



CRDF Field Trial Update And Results

July 22, 2020

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CRDF Rootstock Trials

Overview

- 3 trial sites
 - 2 Ridge sites and 1 Southwest flatwoods site
- 6 experimental rootstocks
 - UFR 2, UFR 3, UFR 4, UFR 16, US 812, US 942
- 1 standard/traditional rootstock
 - Determined by site – Carrizo, Swingle, Sour
- Each rootstock is replicated 5 times at each site
- At the Babson Park and Lake Placid trials, each plot has 144 trees
 - 64 tree subplot
- At the Felda trial site, each plot has 126 trees
 - 70 tree subplot



Trial Evaluation

- Annual Horticultural Measurements
 - Tree Height, Canopy Diameter, Trunk Cross Sectional Area
- Winter PCR
- Summer Leaf Nutrient Analysis
- DI Ratings
- Annual Yield (weight of fruit per subplot)
- Annual Fruit Quality



Lake Placid, Fl.

Rootstocks

- Planted in June 2015
 - US 812, US 942, UFR 2, UFR 4, Sour
- Planted in September 2015
 - UFR 3
- Planted in June 2016
 - UFR 16

Site Elements

- Ridge site, no beds
- 24' x 6'
 - 303 tree per acre
- Microjet irrigation
- Double set rows
- Plots are 12 trees x 12 rows
 - Subplot is 8 x 8

Canopy Volume m^3



Canopy Volume (m^3)	Mean (se)	
US812	5.563782	a
US942	4.732352	b
UFR-4	4.147643	c
SOUR	3.86492	c
UFR-2	2.754789	d
UFR-16	2.714901	d
UFR-3	2.043016	e

DI Ratings December 2019


	HLBDIMax10_11Dec2019	
SOUR	5.025 ± 0.197	AB
UFR_16	5.325 ± 0.197	A
UFR_2	4.45 ± 0.197	AB
UFR_3	4.9 ± 0.197	AB
UFR_4	4.925 ± 0.197	AB
US_812	4.5 ± 0.197	AB
US_942	4.275 ± 0.197	A



Lake Placid 2020 Yield and Quality data

	Lbs Solids Per Box		Yield Per Plot Lbs		Calculated Boxes Per Acre		Calculated Lbs Solids Per Acre	
SOUR	4.902	AB	3125.4	B	130.2	B	638.3	AB
UFR_16	4.092	C	1362.1	D	56.8	D	230.3	E
UFR_2	4.56	BC	2275.9	C	94.8	C	434.4	CD
UFR_3	4.616	ABC	1552.9	CD	64.7	CD	298.7	DE
UFR_4	5.168	A	2266.6	C	94.4	C	489.5	BC
US_812	4.791	AB	4007.1	A	167	A	798.8	A
US_942	4.599	BC	3599.3	AB	150	AB	689	A

Lake Placid – Cumulative Values

	Boxes per Acre			Solids per Acre	
SOUR	224.8 (10.6)	B	SOUR	1106 (59.1)	B
UFR_16	77.6 (10.6)	D	UFR_16	318 (59.1)	E
UFR_2	138.5 (10.6)	C	UFR_2	654.6 (59.1)	CD
UFR_3	86.1 (10.6)	D	UFR_3	400 (59.1)	DE
UFR_4	146.1 (10.6)	C	UFR_4	742.5 (59.1)	C
 US_812	295.3 (10.6)	A	US_812	1392.9 (59.1)	A
US_942	288.3 (10.6)	A	US_942	1320.1 (59.1)	AB



Babson Park, Fl.


Rootstocks

- Planted in April 2015
 - US 812, US 942, UFR 2, UFR 4, Carrizo
- US 897
- Planted in September 2015
 - UFR 3
- Planted in April 2016
 - UFR 16

Site Elements

- Ridge site, no beds
- 18' x 8'
 - 303 trees per acre
- Microjet irrigation
- Plots are 12 trees x 12 rows
 - Subplots are 8 x 8

Canopy Volume m^3



Canopy Volume (m^3)	Mean (se)	
US942	4.896226	a
Carrizo	3.977602	ab
UFR4	3.959787	ab
US812	3.752813	b
US897	3.334069	b
UFR2	2.32845	c
UFR16	1.858592	c
UFR3	1.310756	c

DI Rating December 2019


	HLBDIMAX10_16Dec2019	
Carrizo	4.8 ± 0.246	ABC
UFR_16	5.75 ± 0.246	AB
UFR_2	4.625 ± 0.246	BC
UFR_3	5.85 ± 0.246	A
UFR_4	4.975 ± 0.246	ABC
US_812	4.625 ± 0.246	BC
US_897	4.525 ± 0.246	C
US_942	4.3 ± 0.246	C



Babson Park 2020 Yield and Quality data

	Lbs Solids Per Box		Yield Per Plot Lbs		Calculated Boxes Per Acre		Calculated Lbs Solids Per Acre	
Carrizo	5.3	AB	4392.9	AB	230.71	AB	1224.5	AB
UFR_16	4.5	C	1781.2	C	93.54	C	415.9	C
UFR_2	5.12	B	3037.3	BC	159.51	BC	813.2	BC
UFR_3	5.27	AB	1819.6	C	95.56	C	511.8	C
UFR_4	5.24	AB	4176.8	AB	219.35	AB	1144.6	AB
US_812	5.62	A	4585.4	AB	240.81	AB	1349.5	A
US_897	5.42	AB	3657.8	AB	192.1	AB	1037.8	AB
US_942	4.96	BC	4915.9	A	258.17	A	1279.2	AB

Babson Park – Cumulative Values

	Boxes per Acre	
Carrizo	477.6 (37.5)	A
UFR_16	138.5 (37.5)	C
UFR_2	300.6 (37.5)	BC
UFR_3	168.1 (37.5)	C
UFR_4	389.1 (37.5)	AB
US_812	526.7 (37.5)	A
US_897	414.7 (37.5)	AB
 US_942	543.8 (37.5)	A

	Solids per Acre	
Carrizo	2402.2 (184.9)	AB
UFR_16	609.9 (184.9)	E
UFR_2	1494.2 (184.9)	CD
UFR_3	894.8 (184.9)	DE
UFR_4	1976.9 (184.9)	BC
US_812	2857.1 (184.9)	A
US_897	2193.1 (184.9)	ABC
US_942	2628 (184.9)	AB





Felda, Fl

Rootstocks

- All trees planted in March 2015
 - US 812, US 942, UFR 2, UFR 3, UFR 4, UFR 16, Swingle

Site Elements

- Bedded grove
 - Single row beds
- 21.5' x 10'
 - 202 trees per acre
- Microjet irrigation
- Plots are 18 trees x 7 rows
 - Subplots are 14 x 5

Canopy Volume m^3

Canopy Volume (m^3)	Mean (se)	
US942	11.486342	a
UFR-4	10.31777	a
US812	9.022844	b
UFR-2	8.623583	b
SWINGLE	7.749995	bc
UFR-16	6.86843	c
UFR-3	4.733862	d



DI Rating December 2019


	HLBDIMax10_23Dec2019	
SWINGLE	4.9 ± 0.173	AB
UFR_16	5.35 ± 0.173	A
UFR_2	4.7 ± 0.173	AB
UFR_3	4.95 ± 0.173	AB
UFR_4	4.9 ± 0.173	AB
US_812	4.55 ± 0.173	B
US_942	5.075 ± 0.173	AB



Felda 2020 Yield and Quality data

	Lbs Solids Per Box		Yield Per Plot Lbs		Calculated Boxes Per Acre		Calculated Lbs Solids PerAcre	
Swingle	5.158	A	4618.4	AB	150.93	AB	776.4	A
UFR_16	4.449	C	4359.7	AB	142.47	AB	636.5	A
UFR_2	4.332	C	5710.8	A	186.63	A	810.9	A
UFR_3	4.626	BC	3680.3	B	120.27	B	560.3	A
UFR_4	4.59	BC	5711.3	A	186.64	A	856.6	A
US_812	4.938	AB	5387.8	AB	176.07	AB	870.0	A
US_942	4.562	BC	5813.5	A	189.98	A	867.7	A

Felda – Cumulative Values

	Boxes per Acre	
Swingle	318.7 (31)	ABC
UFR_16	286.5 (31)	BC
UFR_2	355.6 (31)	ABC
UFR_3	250.8 (31)	C
UFR_4	372.6 (31)	ABC
US_812	395.1 (31)	AB
 US_942	447.7 (31)	A

	Solids per Acre	
Swingle	1630.7 (157.1)	AB
UFR_16	1253.6 (157.1)	B
UFR_2	1638 (157.1)	AB
UFR_3	1203.3 (157.1)	B
UFR_4	1728.8 (157.1)	AB
US_812	1982.9 (157.1)	A
US_942	2011.8 (157.1)	A



Proposed Rootstock Field Trials

- 2 classifications of rootstocks
 - New generation
 - Next generation
 - No more than 20 candidate rootstocks
 - 3 scions (early/mid and late)
 - 2 Valencia clones
 - 1 Vernia
 - Smaller scale trials
- 3 sites
 - Similar evaluation
 - Plant material selection
 - Focus
 - Solids per Acre
 - Viability in the era of HLB



Acknowledgements

- A. Duda and Sons
- Peace River Packing
- Ben Hill Griffin INC.

- Jim Graham – CRDF
- Jim Syvertsen – CRDF
- Steve Futch – CRDF
- Tim Ebert – UF IFAS CREC
- Jude Grosser - IFAS
- Kim Bowman – USDA ARS
- AgerPoint