12.42	0.65	<b>19.09 (March 1, 2020)</b>	6.72	
	OLL sweet orange	White 3	OLL-8	Osceola						March					11.85	0.84	14.11 (March 1,2020)	6.63	
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. OLL 13W-4-13 is a new OLL selection that matures significantly earlier than all other OLL clones, with a harvest date of January 1. It is a nucellar seedling derived from somaclone OLL-6. Fruit quality is outstanding, and HLB tolerance so far is very good under the modified nutrition program being utilized. This selection can move the OLL harvest date up 6-8 weeks. The selection is still juvenile, and additional improvement in fruit quality is expected as trees age.

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8	OLL sweet orange	White 3	OLL 13W-9-33	Osceola	Frank's Block 13W	No clean budwood available	Jul-21	1	No	January	n/a	100	n/a	n/a	12.41	0.73	17.0 (March 1, 2020)	7.83	
	OLL sweet orange	White 3	OLL-8	Osceola	Karen's Block 13E		Jul-21	2		March	n/a	100	n/a	n/a	11.85	0.84	14.11 (March 1, 2020)	6.63	
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. This is a second selection from the OLL seedling trial, featuring both earllier maturity (high ratio) and high brix and lbs. solids. It is a nucellar seedling derived from OLL6. These are exceptionally high numbers for a juvenile tree.

Please provide analyzed data values for the following factors. An in-trial standard will be used to evaluate the nominated scion's performance. If the nominated scion has been evaluated in multiple eco-regions or trials and you wish to submit data from multiple field trials, please provide data for an appropriate standard scion with similar maturity in each field trial location.

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9	OLL sweet orange	UFR-6	OLL 13W- 1-22	Osceola	Frank's Block 13W	No clean budwood available	Jul-21	1	No	January	n/a	100	n/a	n/a	13.99	1.06	13.20 (March 1, 2020)	7.76	
	OLL sweet orange	UFR-6	OLL-8	Osceola	Karen's Block 13E		Jul-21	2		March	n/a	100	n/a	n/a	12.94	0.9	14.38 (March 1, 2020)	7.36	
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. This is the third selection from the OLL seedling trial, featuring very high brix and lbs. solids. It is a nuellar seedling derived from OLL-10. These are exceptionally high numbers for a juvenile tree.

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Breeder Ranking of Nominated Scion	Classification	Rootstock	Scion	County	Location name	Availability (certified or non-certified)	Planting Date (month and year)	No. of trees for recommendation	Is the nominated scion part of a MAC trial? (indicate MAC trial by name)	Scion Maturity Window	Canopy Volume (M^3) *	Tree Survival (%)	Average Annual Yield per Tree (Kg) *	Average Cumulative Yield per Tree and over how many years (Kg)	Average Annual Brix*	Average Annual Acid *	Average Annual Ratio *	Average Annual Pound Solids per Box *	Disease Susceptibility (known significant disease issues)
10	OLL sweet orange	UFR-5	OLL-5	Osceola		No clean budwood available	July, 2013	36	No	late	n/a	100	97.2 (2019/2020)	2.4 b/t	11.62	0.82	14.9	6.54	best HLB tolerance of OLL somaclones
	OLL sweet orange	UFR-5	OLL-8	Osceola				36					77.0 (2019/2020)	1.9 b/t	12.01	0.97	12.38	6.87	
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. Somaclone OLL-5 showed a significant yield increase on 15 of 17 rootstocks this past season (7-year old trees with no psyllid control). It was also the highest yielding OLL clone of eight OLL somaclones overall in the trial for the 2019/2020 season. Trees of OLL-5 also showed continuously improving health and growth, especially trees on UFR-2, which are now reaching the size where they will require ladders for harvest. Fruit size is also exceptional.

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11	hybrid	UFR-4	C4-7-29	Polk	Block 4	Just through PTP, limited bw. available	Apr-13	1	No	mid	43.4	100	n/a	n/a	15.19	0.88	17,26	7.98	Good HLB tolerance, better than oranges
		UFR-4	OLL-4	Polk	Trailer Park		Apr-17	10		late	38.3	100	n/a	n/a	11.34	0.72	15.75	5.89	
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. This is an orange-like hybrid, a seedless triploid from an interploid cross of Nules Clementine x [Page + Ortanique]. Fruit has fresh market crossover, as it can be peeled more easily than an orange. Juice has exceptional color and good flavor. Juice content is also high, but fruit is firm and could be shipped in standard sweet orange trucks. Fruit positively received in past fruit displays.

Please provide analyzed data values for the following factors. An in-trial standard will be used to evaluate the nominated scion's performance. If the nominated scion has been evaluated in multiple eco-regions or trials and you wish to submit data from multiple field trials, please provide data for an appropriate standard scion with similar maturity in each field trial location.

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12	hybrid		C4-8-25	Polk	Block 4	No clean budwood available, just into PTP	Apr-13	1	No	very early	n/a	100	35.6	n/a	11.75	0.44	26.7 (Dec. 7, 2020)	5.99	
	sweet orange		Vernia	Polk	Block 18		Mar-10	1		mid	n/a	100	34.4	n/a	10.94	0.92	11.89 (Dec. 7, 2020)	5.54	
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Please provide a narrative justifying the nomination of this scion or other information which could be used in selecting the scion for inclusion in a trial. This sweet orange-like selection is a seedless triploid from an interpid cross of SugarBelle x {Succari sweet orange + Murcott}. Fruit is very firm and **matures very early - could easily be processed in October/November**. Juice has very good flavor. Thus far, HLB tolerance is comparable to Vernia/Valencia. Fruit has good size, and would be amenable to being trucked to juice plants like oranges.

Please provide analyzed data values for the following factors. An in-trial standard will be used to evaluate the nominated scion's performance. If the nominated scion has been evaluated in multiple eco-regions or trials and you wish to submit data from multiple field trials, please provide data for an appropriate standard scion with similar maturity in each field trial location.

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13	hybrid		KE-6-4	Polk	Kinsey East	No clean budwood available, just into PTP	Apr-14	1	No	very early	n/a	100	40.4	n/a	10.1	0.48	21.04 (Dec. 7, 2020)	6.16	
	sweet orange		Vernia	Polk	Block 18		Mar-10	1		mid	n/a	100	34.4	n/a	10.94	0.92	11.89 (Dec. 7, 2020)	5.54	
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. This sweet orange-like selection is from a cross of a zygotic Ambersweet (via Bill Castle) x 4x Succari sweet orange (it is predominantly sweet orange). It is very early maturing, and could easiyy be processed in October/November to produce juice with exceptional color. 10% of this blended into any juice would raise early season color to grade A. Sensory analysis done by Tropicana indicated very good flavor (November, 2019). The selections also has good soluble solids, driven by a high juice content. The fruit is softer than Hamlin, but could still be shipped to juice plants in standard sweet orange trucks. HLB tolerance is comparable to sweet oranges, fruit drop has not been a problem.

Please provide analyzed data values for the following factors. An in-trial standard will be used to evaluate the nominated scion's performance. If the nominated scion has been evaluated in multiple eco-regions or trials and you wish to submit data from multiple field trials, please provide data for an appropriate standard scion with similar maturity in each field trial location.

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14	hybrid	Carrizo	1859	Polk	Riley	Just through PTP, very limited bw. available	Oct-03	1	No	Dec-Jan	n/a	100	n/a	n/a	n/a	n/a	n/a	n/a	good HLB tolerance
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. This selection is a seedless triploid orange-like hybrid from an interploid cross of SugarBelle x 4x sweet orange (2/3s sweet orange). Although no analytical data is provided herein, this selection has repeated as a favorite at multiple fruit displays, and juice at fruit displays was favored over all other included selections. Fruit has exceptional external and juice color, and has been requested for planting by multiple fresh fruit growers that have sampled it. We consider it the top 'mandorange' selection in the pipeline. The original tree has been consistently productive with HLB for more than 10 years, thus the selection has good HLB tolerance.

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15	Nomination	Carrizo	Valencia UF RBA-22-29	Polk	Riley	Certified	Oct-03	4	Eagle Lake CREC and Pantuso	Val	standard	100%	standard	standard	n/a	n/a	n/a	standard	Valencia with strong HLB tolerance since 2003
	Standard	Carrizo	Val.	Polk	Riley	N/A	Oct-21	dozens: dead	No										
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. This selection is a standard Valencia clone derived from budwood irradiation - it has shown good HLB tolerance for over 10 years, much better than standard Valencia; otherwise its behavior (yield and fruit quality) is typical of Valencia sweet orange. Propagations from the original field tree are mostly free of HLB.

Please provide analyzed data values for the following factors. An in-trial standard will be used to evaluate the nominated scion's performance. If the nominated scion has been evaluated in multiple eco-regions or trials and you wish to submit data from multiple field trials, please provide data for an appropriate standard scion with similar maturity in each field trial location.

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1	Nomination	Carrizo	Valencia UF 6-2-55	Polk	CREC	Certified	2004	1	Eagle Lake CREC , Pantuso	Dec-March		100%							good HLB tolerance for more than 10 years
1	Standard	Carrizo	Val.	Polk	Riley	N/A	Oct-21	dozens: dead	No										
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. 6-2-55 is a triploid sweet orange hybrid that has thrived at the CREC since the spread of HLB; it has demonstrated good HLB tolerance for more than 10 years. The juice of this hybrid was compared with Hamlin, Valencia, and Sugar Belle by taste panels and chemically by aroma extract dilution analysis (AEDA), and was validated to produce juice essentially indistinguishable from orange juice. (Feng et al., 2017. Cover article, Journal of Agricultural and Food Chemistry).

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1	Nomination	Various	SF11-1-24	Lake	CONSERV	Certified		18	No	Dec-Feb				Highest yields at CONSERV					
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. This selection was the best MidSweet clone among several produced by budwood irradiation. It is a low-seeded clone that produced the highest yields over multiple years in the Conserve II trial, along with high soluble solids. Conserve II trial data is available via Dr. Gmitter.

Please provide analyzed data values for the following factors. An in-trial standard will be used to evaluate the nominated scion's performance. If the nominated scion has been evaluated in multiple eco-regions or trials and you wish to submit data from multiple field trials, please provide data for an appropriate standard scion with similar maturity in each field trial location.

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1	nomination	942	Early Vernia	St. Lucie	Picos 5	Clean budwood available	May-15	5		December	3.5	98	20	65 - 3 years	10	0.62	16.1	6.1	
	standard	942	Vernia UF 35-15	St. Luice	Picos 5	Clean budwood available	May-15	5		January	3.2	100	18	60 - 3 years	9	0.61	14.75	6	
1	nomination	Carrizo	Early Vernia	Polk	Peace River 1	Clean budwood available	Jun-14	3		December	4.1	100	40.5	88 - 4 years	11	0.59	18.6	6.2	
	standard	Carrizo	Vernia UF 35-15	Polk	Peace River 1	Clean budwood available	Jun-14	6		January	3.7	100	39.5	79 - 4 years	11	0.6	18.3	6	
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. The narrative should contain observations made that support the submitted data. Any observation about pest and disease pressure and site factors should be discussed. Attachments can be submitted for leaf nutrient analysis and fruit quality analysis.

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1	nomination	US897	US Sun-Dragon	Lake	Whitmore	Clean at DPI, Rucks has certified increase trees	Jun-13	3	MAC-Pantuso, CREC etc	Nov-Jan	13.3	100	67		13					yes, below
	Standard	US897	Hamlin	Lake	Whitmore		Jun-13	7			8.4	100	48		9					
	nomination	US942	US Sun-Dragon	Lake	Whitmore		Jun-13	3			12.4	70	78		13					
	Standard	US942	Hamlin	Lake	Whitmore		Jun-13	6			7.8	100	43		9					
2	nomination	ORS*	FF-1-89-11	Lake	Whitmore	At DPI for cleanup	May-14	1	no	Oct-Jan					13.5	0.72	18.7			yes, below
3	nomination	ORS	FF-5-6-36	Lake	Whitmore	At DPI for cleanup	May-15	1	no	Nov-Dec					13.8	0.845	16.5			yes, below

\*ORS=own-rooted-seedling

Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. The narrative should contain observations made that support the submitted data. Any observation about pest and disease pressure and site factors should be discussed. Attachments can be submitted for leaf nutrient analysis and fruit quality analysis.

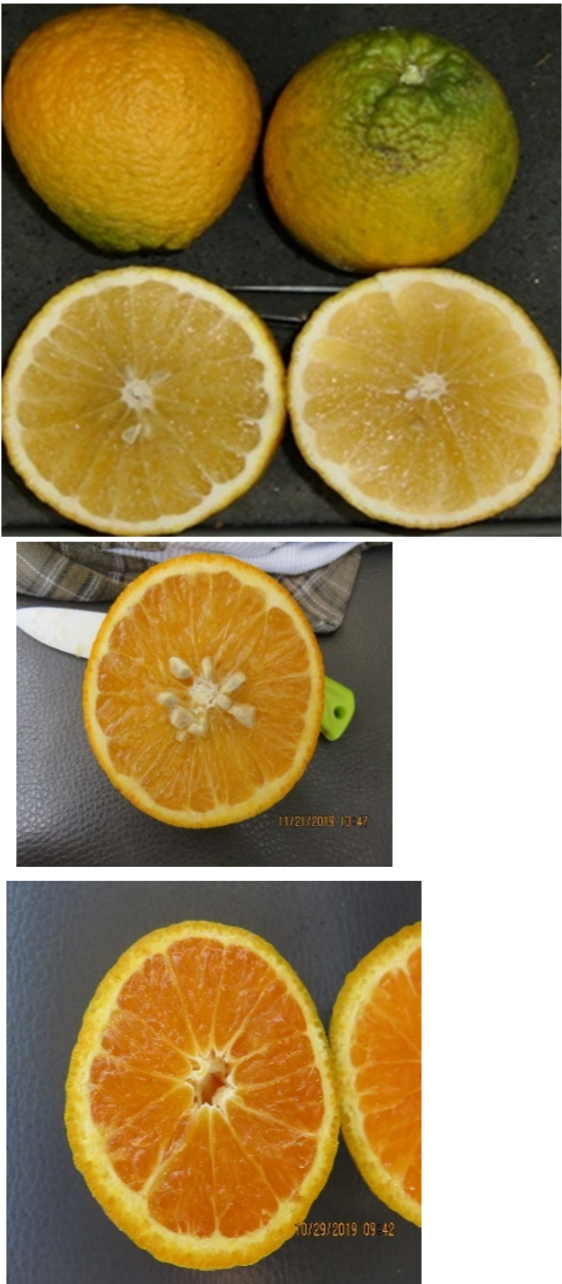
US SunDragon

Our best characterized HLB-tolerant sweet-orange-like hybrid. Anne Plotto's work shows tasters consider its juice to be one of most OJ-like tested to date. She notes that it maintains quality from late November to late January or even early February (last harvest observed was Feb 5, 2020). TA range 0.60 to 0.87, SSC range 10.3 to 14.0, SSC/TA range 13.6-22. Several processors have tested and report promising results. Dr. McCollum has planted in numerous sites and should have data. Initial analyses showed around 11 Brix , 11 ratio and 33 color score on Nov 1. Quality remains good through Jan with 12-13 brix and 12 ratio and 35 color. Taste and internal texture are very orange-like and very good according to most tasters. Very few seeds. No detectable trifoliate taste or smell. Fruit are often nosy and range greatly in size. Peel adherent and fruit seem sturdy enough for standard trailer loads, but needs to be tested. Yield is modest at 1-2 boxes per tree. Tree 5-51-2 x SunDragon: Observations from a single tree which is the original own-rooted hybrid seedling. This is a very nice orange-like fruit that has better color than SunDragon. The parents are the two most HLB-tolerant USDA advanced selections and the original tree seems tolerant to HLB. Productivity is unknown. In initial tests was 12 Brix mid-Sept and 13-15 mid-Oct through mid-Dec. Trifoliate off-taste isn't noticed. Anne Plotto found the juice agreeable and OJ like. Poncirus in pedigree may complicate regulatory approval for OJ.

FF-1-89-11

Observations from a single tree which is the original own-rooted hybrid. Selection made in 2019. Best orange-like hybrid expressing kishu seedlessness. External and interbal appearance very orange-like, with firm flesh and peel. Tree has a compact growth habit and seems to have potentially useful tolerance to HLB. It is easy peel and separation of flesh from peel may be disruptive to juicing? Anne Plotto says ranks very high as OJ-like but also very high in mandarin flavor.

FF-5-6-36



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Breeder Ranking of Nominated Scion	Classification	Rootstock	Scion	County	Location name	Availability (certified or non-certified)	Planting Date (month and year)	Number of trees represented in the recommendation	Is the nominated scion part of a MAC trial? (indicate MAC trial by name)	Scion Maturity Window	Canopy Volume (M^3) *	Tree Survival (%)	Average Annual Yield per Tree (Kg) *	Average Cumulative Yield per Tree and over how many years (Kg)	Average Annual Brix*	Average Annual Acid *	Average Annual Ratio *	Average Annual Pound Solids per Box *	Disease Susceptibility (known significant disease issues)
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Please provide a narrative justifying the nominaion of this scion or other information which could be used in selecting the scion for inclusion in a trial. The narrative should contain observations made that support the submitted data. Any observation about pest and disease pressure and site factors should be discussed. Attachments can be submitted for leaf nutrient analysis and fruit quality analysis.

Selection ID	Category	Ploidy	Parents	Genetic Background	Season	Amount of budwood	Clean	SSC
UFGNV0010	parent	2n	UFGNV0001 X UFGNV0002	sweet orange, mandarin, trifoliolate	JAN-FEB	1 large tree	NO	16
UFGNV0044		2n	UFGNV0024 X UFGNV0003	sweet orange, mandarin, trifoliolate	OCT-NOV	2 trees	NO	11
UFGNV0056		2n	UFGNV0024 X UFGNV0003	sweet orange, mandarin, trifoliolate	OCT-NOV	2 small trees	yes	10.7
UFGNV0187		2n	UFGNV0001 X UFGNV0002	sweet orange, mandarin, trifoliolate	OCT-NOV	2 small trees	yes	13.9

# CRDF February 2021



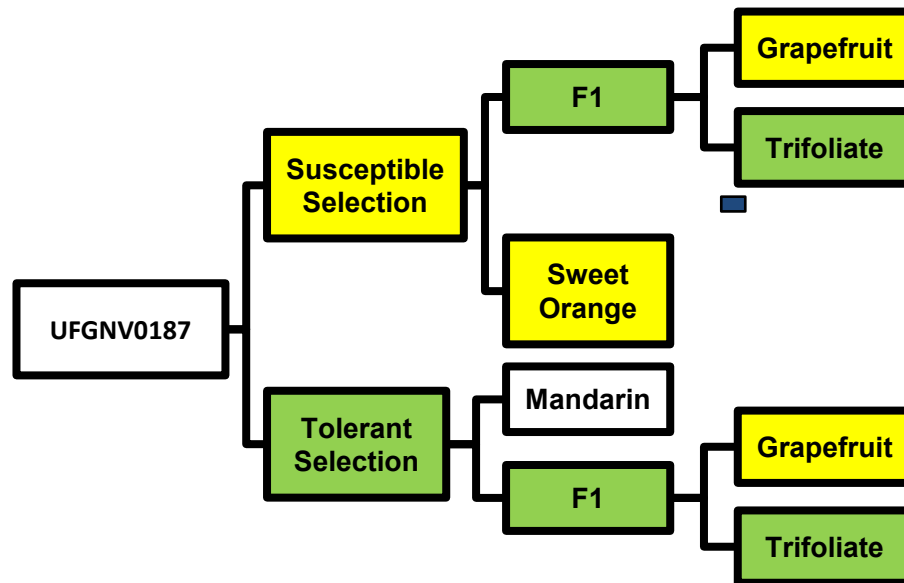
**José X. Chaparro**  
**Fruit Tree Breeding Program**  
**Horticultural Sciences Department**  
**University of Florida**

**UFGNV0187**



# UFGNV0187

## Pedigree





UFGNV0187/CZO

~11 yo

# UFGNV0187

Year	Harvest Date	Crop	Mean Fruit Weight	°Brix
2011	4-Oct	5	141	12
2012	26-Oct	10	140	11
2017	21-Nov	3	90	15
2018	10-Oct	7	140	10
2019	23-Nov	5	154	13
2020	21-Sept	3	92.2	9



Clean Budwood Source Tree





UFGNV0187/KH



UFGNV0187/US-812

# UFGNV0187



# UFGNV0187

TRATMENT	Date	REPETITION	pH	SSC	TTA	Ratio
UFGNV0187/US 812	11/5/20	A	3.86	9.20	0.632	14.56
UFGNV0187/US 812	11/5/20	B	3.9	9.30	0.627	14.83
UFGNV0187/US 942**	11/5/20	A	3.7	13.80	0.921	14.98
UFGNV0187/US 942**	11/5/20	B	3.7	14.00	0.922	15.18
UFGNV0187/KH	11/5/20	A	3.74	12.20	0.852	14.32
UFGNV0187/KH	11/5/20	B	3.76	12.30	0.855	14.39

**\*\*graft incompatible combination**



# UFGNV0187

- Characteristics

Early Ripening (October)

Cold hardy

Deciduous

Seedy

Mild flavor

- Weaknesses

Thorns

Susceptible to Canker

**Not graft compatible with US-942**

