

# **What to Plant Now: New Varieties from the University of Florida-Citrus Research and Education Center**



Fred G. Gmitter  
UF-CREC



Citrus EXPO  
August 2017

<b>2016-17 Season</b>		
	<b>Florida</b>	<b>California</b>
	<i>(1,000 Boxes)</i>	<i>(1,000 Boxes)</i>
Oranges	68,700	40,000
Grapefruit	7,800	4,000
Tangerines	1,620	24,000
Lemons	<i>Not Reported</i>	19,000
	<b>78,120</b>	<b>87,000</b>

**Florida is no longer #1**

- **Will the Florida citrus industry survive HLB?**
- **If yes, what will the future be? Oranges? Grapefruit? Mandarins? Other citrus types?**
- **Juice business still alive? Or fresh only? Or both?**
- **Do rootstocks make a difference? Nutrition? GMOs?**
- **What should be planted? When? Now and/or later?**
- **What information exists to help make decisions?**

## **QUESTIONS**

- **We are in a time of maximum uncertainty**
- **There are some clear certainties, however**
  - **Scion cultivars with known track records**
  - **Rootstock cultivars with known track records**
  - **Nutritional and other inputs can affect outcome**
  - **The only true constant is change**
- **New planting and management system options**
- **What are the costs and what are the risks?**

# **CONSIDERATIONS I**



- **Many new scions cultivars recently released**
- **Many new rootstock cultivars released**
- **More of each on the horizon**
- **Continue with more of the same, embrace the new uncertainties, or some of both?**
- **Is HLB resistance or tolerance required?**
- **Where to draw the line; risk vs. reward**

## **CONSIDERATIONS II**

- **Rootstocks**
  - **New UF and USDA options**
- **Scions**
  - **Sweet oranges for the juice business**
  - **Mandarin hybrids**
  - **Grapefruit and grapefruit like hybrids**
  - **Acid fruit, e.g. lemons**
- **Develop new, or recapture old, markets**

# Opportunities

- **UFR 1-17**
- **Information ranges from “very little” to “some” to “some more”**
- **All selected on the basis of performance in existing field trials, for tree appearance and yields in the face of HLB**
- **Information: <http://flrootstockselectionguide.org/>**
- **Limited experience and information, but is that greater risk than following the path already taken?**

# New Rootstock Options





# Grapefruit Rootstock Trial





## HLB Tolerant Rootstock

- **Current portfolio of Hamlin, Midsweet, and Valencia; is that where we want the future OJ business to be?**
- **New midseason options include Valquarius, Vernia, and an earlier maturing LS Midsweet**
- **Later season, higher quality options include some of the OLL series**
- **Early season options, not only high colored Hamlin, but now the groundbreaking 'Florida EV 1' and 'Florida EV 2'**

## **New Sweet Oranges**





**VALQUARIUS™**





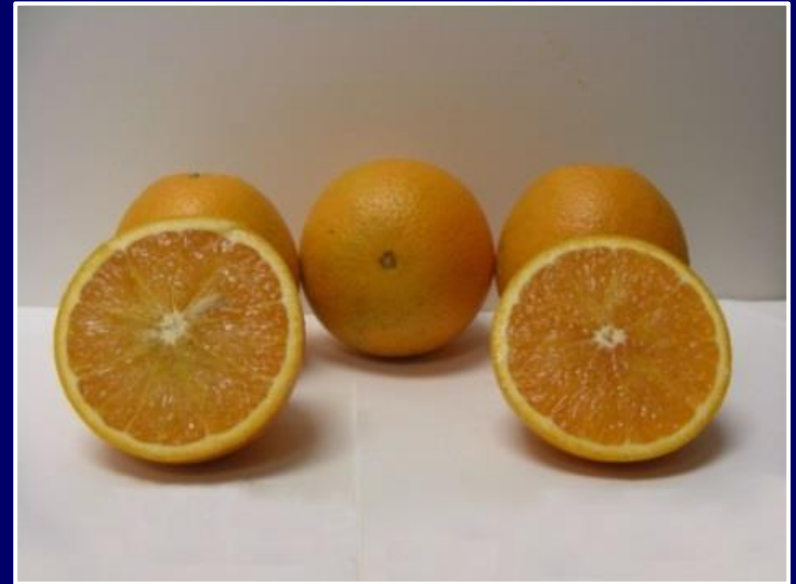
**11-1-24 LS Midsweet**



# ORANGES

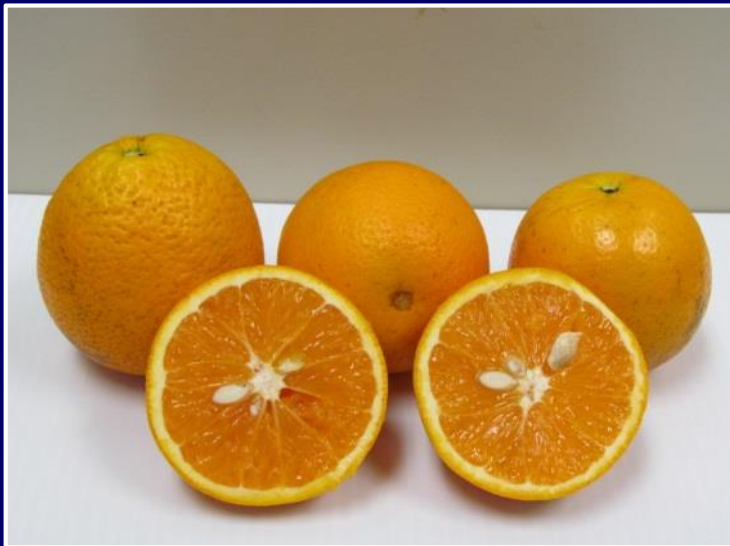
## 'OLL-8'

- Key attributes: Excellent color and quality, extends harvest window of 'Valencia' quality juice
- Produces round oranges with internal and external color similar to 'Rhode Red Valencia'
- Holds on the tree exceptionally well, and maintains quality into the summer
- Trees appear to yield better than standard 'Valencia'
- High juice content and good pounds solids
- Peels easier than a standard 'Valencia'
- With its added color, could also be a valuable addition to the Florida fresh market portfolio
- Most precocious bearing clone among the OLL somaclones



## 'OLL-4'

- Key attributes: excellent color and quality, extends harvest window of 'Valencia' quality juice; also believed to be higher yielding than 'Valencia'
- Produces fruit with excellent internal and external quality with exceptional juice color scores, juice content and soluble solids
- Holds on the tree exceptionally well
- Maintains quality into the summer; however, it matured earlier, and with better ratios than 'Valencia' in 2014
- Has been the highest yielding tree among the OLL somaclones





**‘Florida EV1’ and ‘Florida EV2’: A Revolutionary Development!**

- **LB8-9 (Sugar Belle®)**
- **Fast Track UF CREC releases**
  - **UF N40W-6-3 “Seedless Snack”,**
  - **950,**
  - **C4-15-19,**
  - **Bingo**
  - **RBB 7-34**
  - **Others**

# **New Mandarin Hybrids**





**LB8-9 (Sugar Belle®)**



# The HLB Tolerance of LB8-9; Sugar Belle®







**Young LB8-9 Tree, 4 years HLB+**





Typical fruit from young HLB-infected (3 years) LB8-9 SugarBelle™ trees treated with controlled release fertilizer containing extra manganese and boron, and Tiger-Sul micros.



Typical fruit from young HLB-infected (3 years) LB8-9 SugarBelle™ trees with standard fertilization regime.



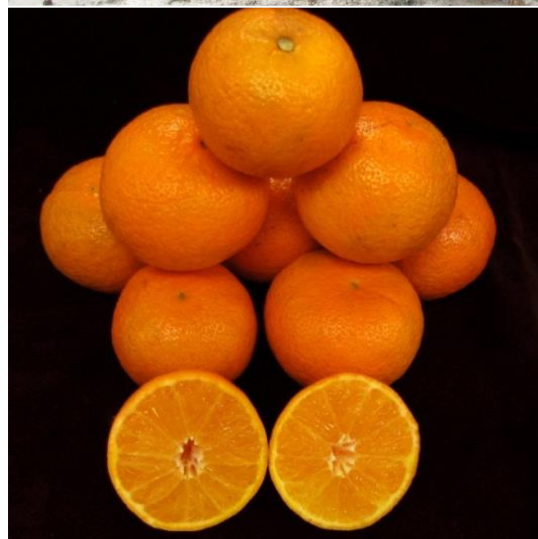


**Sugar Belle® near Vero Beach, HLB+ >8 years !**



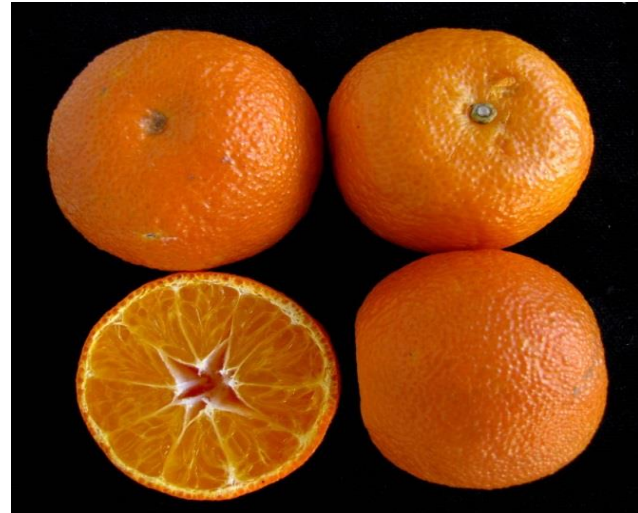
# UF N40W-6-3 “Seedless Snack”

- Seedless
- Good flavor
- Firm flesh
- Oct-Dec maturity
- Uniform fruit
- Productive
- Peelable, but not zipper skin



# C4-15-19

- Early Maturing (Oct – Nov) Seedless Tangerine
- Clementine size
- Good ext & int color
- Peelable, improves with storage
- Sweet, 14-17 brix

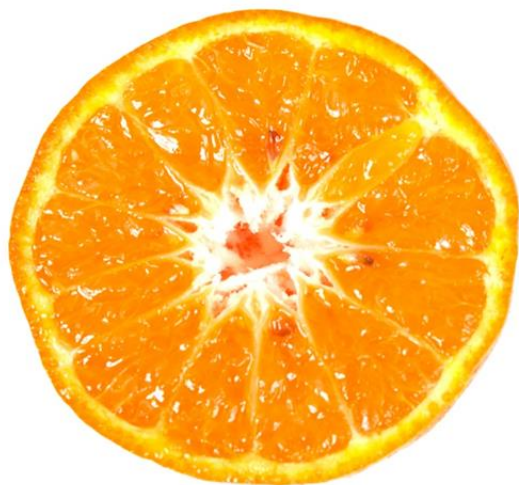


# UF 950

- Easy to peel
- Seedless
- Clementine size
- Crisp texture, like Ponkan
- Better color and flavor than Clementine
- Dec maturity; ratio 13-16
- Alternaria resistant
- HLB tolerance



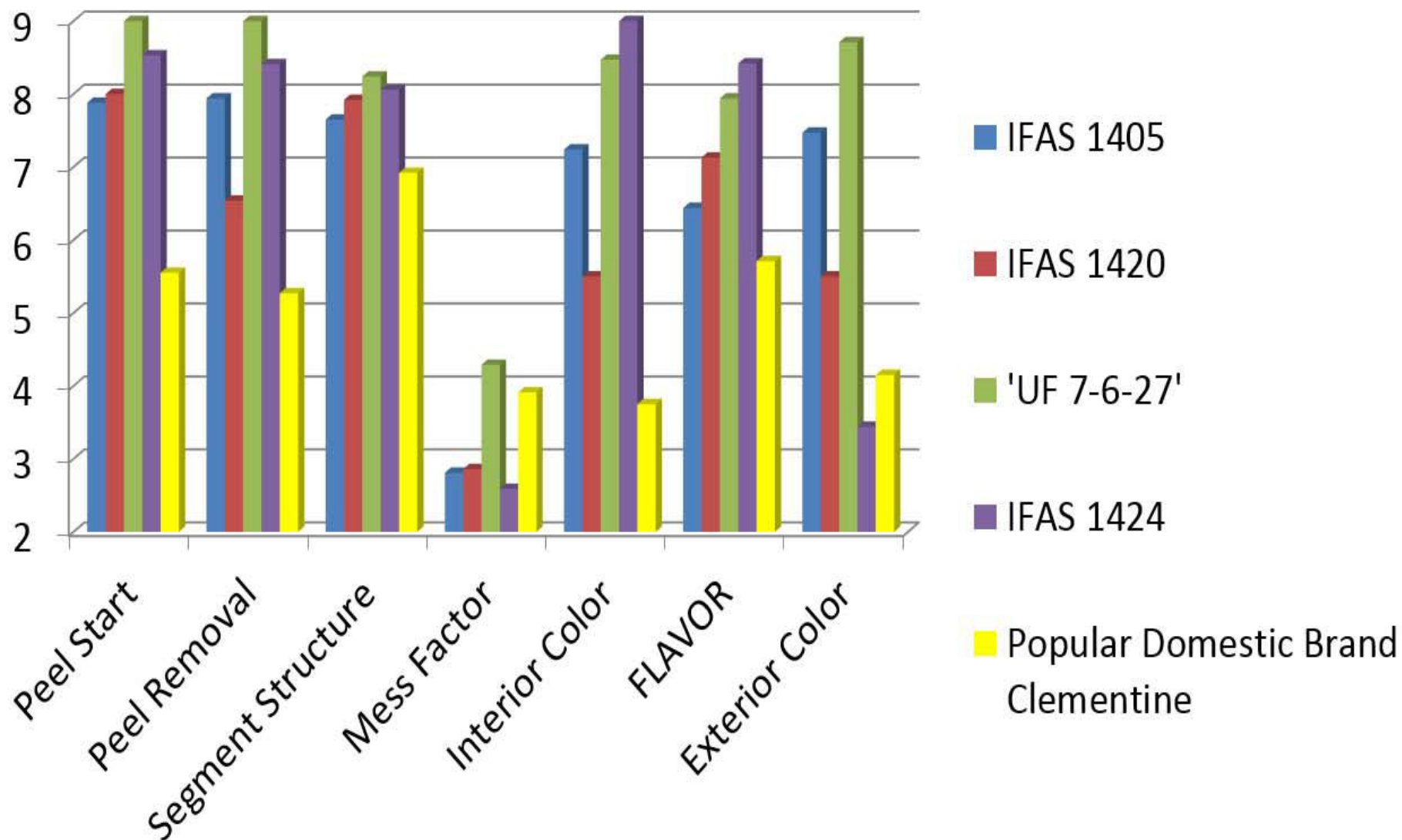




**‘BINGO’!**

- **October-November maturity**
- **Small to medium size fruit**
- **Seedless, though contains inconspicuous seed traces**
- **Deep orange-red color, inside and out**
- **Very easily peeled and consumed, good segment integrity**
- **Excellent flavor**
- **Brix = 11.6; acid = 0.81; ratio = 14.32 (10/20/14)**

## **Fruit Attributes of 'Bingo'**



# Fruit Display Day Results 2014

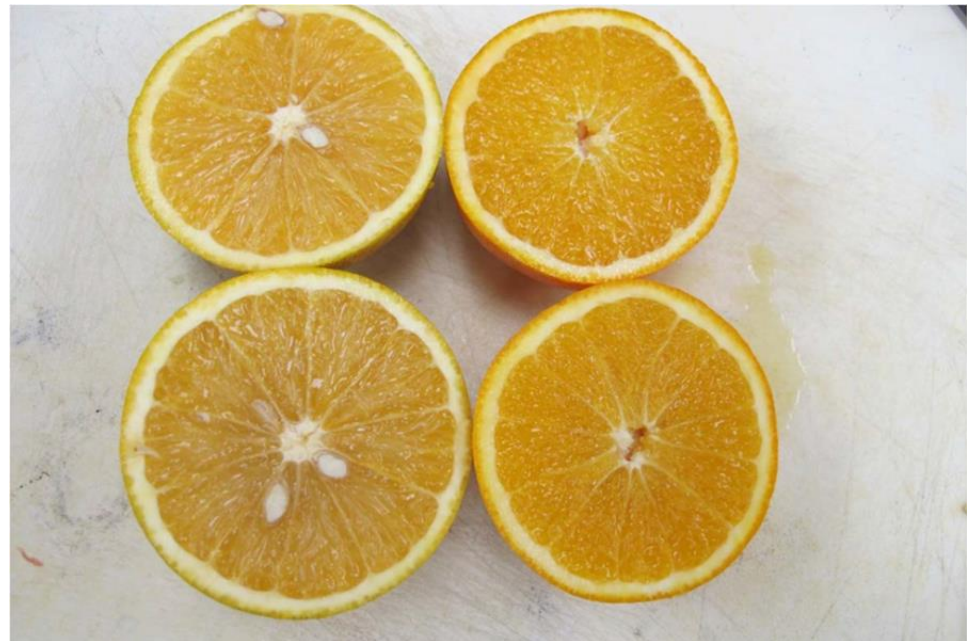


**FL Glenn Navel (l) vs. RBB 7-34 (r)**



# RBB 7-34

- Navel-like orange/mandarin hybrid
- Round shape
- Most fruit have a navel
- Same season as Glen
- Vastly superior color
- Productivity not known
- High Brix (15)
- High acid 1.0-1.1
- Very good flavor
- Seedless triploid
- Peel like navel







# Summer Gold Grapefruit (N2-28)



# Summer Gold Grapefruit (N2-28)



# UF 914

- Red flesh color
- Attractive peel blush
- Grapefruit size (+)
- Grapefruit flavor and aroma
- Tender and juicy flesh
- Very low in FC's (GJE)
- Seedless
- Good brix, lower acid
- Slightly thicker peel than grapefruit



# Unique Characteristics

- Uniform large fruit (avg. 680 g); harvest from October through early April
- External red blush; uniform internal color
- Very similar to grapefruit in aroma and flavor attributes
- **Very low amounts of furanocoumarins**
- Sweeter and less acidic than ordinary grapefruit
  - 914 Brix/acid=9.9/0.99= 10
  - Ruby Red Brix/acid=9.2/1.21= 7.6



- **There is clearly a potential medical claim to make, to recapture the Senior Statin Market**
- **Focus group showed it is clearly distinguishable from grapefruit to ordinary consumers**
- **Is there a reason to market UF 914 other than the counter to the drug interaction?**
- **South Korea, what they buy, and how they use it**
  - **Red grapefruit, to mix with sugar and tea or “shojiu”**
  - **White fleshed “Sweeties” for fresh, but red is BETTER!**

**What to think about UF 914?**

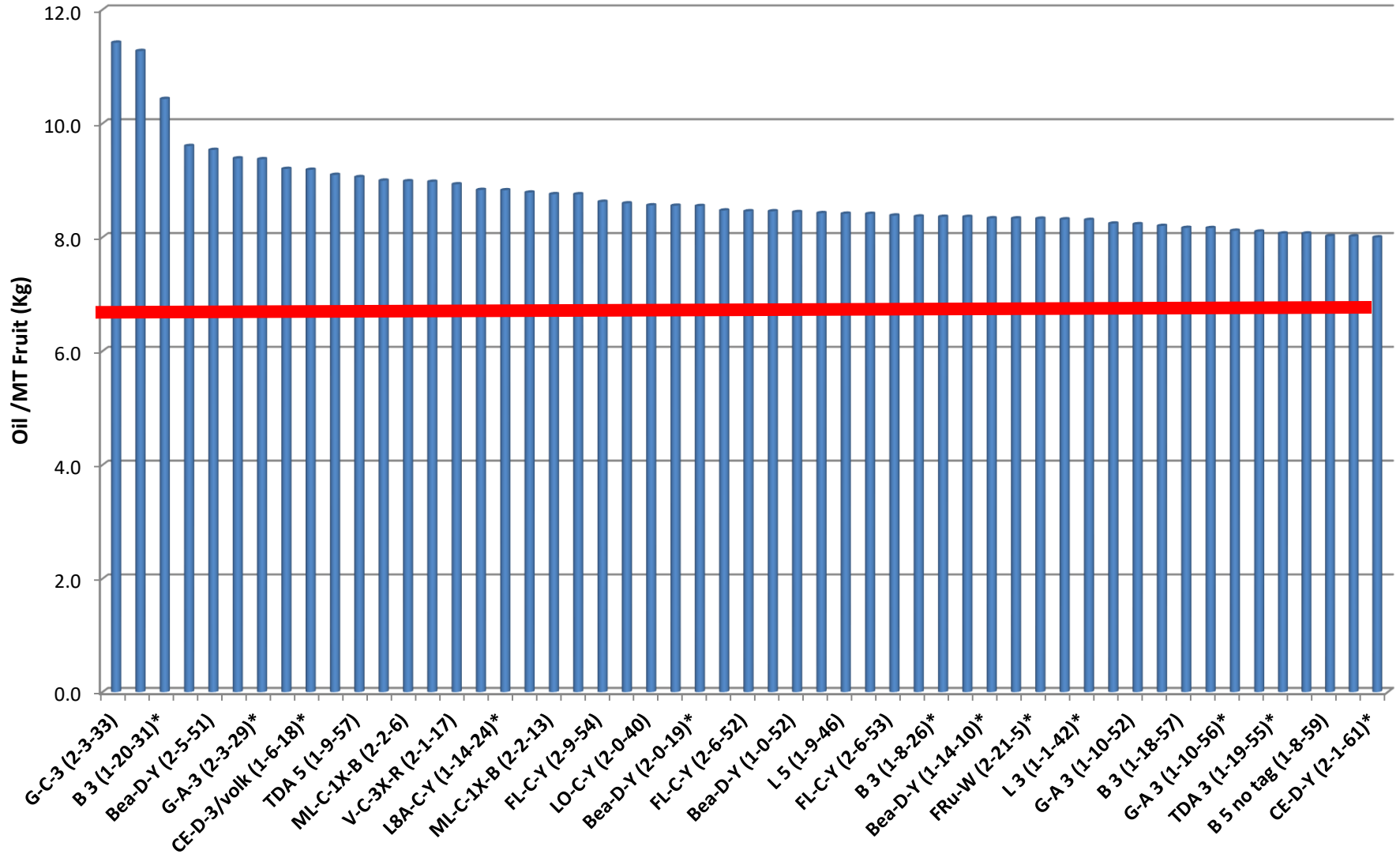




# LEMON FOR INDUSTRY?

- >4000 plants grown out in Ft. Pierce and GCREC
- Selections made for oil yields (>8 kg/MT x 2+ years)
- Normal fruit appearance; i.e. typical true lemons
- Oil quality should approximate current oil quality standards
- Oil yield (kg/ha) over time

# Average oil content per MT Fruit (2002 to 2007) (Control =6.48)





- **Valquarius:** **65,000**
- **OLL #8:** **230,000**
- **OLL #4:** **64,000**
- **LB8-9 (SB):** **76,000**
- **Bingo:** **40,000**
- **UFRs:** **>170,000**

FDACS-DPI 2015-2016

**Growers are MOVING AHEAD!**



**Sugar Belle® in SW Florida, 4 years old**





**OLL-8 on UFR-4 (4 years)**





**OLL-8 on UFR-2 (4 years)**

- Continue with more of the same, embrace the new OPPORTUNITIES, or some of both?
- Is HLB resistance or tolerance required?
- Where to draw the line; risk vs. reward?
- There are options; no guarantees– either way you choose.
- YOU decide!

**Uncertainties=Opportunities**





**Time of the Phoenix**



**CRDF**

**USDA-NIFA**

**NVDMC**



**The good grower-cooperators of Florida**

**THANK YOU!**