



By Juanita Popenoe



The USDA Whitmore Farm is one of several Florida locations where cultivar and rootstock trials are taking place.

Growers, researchers trial rootstock/cultivar combos

Growers in the central (Orange, Lake and Marion counties) and northern areas of Florida are trying some new cultivars and rootstocks to get better production and more fresh fruit varieties. The new plantings are very recent though, and yields are not yet ready for comparison.

LENNON GROVE SERVICES

Bill Lennon from Lennon Grove Services is testing new rootstocks with the traditional Hamlin. The trees are three years old now on 639, UFR-3, UFR-4, 812 and 942 and have not yet yielded. The Hamlins are struggling. Even though the recommendations for drenching and spraying for psyllids were followed, the trees are still showing signs of HLB infection.

Lennon says the ranking of plant growth is clear, at least for best and worst, just by the looks of the trees. 942 is by far the best, and UFR-3 is the worst. He ranks them in the following order from best to worst: 942, 812, 639, UFR-4 and UFR-3.

IMG CITRUS

IMG Citrus at Cherrylake in Groveland is trying various high-density plantings. Bingo was planted at high density in the fall of 2017, and IMG is finding the cultivar to be very temperamental.

IMG also planted Tango at high density in the fall of 2018 and 2019, as well as Bingo and Tango in super-high-density containers in spring 2019. While too early to tell much about the high-density mandarin plantings, what

seems to be growing well according to Brian Randolph is Valencia on 942 under sub-surface drip.

USDA WHITMORE FARM

The USDA Whitmore Farm in Lake County is planning a new cultivar planting for the New Varieties Development and Management Corporation (NVDMC). The trees are still in the nursery, but a planting for demonstration purposes is approved with 300 trees, including oranges, specialty fruit and grapefruit. There will be five trees each on two rootstocks for a good comparison.

Since the Whitmore Farm is considered a secured federal facility, future field days will require certain protocols. Field days will be held once the trees are sufficiently grown for

comparison. In talking with NVDMC Executive Director Peter Chaires about this trial, he mentioned that USDA 1-22-79 tangerine is available for grower trial. Agreements are available through NVDMC. USDA 1-22-79 is a low-seeded easy peeler with very good internal quality. It is not highly tolerant to HLB like 5-51-2 but seems to be better than average. Some advanced nutrition programs may help make 1-22-79 a winner.

UF/IFAS TRIALS

The University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) has a cold-hardy satsuma trial at Tater Farms in Hastings. This will be the first fruiting year, so researchers do not have results yet. The bags are coming off now, and branches are being retrained according to Prissy Fletcher, the UF/IFAS Extension agent working on this project. Sugar Belle/UFR-4, Tango/UFR-4, Bingo/UFR-4, Dream Navel/US-897 and Early Pride/US-942 also are being tested.

Matt Lollar, UF/IFAS Extension agent in Santa Rosa County, reports that most of the established trees in the Panhandle are the satsuma cultivars Kimbrough, Brown Select and Owari. The preferred rootstock is Rubidoux for cold hardiness.

The North Florida Research and Education Center in Quincy hosted a meeting last year with growers to discuss desired research plot cultivar recommendations and will be planting Owari, Glen Navel, Marathon, Tango and Sugar Belle on the rootstocks *Poncirus trifoliata*, Swingle, US-897, US-942, X-639 and UFR-4.

The West Florida Research and Education Center in Jay has a plot with the mandarin cultivars UFGlow, UFSunrise and UFDawn that Lollar is caring for, but they are young and not yet bearing.

Growers in the north central to northern Florida districts are just getting started with some of the new varieties, but good results are expected with the range of cultivars being tested. 🍊

Juanita Popenoe is a multi-county commercial fruit Extension agent at the UF/IFAS Lake County Extension office in Tavares.

Wolbachia Could Help Whip HLB



By Rick Dantzer, CRDF chief operating officer

As a non-scientist, I make it a habit to regularly go over in my mind basic scientific truths to make sure the projects the Citrus Research and Development Foundation (CRDF) funds have valid hypotheses. For example, I recently reviewed the basic tenets of the “disease triangle.” This is an easy-to-understand explanation of how plant disease occurs that was put forth by George McNew, a plant pathologist, more than 60 years ago.

McNew posited that for disease to exist, there must be an intersection between a susceptible host (citrus plant), a virulent pathogen (Liberibacter) and a favorable environment (like Florida). Modify or control the host, pathogen or environment and the cycle of the disease is broken. It is this way with all diseases, not just HLB.

What caused me to reflect upon this truth was a conversation I recently had with Wayne Simmons, an outstanding member of CRDF’s Research Management Committee. Simmons gives a huge amount of time to studying proposals we receive; he does his homework and always comes to meetings prepared. I was picking his brain about where we were with our research and what he thought we needed to do.

“I keep going back to the psyllid,” Simmons said. “If we could get control of that bug, we’d get control of the disease.”

On nearly the same day, I received a link to a story from grower Ed Dickinson. He has an infectious curiosity about science and serves the citrus industry however he can. The story was on how a bacterium in mosquitoes in Central America was being altered to eliminate malaria. The article cited work with another bacterium found in mosquitoes, *Wolbachia*, and how it was being altered to knock out dengue and other mosquito-borne infections.

I forwarded the article to Jim Graham, University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) emeritus professor, who is knowledgeable about all things citrus and advises CRDF. I asked him what he thought about the article and whether the principle could be used in the fight against HLB.

“Kirsten (Pelz-Stelinski) is working with *Wolbachia*. If anybody would know, she would,” said Graham.

So, I contacted Pelz-Stelinski, a distinguished UF/IFAS scientist. Graham was correct; she is in fact working with *Wolbachia* in the fight to whip HLB.

“*Wolbachia* live in the psyllid,” she said. “Using synthetic molecules that mimic DNA and inhibit bacterial gene expression, we’re attempting to create a product that can be applied to trees that affects *Wolbachia*, which in turn might knock down transmission of *Liberibacter* and prevent it from harming the tree.”

To this non-scientist, it sounds like science fiction, but the concept has been used often to stop pathogens that affect humans, so why wouldn’t it work against pathogens that affect plants? And if it does, we just might end up with a product that, as Simmons would say, gives us “control of that bug.”



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