

# RIVER RAMBLINGS



The newsletter of the  
**Indian River Citrus League**  
MAY 2018



## Pat Schirard Represents the River on the Florida Citrus Commission



Pat Schirard, of Vero Beach, was appointed by Governor Rick Scott to the Florida Citrus Commission representing District 1, which includes the Indian River area on the east coast of Florida. Schirard is president of GEM Indian River Select, LLC based in Ft. Pierce and current president of the Indian River Citrus League Board of Directors. Schirard is appointed to a vacant seat previously held by Lee Bouldin. He will serve for a term beginning May 24, 2018 and ending May 31, 2019.

His career in citrus spans over approximately 30 years' starting out as a citrus production manager in central Florida to growing a juice company into a premium niche brand of 100% Florida juices in over 4,000 retail stores throughout the United States. He graduated from the University of Florida with his Bachelor of Science in Food and Resource Economics

"Pat will bring to the Commission a wealth of knowledge and more importantly industry experience and is someone that is committed to the future of the citrus industry", stated Doug Bournique, Executive Vice President of the Indian River Citrus League. He went on to say, "It couldn't be better timing for him to be on the Commission and he will represent the interests of the River well."

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# Millennium Block Field Testing

## of Scion and Rootstocks in the Indian River

Rhuanyito S. Ferrarezi and Ronald D. Cave

Rhuanyito S. Ferrarezi, Assistant Professor at Horticultural Sciences Department, Indian River Research and Education Center (IRREC), IFAS, UF. E-mail: [rferrarezi@ufl.edu](mailto:rferrarezi@ufl.edu)  
 Ronald D. Cave, Professor and Center Director, IRREC, IFAS, UF. E-mail: [rdcave@ufl.edu](mailto:rdcave@ufl.edu)

Citrus is Florida's most important agricultural commodity. The state produces citrus for different markets: round oranges for juice; navels, mandarins, grapefruit and lemons for the fresh fruit industry; and lemons for extracting peel oil for processing. Huanglongbing (HLB) affects all citrus varieties, and since the discovery of the disease, research continues to identify tolerant citrus selections.

The Indian River (IR) Citrus District, a narrow strip of land on the eastern coast of Florida, stretching nearly 200 miles from Daytona Beach to West Palm Beach, is considered the premier grapefruit production area in Florida. Huanglongbing is decimating the IR grapefruit industry. Commercial fruit-bearing acreage declined from 107,800 (2000/01) to less than 37,500 acres (2015/16) due to the disease. During this period, production decreased from 46M to 10.8M boxes. This severe impact is caused by the high susceptibility of grapefruit, especially Ray Ruby, to the HLB disease.

Field variety trials are a simple but effective tool to evaluate plant horticultural characteristics under different environmental conditions in an attempt to speed up the evaluation, selection, and commercial adoption process for new varieties. Large-scale, rapid testing of HLB-tolerant varietal selections depends on reliable data, and the UF/IFAS/IRREC Millennium Block project addresses the need of establishing field plantings at the Indian River District to generate information of vital importance to growers (Fig. 1).



Fig. 1. UF/IFAS/IRREC and USDA/ARS location, with the 40-acre Millennium Block indicated at the center.

Upon discovery of tolerant new grapefruit selections from Florida's citrus breeding programs, the IR citrus groves may be able to sustain fruit yield and quality due to potentially higher tolerance to HLB. There is strong

## **MILLENNIUM con't. from page 2**

demand from IR citrus growers for researchers to find new selections that will sustain the social, economic, and cultural importance of high-quality grapefruit to meet domestic and foreign market demands, supporting growers staying in business. The UF/IFAS/IRREC citrus faculty members and UF/IFAS/Citrus REC and USDA/ARS citrus breeders met with growers of the IR Citrus League to identify the available selections and collectively decided on the scion selections to plant and evaluate under high levels of disease pressure. We focused on using Department of Plant Industry (DPI) clean materials only to make quick planting decisions based on promising results.

Rootstocks are also important in the plant-HLB complex due to their influence on scion performance and potential ability to confer HLB tolerance within the scion as well. UF/IFAS and USDA/ARS recently released a number of new rootstocks. Several scion and rootstock variety trials have been conducted in the IR, mostly pre-HLB. A summary of UF/IFAS trials was recently published and can be viewed at the website: [http://www.crec.ifas.ufl.edu/academics/faculty/castle/pdf/Rootstock\\_Options\\_Based\\_on\\_Field\\_Trials.pdf](http://www.crec.ifas.ufl.edu/academics/faculty/castle/pdf/Rootstock_Options_Based_on_Field_Trials.pdf). USDA/ARS rootstock trials for grapefruit have also been recently published but yield data was not available. A new variety trial, locally testing the most promising commercial selections, is vital to help support grower decisions regarding new grapefruit plantings. With the drastic impact that HLB is having on fresh market grapefruit, navels and mandarins are options for IR citrus growers to diversify their portfolio and to manage risk. Rootstock effects on newly released navel oranges and mandarins are currently unknown, particularly with regard to juice quality and granulation. The lack of data further supports the independent rootstock trials using navels and mandarins for the IR fresh fruit industry.

Within these new trials, new grapefruit varieties and rootstocks will be evaluated using statistically valid experimental designs to assess HLB tolerance under IR environmental conditions and pest and disease pressure (including psyllids, root weevils, and other pests). We will employ regular pest and disease management practices to avoid severe infestations; however, the goal is not to use an aggressive psyllid control program since trees have to be challenged to express their potential against HLB.

**See MILLENNIUM page 4**

## **History of the new UF/IFAS/IRREC Millennium Block**

Former UF/IFAS IRREC director Dr. Peter Stoffella identified the need to replant citrus trees at the IRREC and invested approximately \$100K during two years (2014-2016) to prepare the area for his successor and the IRREC citrus horticulturist (position vacant at the time). Dr. Ronald Cave – the new center director – expressed interest in the project, and in August 2016 secured \$80K seed funding from the UF/IFAS Dean of Research to purchase citrus trees and cover the mixed variety trial planting costs. The IRREC recently hired Dr. Ferrarezi to lead the Citrus Horticulture program. He is a horticulturist with expertise in citrus nursery production, irrigation, plant nutrition, and variety trials. Ferrarezi's lab manages four legacy projects related to plant density, fertilization sources and irrigation methods at the 20-acre IRREC Research Grove.

Upon his hiring, Dr. Ferrarezi discussed the proposed project with IRREC faculty members and invited the UF/IFAS Citrus Research and Education Center (CREC) breeders to provide technical input about potential candidates. Breeders supported the idea, and the study was allocated to the IRREC Millennium Block area (42 acres available). Once a list of potential selections was generated, the project was presented to the grower-members of the Indian River Citrus League (IRCL) and Treasure Cost Agricultural Research Foundation (TCARF), who provided substantial input to the proposal so that it meets grower needs and expectations. Several IRCL board and production committee meetings were organized during the last year to discuss this proposal. The attendees were mainly growers, industry representatives, Florida Citrus Research and Development Foundation (CRDF) members, and UF/IFAS and USDA-ARS breeders and scientists. The group identified the need to use DPI-clean materials only, determined the best field plot size to allow growers to visually identify the best performer selections and compare with the statistical data obtained by the research team to make quick planting decisions based on promising results, and collectively decided the selections to plant. The IRCL request was to focus on grapefruit selections, and we included all available new grapefruit scion selections and decided on using grapefruit in the rootstock trial, devoting more than half of the field area to grapefruit. Follow-up meetings will discuss a comprehensive crop management system to provide the best tree care to express each selection's maximum genetic potential.

## **MILLENNIUM con't. from page 3**

Within Experiment 1 (a scion variety trial), the objective is to assess performance of new grapefruit scions in areas where HLB is endemic and extensively present. In this test, 19 grapefruit selections and 3 rootstocks will be evaluated. Each experimental unit will have 5-tree plots replicated 6 times. The experimental area will consist of approximately 8 acres, with 227 trees/acre and trees spaced 8' x 24'.

The objective of Experiment 2 (a rootstock variety trial) is to evaluate the influence of UFR rootstocks on grapefruit, navel and mandarin HLB susceptibility in the IR District for fresh fruit market. In this trial, 'Ray Ruby' grapefruit, '56-11' navel orange, and 'UFR-950' mandarin will be grafted on 36 to 38 different rootstocks. All tree variety combinations will be arranged in a randomized complete block design consisting of 5-tree plots replicated six times per combination. Trees will be planted at same density and spacing as in Experiment 1.

In both experiments, tree size, fruit yield, fruit size, juice quality, insect pest and disease incidence, HLB incidence and severity, and leaf nutrient content for each selection will be measured and comparatively analyzed. Our goals are to rank the disease progression in the tested selections to identify a potential grapefruit scion and rootstock combination to make citrus production attractive for fresh grapefruit growers. The comprehensive rootstock variety trial, including most UFR rootstocks, aims to evaluate grapefruit, mandarin and navel in the IR District. This Millennium Block project is the first of its kind by IRREC scientists since the 2005 canker eradication program. The field trials are timely and considered an imperative approach for scion and rootstock evaluations benefitting the IR fresh fruit production capability. Full HLB tolerance will be assessed over a 6-year period.

### **Acknowledgements**

We thank UF/IFAS Dean of Research Dr. Jacqueline Burns for seed funding for the Millennium Block project, and the following collaborators: Jude Grosser, Fred Gmitter, Ed Stover, Kim Bowman, Peter Spyke, William Castle, Doug Bourque, Daniel Scott, Tom Stopryra, IRCL, Brian Scully, Randy Burton, Alan Wright, Mark Ritenour, Jawwad Qureshi, Liliana Cano, and Zhenli He.



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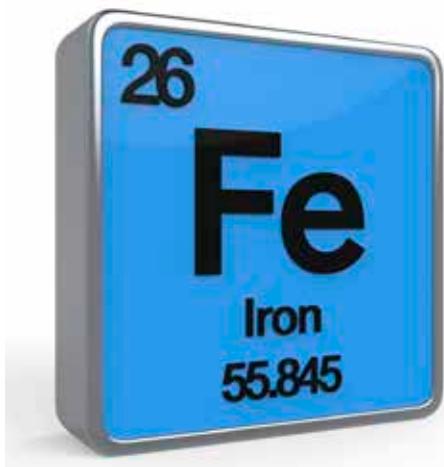
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# Iron Project Update • • • • •

By Randall P. Niedz, Ph.D.  
USDA/ARS



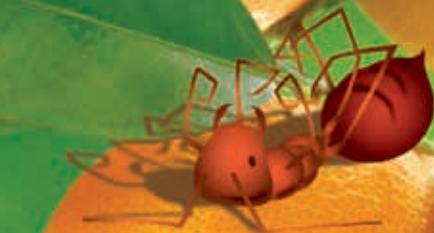
The USDA, Indian River Citrus League, and citrus growers are working together to test the effects of ferrous iron ( $\text{Fe}^{2+}$ ) on HLB-infected citrus trees. Ferrous is the form of iron used by the plant. The basic strategy is to use an organic acid (e.g., citric acid) to stabilize ferrous iron and prevent it from oxidizing into ferric iron ( $\text{Fe}^{3+}$ ). The underlying idea includes two basic components: 1) HLB has compromised the ability of the tree to utilize iron, and/or 2) ferrous iron, not ferric, is required for the Fenton reaction, and the Fenton reaction may be useful for increasing a tree's resistance to HLB. Thus, providing the tree with ferrous iron directly may circumvent the effects of HLB and possibly increase

the tree's resistance. A video explaining this approach in more detail is available on the Indian River Citrus League website – click [here](#).

There are multiple variables that require testing such as application method (foliar, irrigation), iron concentration, application frequency, and organic acid type and concentration. To help standardize the iron solutions used, the USDA has developed an assay to determine the total concentration of Fe and the proportion of the total Fe that is  $\text{Fe}^{2+}$ . Anyone interested in this approach can bring their solutions to the USDA for analysis in Dr. Randy Niedz's lab. Solutions can be commercial products, custom solutions, tank mixes, or collected from a tree emitter. Knowing the total Fe and how much of the total Fe that is  $\text{Fe}^{2+}$  at the various process points should help everyone calibrate their systems. The USDA has started treating small HLB-infected greenhouse trees, and some growers are testing using foliar and/or irrigation. Additional information on testing, including the calculations to make the ferrous solutions, is available on the Indian River League website. To ensure that all information about this project is rapidly available, the IRCL website will continually update with new information and observations about this project.



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# Tree Assistance Program

## Signup Information • • • • • • • • • • • •

USDA's Farm Service Agency recently released signup information for the [Tree Assistance Program](#), a nationwide program that provides orchardists and nursery tree growers with cost share assistance to replant eligible trees, bushes, and vines following a natural disaster.

The Bipartisan Budget Act of 2018 prescribed several changes to the program, including the removal of the \$125,000 per person and legal entity payment limitation. The [notice](#) outlined when producers should file applications for any recent losses, given the changes to the program.

Eligible producers should file for TAP assistance by the later of these two dates:

- 90 days of the disaster or when damages from the disaster are noticed; or
- 60 days after the regulation is published on the Federal Register later this summer.

The following producers can file applications:

- Producers who did not previously apply for TAP for 2017 or 2018 losses; and
- Producers who had applied and received an adverse determination that their 2017 or 2018 TAP application was filed late.

Additionally, producers with 2017 losses can also file an application or revise an original application because of the changes made through the Act.

For more information on TAP, producers should contact their [local USDA service center](#).



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# Upcoming Events

- June 13-15, 2018 – The Florida Industry Annual Conference  
Bonita Springs, FL (Hyatt Regency Coconut Point)
- August 15-16, 2018 – Citrus Expo  
North Ft. Myers, FL (Lee County Civic Center)
- January 22, 2019 – Indian River Citrus League Banquet  
Vero Beach, FL (the Club at Pointe West)
- January 23-24, 2019 – 2019 Florida Citrus Show  
Ft. Pierce, FL (Fenn Center)
- March 29, 2019 – IRCL River Fun Shoot  
Okeechobee (Quail Creek Plantation)

**Newsletter Advertising** – Publication schedule is September through June.

For more information on these opportunities, please contact the League office.  
772-595-5026 or [info@ircitrusleague.org](mailto:info@ircitrusleague.org)



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