

# Jump on the Fast Track

## New fresh citrus varieties from the University of Florida

**By Fred Gmitter,  
Jude Grosser and Bill Castle**

There was a time not so long ago when the Florida fresh citrus fruit industry was based on a handful of familiar old varieties, and the prices growers received for their fruit usually were such that there was little interest in even thinking about something new and different. Grapefruit was king of the fresh industry, and Florida tangerines, though a smaller segment than grapefruit, represented the greatest production base of this delicious fresh fruit category in the United States.

In Florida during the 1997–98 season, there were about 128,000 acres of grapefruit grown, yielding nearly 50 million boxes, 27,500 acres of tangerines yielding nearly 5.2 million boxes, and more than 12,000 acres of tangelos yielding nearly 2.9 million boxes. By the 2011–12 season, we saw grapefruit acreage drop to about 45,500 and production to under 19 million boxes, tangerine acreage drop

to just over 12,000 acres with a little more than 4 million boxes of fruit produced, and there were only 4,000 acres of tangelos yielding just over 1 million boxes of fruit. Recent U.S. Department of Agriculture crop estimates peg the current season's output even lower.

What happened in these last 15 years? Certainly, some obvious factors fueled the declines we have witnessed — real estate speculation, hurricanes, citrus canker, and most recently HLB. But probably the greatest impact has come from the substantial changes in consumer expectations and demands for fresh citrus products. A tasty, yet not-so-easy-to-peel and full-of-seeds Murcott is no longer what the consumer really wants to buy, especially after they have experienced the seedless, “cute” and easy-to-peel Clementine and the several other new varieties all marketed with the same attributes. And, the typical consumers of grapefruit have aged and been instructed by doctors to lay off the grapefruit because of concerns related to the

various medications they consume, because of the so-called grapefruit juice effect.

In the meantime, tangerine acreage and production, first in the Mediterranean region and then in California, have skyrocketed. Former grapefruit fans lament their limitations as they remember fondly their favorite, now-forbidden, fruit. But, citrus breeders in Florida and elsewhere were busy also across those 15 years developing new potential varieties that might address the challenges the Florida fresh citrus industry faces.

### FAST-TRACK RELEASE

Now, the time has come for the Florida fresh industry to take a close look at the products produced by the breeding programs, and to that end the University of Florida, the Florida Foundation Seed Producers, and the fresh industry represented by the New Varieties Development and Management Corporation (NVDMC) have devised the Fast-Track release option.

# Need New Citrus Varieties?

## NVDMC

New Varieties Development & Management Corporation

- A Grower funded variety program
- Supports new variety development research in Florida
- Provides access to unique and high value varieties for growers, nurseries and packers. Fresh and processed varieties.
- Serves as licensing agent for public and private varieties. Working to keep citrus growers on the leading edge.

Staff: **Peter Chaires**

• Email: [pchaires@nvdmc.org](mailto:pchaires@nvdmc.org)

• Website: [NVDMC.org](http://NVDMC.org)

### Varieties available for Commercial Planting

**Sugar Belle®  
Mandarin Hybrid**



- Unique specialty hybrid of Clementine and Honeybell
- December-January Maturity
- High flavor — strong consumer appeal

**Valquarius™**



- Early maturing Valencia orange
- March quality in January

**Tango Mandarin**



- Seedless easy peel mandarin
- Maturity range: Thanksgiving — January

**U.S. Early Pride**



- Seedless or very low seeded tangerine
- Same maturity period as Fallglo
- Now available for commercial production

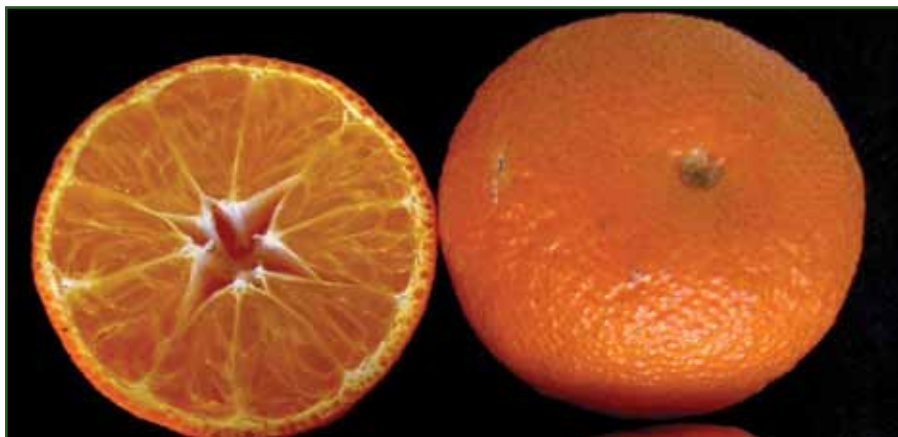
Other tangerine varieties (Gold Nugget, Tahoe, Shasta and Yosemite Gold) available for licensed grower trials (est. maturity range October-March)

Contact NVDMC for other varieties available for trial planting

This is a system designed to offer incentive to growers to participate now in the final commercial evaluations of several new UF varieties, and to have firsthand experience growing the trees and producing small crops of fruit, to support decisions about planting these varieties on a commercial scale. Fruit samples have been seen and evaluated by participants at the fruit display days we have held over the past several seasons, and the feedback we have had from industry has helped to guide our release decisions.

What follows is brief descriptive information on the nine selections that are currently available; take a look, consider the possibilities, and make the move to the Fast Track!

Several of the releases available are mandarin hybrids, some with seeds and others nearly or completely seedless. The earliest maturing mandarin available is **UF 900**. This variety produces fruit that develop orange color in mid-late September and are deeply colored by early November. In comparisons with Fallglo, the current industry standard for early harvest, UF 900 fruit are much easier to peel and more convenient to eat; most notably, the fruit can reach a sugar/acid ratio of 15 by late September or early October,



*C4-15-19, a promising seedless mandarin selection.*

while Fallglo in the same season and time were barely over seven. The flavor of UF 900 fruit is outstanding for such early maturity. The tree is typical in vigor, and notably it bears good crops annually. Tests have shown that the variety is resistant to Alternaria, and no post-harvest problems have been noted across several seasons' testing. Though not seedless, generally the seed number is lower than the typical Fallglo fruit.

Next in line is **N40W-6-3**, a mandarin variety that produces small-to-medium, seedless fruit with a unique and robust sweet flavor. These fruit begin to mature in October, but reach

their maximum flavor and quality in late November. **N40W-6-3** makes a small, compact tree when grown on Swingle rootstock. Although it can be peeled, it should not be considered a zipper-skinned selection. A portion of the first-year crop can exhibit a rougher rind and lower juice content, but this problem seems to diminish with subsequent crops.

Another very promising seedless mandarin selection is **C4-15-19**, which produces a Clementine-sized, peelable, and well-colored fruit with a very sweet and pleasant flavor, maturing sometime between October and November, depending on the season. Fruit may need to be clipped to avoid plugging, especially with later harvest dates. The rind has conspicuous oil glands that release pleasantly fragrant oil during peeling. The tree has shown potential to yield quite well. This is the first seedless variety we have released that came from a somatic hybrid pollen parent, and the seed parent is our previously released mandarin hybrid, Sugar Belle®.

**UF 950** (see page 14) has been called by some the "Florida Clementine" because of its resemblance to that variety. It has better flavor and better internal and external color than the

**A-DAB LLC**  
**Let me help you kill your psyllids**  
**A-Dab will do you**

**863-781-0536**  
**P.O. Box 1554, Wauchula, FL. 33873**    **dbaterrell@yahoo.com**

**Over 30 years in the citrus industry**

**Brian Bartholomew**

Mobile (863) 990-0800 • Office (239) 368-2128  
P.O. Box 1289 Fort Myers, Florida 33902

### Can you put a price on a life? **Cancer DOES**

One of Florida's very own organic citrus grower and nurseryman for over 30 years needs your help! Charles Farmer, of Farmer's Citrus Nursery & Budding, was recently diagnosed with stage 4 cancer. Without treatment, this aggressive form of cancer could leave him with only a few months to live. The Burzynski Clinic can offer him a safe and effective treatment that could possibly cure him. We are trying to raise money to afford this costly treatment that isn't covered by insurance. Please help us save Charles. Every dollar makes a huge difference! For more info, please check out our Facebook Page: [facebook.com/farmerfruits](https://facebook.com/farmerfruits) or call us at (954) 303-0170. To make a donation through PayPal, visit our website: [farmerfruits.wordpress.com](https://farmerfruits.wordpress.com) God Bless! — **The Farmer Family**

Clementine fruit found in the marketplace. It is easily peeled and eaten, with good segment structure and a crisp texture. Generally, the fruit are seedless with no more than two seeds ever found in a single fruit (even with substantial cross-pollination), and can be harvested from early-mid December through mid-January. Like UF 900, it has been shown to be resistant to *Alternaria*. It flowers annually, but fruit set can be light; however, limb girdling or gibberellic acid spray treatments during bloom have been shown to result in substantial crops of fruit annually.

The final mandarin selection is **UF 411**, a variety that produces large and attractive fruit that, although quite firm, are easy to peel cleanly. The fruit are not seedless, but because of their exceptional eating quality, we have decided to release the variety nonetheless. Fruit are very aromatic and flavorful, and produce high soluble solids balanced with substantial acidity for a robust eating experience. Their consistently large size and visual appeal, along with their flavor, suggest a potentially important place in the gift fruit market. UF 411 was selected as the most desirable mandarin of more than seven tested in consumer taste tests several years ago, including



*UF 950 variety has been called the "Florida Clementine."*

several seedless commercial varieties. The fruit mature in most seasons during January, and are of excellent quality when harvested at maturity. The tree is vigorous and dense, which protects most of the crop from sunburn. And like UF 900 and UF 950, this selection is resistant to *Alternaria*.

### **FOR THE PUMMELO NICHE MARKET**

For growers interested in exploiting the pummelo niche market, there are three exciting new selections that have substantial visual appeal, as well as very good flavor. The **5-1-99-5** produces a medium-large sized and



**Visit us at  
Citrus Expo  
Booth K**

**NEW  
SPRAYERS  
Coming Soon!**

- Custom Sprayers (low/high volume)
- Herbiciding Equipment
- TOL Hedges
- Chandler Fertilizer Spreaders
- Custom Application Services Available
- Computerized Application Systems
- Parts, Sales and Services

**Luis Martínez: 772-473-1447  
Barry Keller: 772-473-4142  
Vero Beach - Florida**

**Sales Department:  
E-mail: [Sales@CurtecSprayers.com](mailto:Sales@CurtecSprayers.com)  
[www.CurtecSprayers.com](http://www.CurtecSprayers.com)**



*The 5-1-99-5 produces a medium-large sized and juicy fruit.*

juicy fruit, but with a thinner rind than most commercially available pummelos. The flesh color is a very attractive dark-red, and the segments are more uniform in size and shape than other pummelo varieties. The flavor is very good, with just a hint of grapefruit-like bitterness. External appearance is likewise attractive, with pink blushes appearing sometimes when fruit are clustered together.

A very similar appearing selection is **C2-5-12**, a red-fleshed selection with a pleasant, non-bitter and sweet flavor, maturing in time for Thanksgiving in most seasons. Its furanocoumarin content (the chemicals associated with the grapefruit juice effect) is slightly lower than red grapefruit, and much lower

than the 5-1-99-5 described above. The fruit and segment sizes of C2-5-12 are more variable than the 5-1-99-5. Finally, there is **5-1-99-2**, which produces a fruit with unique, non-bitter and sweet flavor due to high Brix and ratio (13, and 16–19 in late December). They have lower seed content than most pummelos, sometimes exhibiting seedlessness when cross-pollination has been prevented. Fruit are also smaller than most pummelos, and as such, may be amenable to existing packinghouse equipment that handles grapefruit. Field performance and some lab tests have indicated lesser sensitivity to canker in this selection, as well.

Finally, we are releasing a pummelo-grapefruit hybrid called **UF 914**.



*UF 914 is a pummelo-grapefruit hybrid.*

**Safer PN for summer sprays!**

**Haifa BONUS**  
13-2-44

**New breakthrough Foliar Fertilizer for citrus and fruit crops**

Haifa Bonus, an innovative potassium nitrate fertilizer with special adjuvant for optimal foliar nutrition, allows for concentrated spray applications

- Improved nutrient uptake
- Better fruit size and quality
- Better plant health
- Application savings for growers

Talk to your nearest Haifa distributor today!  
Haifa North America, (800) 649-4944  
NorthAmerica@haifa-group.com

**Haifa** [www.haifa-group.com](http://www.haifa-group.com)  
Pioneering the Future



# BLACK SPOT?

see the natural solution  
Citrus Expo booths 409 & 310

**Altech**<sup>®</sup>  
CROP SCIENCE

For more information, please contact Ed Dickinson at (863) 287-8974  
[alltechcropscience.com](http://alltechcropscience.com)

This variety produces nearly uniform, red-blushed and red-fleshed, seedless fruit that resemble a large red grapefruit in shape, color and overall appearance. The similarity follows in aroma and flavor, although they are somewhat sweeter and less acidic than ordinary grapefruit, with a ratio exceeding 10 while grapefruit harvested at the same time and location were around 7.5. The tree yields well annually and has produced good yields even when covered in bee-proof mesh at bloom time.

However, the most significant attribute is that UF 914 fruit have extremely low levels of furanocoumarins. Tests of juice from this variety have shown that it does not inhibit human liver enzyme activity in vitro, while grapefruit juice does so, thus leading to the grapefruit juice effect. This variety potentially could meet the demands for grapefruit and juice coming from those former fans who no longer can have their old-time favorite! Focus group studies have demonstrated that consumers who do not like grapefruit found this fruit to be very good, and those who already like grapefruit considered it to be a very good grapefruit.

## UNANSWERED QUESTIONS

There are some unanswered questions relating to these new varieties, such as the need for, or the need to be isolated from, cross pollination, their compatibility and performance on various rootstocks, and field tolerance to diseases. In general, most have had at least some preliminary post-harvest assessments and have been found acceptable compared to standard varieties. We, the researchers, could take another five to 10 years to investigate the unknowns, but in the end the most important evaluations ultimately will come from the industry partners who step forward now. So we are ready to move ahead quickly, and with the best information we can have, on to the Fast Track!

Footnote: The authors gratefully acknowledge support from the NVDMC, Florida Citrus Production Research Advisory Council, Florida Department of Citrus and the Citrus Research and Development Foundation for various aspects of the research leading to this point, and the collaborations with Mark Ritenour (UF-IRREC) for post-harvest assessments, Megan Dewdney and James Graham (UF-CREC) for disease testing; and Anne Plotto and Liz Baldwin (USDA-ARS), Filomena Valim (FDOC), and Lisa House and Zhifeng Gao (UF-FRED) for consumer testing and

## Holmberg Citrus Nursery

Reg. #47222379



**TAKING  
ORDERS  
FOR  
2014-2015**

See us at  
Citrus Expo  
Booth 722

**Give your new grove  
settings a head start with  
Custom Produced "Ultimate Resets" – 6.5 x 6.5 Sleeves!**

**Contact us NOW for more information!**

**Eric Nething: 813-477-4023**

**Doug Holmberg: 813-335-8800 • Fax: 813-684-3899**

13430 Hobson Simmons Rd., Lithia, FL 33547

[dougsipad@gmail.com](mailto:dougsipad@gmail.com)



**FROSTPROOF**  
growers supply

### Now Featuring Economy Tree Wraps

- ✓ Made from a thinner, lighter, more flexible version of our original corrugated Sprout Saver II
- ✓ Contains a high concentration of UV stabilizers that block and absorb sun's harmful rays
- ✓ Secure with twist ties or staples
- ✓ Available in standard sizes 8" x 14" and 8" x 18." Can be custom made to any size needed.

#### 14-inch Economy Wraps

1 - 2,499	\$0.27
2,500 - 4,999	\$0.26
5,000 - 9,999	\$0.25
10,000 - 14,999	\$0.24
15,000+	\$0.23

#### 18-inch Economy Wraps

1 - 2,499	\$0.34
2,500 - 4,999	\$0.33
5,000 - 9,999	\$0.32
10,000 - 14,999	\$0.31
15,000+	\$0.30

• Tree-T-Pees • Ground Cover • Deer Nets • Budding Tape • Hand Tools • Tensiometers  
• Flagging Tape • Safety Supplies • PH Testers • Shade Cloth • Bug Lenses • Field Boxes  
**Toll free: 800-635-3621** [www.frostproof.com](http://www.frostproof.com) [support@frostproof.com](mailto:support@frostproof.com)

## FOUR GENERATIONS of FLORIDA CITRUS NURSERIES



Now accepting orders for 2014-2015 delivery

### EXCLUSIVE LIFETIME REPLACEMENT POLICY.

Every tree is hand nurtured and inspected. Swingle, Kuharske, Carrizo, Cleo and Sour rootstocks available. Other varieties are also available.

Call Chris at (407) 404-0355 or Paul at (407) 832-1010

Visit our exciting new website TODAY!  
www.blue-heron-nurseries.com

WINTER GARDEN, FLORIDA

www.blue-heron-nurseries.com



Reg. # 48006420



Growing  
the highest  
quality  
Peach &  
Blueberry plants.

ISLAND  
GROVE  
AG PRODUCTS  
NURSERY DIVISION

New Releases Available / Booking Orders Now

UF Best	Flicker
UF One	Meadowlark
UF Sun	Farthing
Tropic Beauty	Scintilla

Contract growing and many more varieties available.

Call one of our knowledgeable nursery experts today!

352.481.5558

Bert Sheffield 352.274.3835

WWW.ISLANDGROVEAGPRODUCTS.COM

focus groups. Finally, we thank the very many members of our team, past and present, who have made significant contributions to the work.

*Fred Gmitter and Jude Grosser are professors and Bill Castle is professor emeritus, all with the University of Florida-IFAS's Citrus Research and Education Center in Lake Alfred.* 🍊



**Industry associations have honored three Coldwell Banker Commercial Saunders Real Estate (CBCSRE) associates.** **Clay Taylor** was presented the Florida Land Realtor of the Year 2012 award by the Realtors Land Institute Florida; **David Hitchcock** earned the certified commercial investment member designation from the Certified Commercial Investment Member Institute; **Richard Dempsey** was inducted into the Florida Realtors Honor Society.

CBCSRE also announced that **John (Johnny) Sirmon** recently joined the firm as a licensed real estate associate. 🍊

## WHAT'S SHAKIN'

University of Florida-IFAS Citrus Mechanical Harvesting and Abscission faculty member Michelle Danyluk received the 2013 Excellence Award for Assistant Professors from the University of Florida in recognition of her outstanding research. Danyluk, food science and human nutrition faculty member at the Citrus Research and Education Center in Lake Alfred, was awarded for her work this past year on *Salmonella* and *E. coli* detection and dispersal.

Danyluk's research interests include microbial food safety and quality, as well as developing standards for maintaining them in different storage and processing conditions. One of her research focuses is on citrus, and how and why foodborne pathogens survive in production environments and the role environments play in food contamination.

See <http://citrusmh.ifas.ufl.edu> for more on Danyluk's work with citrus mechanical harvesting.