

IMPROVED DATA COLLECTION OF HLB-AFFECTED AND "HEALTHY" FRUIT FROM CITRUS FIELD TRIALS

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Most citrus trees in Florida are infected with Huanglongbing (HLB; or citrus greening) and produce both "healthy" fruit and "greening" fruit. "Greening" fruit express visible symptoms of HLB infection, while "healthy" fruit, though HLB-infected, do not show noticeable HLB symptoms. Consumers can taste the inferior quality of "greening" fruit, but "healthy" fruit tastes similar to fruit from non-HLB-infected trees. Besides overall yield, it is important to know which treatments increase the percentage of "healthy" fruit from HLB-infected trees. For example, harvested fruit from the IRREC Millennium Block trial of different grapefruit-pummelo hybrids were manually separated into "healthy" and "greening" categories, revealing that the percentage of "healthy" fruit ranged widely depending on variety: from a low of 17% to a high of 76%.

To further this effort, the Citrus Research and Development Foundation (CRDF) provided funds to purchase a Compac 900CIR vision system with two visible-spectrum cameras, an infrared camera, and an Inspectra 1, R2 near-infrared camera (Fig. 1). This system has been in service at IRREC since 2020 collecting data on individual fruit weight, dimensions, density, and size distribution. It is frequently used not only on our own field projects and those of our collaborators but also for other projects upon request. The long-term plan has always been to train the system to identify and separate "greening" vs. "healthy" fruit, but until recently, funds were unavailable to develop this capability.

See DATA, page 2

DATA, con't from 1

In 2024, funding was received from the "Grove-First" project (USDA National Institute of Food and Agriculture project # 2020-70029-33176) to hire a postdoctoral research associate to spearhead research to develop the "greening" vs. "healthy" fruit separation capability. Funds were also included to upgrade the Compac system to the latest cameras and technology, including Compac's latest artificial intelligence programming. This upgrade is anticipated to be completed before the 2025-26 season.



Fig. 1: Dr. Ketan Shende operating the IRREC Compac grading system to evaluate fruit size characteristics of samples from a "Grove-First" field plot.

Even before the system upgrade, work is underway detailing key fruit characteristics that might be used to distinguish "greening" vs. "healthy" fruit. We have trained the current system to identify both the stem and blossom ends of the fruit and are evaluating the angle between them, referred to as the stem angle, as the first of many distinguishing features of "greening" fruit. In "healthy" fruit, the stem angle is approximately 180 degrees, while "greening" fruit should be less. Ray Ruby grapefruit from both Citrus Under Protective Screen (CUPS) and unprotected, open field locations were sampled and initially processed through the Compac system to measure stem angle. The fruit were then cut lengthwise, and the stem angle measured manually, along with internal Brix and titratable acidity. Images were also collected using different cameras [including hyperspectral (Fig. 2), RGB, etc.], and advanced deep learning

methods using state-of-the-art open-source models will be used to detect features indicative of HLB conditions. This will enable differentiation between affected and unaffected fruits. Eventually, we also

hope to train the system to classify each fruit with other characteristics, such as "off-bloom" fruit, those with granulation, etc., to generate a complete distribution understanding of fruit quality characteristics from any lot of fruit.

Fig. 2: Dr. Tom Burks adjusts the setting of a hyperspectral imaging system used to evaluate peel of "health" and "greening affected grapefruit.



PROGRAMS BENEFITING RIVER GROWERS AND THE ENTIRE INDUSTRY

Through the years, the League has taken the lead on spearheading programs to benefit packinghouses and growers. Here are just a few:

Tree Assistance Program (TAP) - Florida Citrus Greening

Working with staff at USDA's Farm Service Agency (FSA), a program was developed to provide cost-share to growers in putting trees in the ground. The Farm Bill authorized the Tree Assistance Program (TAP) to provide financial assistance to qualifying citrus and nursery tree growers to replant or rehabilitate eligible trees that experienced damage from natural disaster and now has expanded to HLB losses. A special thanks to Rick Dantzler, when he was the director of FSA, for his leadership on this important issue.

Turnpike Signage and License Tags

Up until the early 1980s, the Florida Department of Citrus was not promoting Indian River citrus and to overcome that, the League worked with the Florida Turnpike Authority initiating the ideal of stand-alone signage proudly urging the four-million cars per day to eat Indian River grapefruit and to drink Florida orange juice. The stand-alone signs are unique on the turnpike system constantly reminding the millions of tourists, traveling in our state, to buy Florida citrus.

USDA Horticultural Lab Relocation from Orlando to Ft. Pierce

In 1993, the League along with a large, local delegation, from the east coast was successful in being awarded the USDA lab in Ft. Pierce.

Target Assistance for Specialty Crops (TASC)

In the 1990s, the League was successful in crafting a USDA program to help with sanitary and phytosanitary technical barriers that impacted not only Indian river fruit but all specialty crops from the United States.

Best Management Practices

This program morphed from a program exclusively for Indian River growers to a statewide industry standard for providing cost-share for projects specific to water conservation and water quality. The Indian River Citrus League received an environmental award from the commissioner of agriculture for creating the BMPs Program.

Greasy "Green" Spot Research

Through the League's initiative, in 2022, CRDF approved research funding for, "Evaluating the Role of Greasy Spot and Peel Disorders in the Greasy Green Defect on Citrus Fruit". This disorder has created low pack outs at the packinghouses. The League reached out to Dr. Mark Ritenour, IFAS/IRREC to lead the research on the three-year project. It is hoped that this research will address the need for combating this disorder so that pack outs will increase thus providing a better grower return and future for our industry.

PROGRAMS, con't from 3

USDA Grapefruit Juice Purchases

The League was instrumental in partnering with USDA FAS to craft a program that utilizes the buildup of grapefruit juice inventories for use in school lunch and food assistance programs. These purchases assist the growers in our region and state by reducing the building inventories of grapefruit juice. The recent purchases have focused on fresh grapefruit.

MAC Project

This grower-driven project formed back in 2018 to utilize key-selected rootstocks and scion combinations with the goal of identifying those combinations that show tolerance and resistance to HLB. This 300-acre plus grapefruit trial with the bulk of the acreage here in the River growing region, as well as numerous sites on the ridge and gulf growing area. The success of the MAC Project help to birth the CRAFT Program. A special thanks to Pat Schirard for his leadership on this issue.

Water Farming (Dispersed Storage)

With the advent of greening in 2005, the League looked for options for growers to maintain their acreage that was infected from greening or canker. Many options were considered but no other crop could provide financial relief to the growers. Knowing of the importance of the Indian river lagoon, to the east coast, the idea of farming water was presented to the water management districts to help with the health of the lagoon and to keep the agricultural base in the region viable. There are currently over 20 water farms in Florida and more on the drawing board.

Florida Citrus Show

For 79 years, the League has worked with UF/IRREC and sponsors to host the Florida Citrus Show. The show originally rotated between three counties (Brevard, Indian River, St. Lucie) but now has found a home on the campus of the USDA and UF/IRREC facilities in Ft. Pierce.

Fun Shoot

The League along with Hale Groves, hosts a popular fun shoot for growers and sponsors in our region. It is held in January of each year and has been a tremendous success.

Upper St. Johns Project

Starting in the 1980s to present day, the League has worked closely with the SJRWMD to create the 200,000-acre Upper St. Johns Project. The restoration of this massive area spans over four decades and has received numerous environmental awards from around the world and the League was instrumental in helping guide the creation of this project.

Governor Rick Scott Tour of Indian River Growing District

In 2012, the League was successful in having then Governor Rick Scott toured Indian River area to highlight the impact of greening on the industry. The Governor was so moved by the impact this disease was having; he requested the League EVP to come to Tallahassee with data on the financial impact on our industry. The result was an increase in state funding from approximately \$400,000 at the time to \$20 million to help fight greening.

League Initiates Escape Tree Procedure and Permit for Growers

The rediscovery of the Donaldson tree at USDA's Whitmore Farms a few years ago, which generated interest within the industry and research community also saw the need for a streamed-line procedure of how to exactly collect and report potentially disease-resistance trees. Teaming up with the Division of Plant Industry, a process was established to assist growers in navigating through the process.



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INDIAN RIVER CITRUS LEAGUE ON-LINE STORE

Come visit the League's on-line store where you will find the iconic Indian River Grapefruit tag. In addition, we have the cap featuring the Indian River Grapefruit tag patch along with other goodies promoting the world-famous Indian River citrus growing district.

Check out the store at <u>www.irgrapefruitshop.com</u> to order your merch!





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April 10, 2025 May 12, 2025 June 12, 2025 July 11, 2025

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March 28, 2025 Lakeland

Florida Citrus Industry Conference June 11-13, 2025 Bonita Springs

Citrus Expo

August 20-21, 2025 Florida State Fairgrounds Tampa



UF/IFAS'S KISTLER REQUESTS STAKEHOLDERS' INPUT

Survey is open now and will be available through March 28

Mark Kistler, a proven national leader in agricultural and natural resources, invites your views on topics to support strategic positioning efforts in your community as we move further into the dynamic 21st century.

Kistler is a professor and director for your University of Florida/IFAS Indian River Research and Education Center, an American Association for Agricultural Education Fellow, a noted University of Florida graduate with a Ph.D. in agricultural education from Texas A&M University, seeks your participation in a brief online survey. Click here to access the survey.

"On behalf of the university, we greatly value agricultural and natural resource stakeholder's views who serve the Indian River region, including Okeechobee," Kistler said. "The stakeholders' input will greatly assist as we direct our research, Extension and educational programs to meet the region's needs," said Kistler.

The survey is open now and will be available through March 28. Responses will be anonymous.

Kistler said the Indian River Research and Education Center (IRREC) since 1947 has served the agricultural and natural resources interests along the coast from Brevard to Martin and Okeechobee counties.

Kistler leads 12 faculty members, postdoctoral research associates, visiting scientists, graduate students who pursue master's and doctoral degrees, and more than 50 staff members. The center is part of UF's statewide effort to lead agricultural and natural resource protection through research, extension, and education. Research at IRREC involves crop production, invasive species management, aquaculture, soil and water science, and sustainability.

Kistler brings over 37 years of experience in strategic planning and educational program development, and according to FFA leaders, Kistler's talents have risen to a national level. Kistler's career trajectory includes roles as an Extension director and agent for three of Florida's counties, professor at the Texas Tech University, University of Florida, North Carolina State University, and Dean for Abraham Baldwin Agricultural College.

In his initial months with IRREC, Kistler structured and launched this strategic planning effort, appointed new advisory committee members, and formed a vision for the center's next five years. Kistler recruited new members to the board to oversee its success as a regional leader with worldwide research collaborations.

"Join us to harness the opportunity and position IRREC as the leader in agricultural and natural resource research, Extension, and thought leadership," Kistler said. "We aim to direct our efforts, confront emerging agricultural, environmental, economic, and societal issues, and develop a strategic response with next-generation solutions."



CRAFT CYCLE 6 AND ETT ROUND 3 UPDATE



The CRAFT Foundation received applications for almost 10,000 acres of new planting proposals and applications for nearly 47,000 acres for inclusion in the Existing Tree Therapies (ETT) program. This demand exceeded the funding available for both programs. The selected applicants have received their contracts.

Any applications that were not selected for funding during this initial review have been added to the waitlist. As funding becomes available, additional contracts may be extended to applicants on the waitlist. The CRAFT team is excited to work with our participating growers as they

get started with these new projects. If you have any questions, please contact Steven Hall, CRAFT Executive Director, at *Steven@craftfdn.org* or 863-333-2931.

New CRAFT Data Portal

The CRAFT program was established in 2019 with a mission focused on applied research through grower-driven field trials to determine the efficacy of various HLB treatments in commercial citrus groves. A critical part of this mission includes collecting data on these field trials and developing an integrated data management system to present the results. Six years later, with

over 20,000 acres of new plantings and over 80,000 acres additional Existing Tree Therapies trials under contract, the program is still dedicated to achieving its mission.

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A recent milestone for the program is the launch of the new CRAFT Data Portal. As part of the CRAFT mission, we rely on our grower's commitment to collect and submit their production information into the data portal. Growers may find it convenient to submit their data in real-time or on a quarterly basis.

Growers may access the CRAFT Data Portal via the CRAFT website at https://craftfdn.org. All growers have received an email providing them with their new user information for the portal. A video user guide has been created to assist growers with the submission process, which is available at https://youtu.be/GdadnWu5u-s. Please contact CRAFT Assistant Program Manager

Tina Buice at *Tina@craftfdn.org* if you have any questions.







2025 MISS FLORIDA CITRUS



Halle Burton of Gainesville, Fla., was crowned the new 2025 Miss Florida Citrus on March 8, 2025, at Polk State College's Fine Arts Theater in Winter Haven, Fla.

The Miss America preliminary pageant delegates were judged on their Personal Interview, Community Service Initiative/On-Stage Question, Health & Fitness, Talent, and Evening Gown attire, with over \$2,000 in scholarships and prizes awarded to the top five finalists. Both titleholders will go on to compete in the Miss Florida Pageant, which takes place in Lakeland June 26-28, 2025, the winner of which will compete in the Miss America pageant this coming September in Orlando, Fla.

The event was hosted by Miss Florida Citrus 2020, Leila Sabet, and included performances by Miss Florida Citrus 2022, Payton Barrington, who sang the National Anthem and "I Didn't Know My Own Strength," and outgoing Miss Florida Citrus 2024, Alana Scheuerer, who performed both a solo tap dance to "Dance With Somebody" and a stirring tap dance duet with 2024 Miss Florida's Teen, Ireland Harkins, to the song "Lean On Me."

Halle Burton, age 21, is pursuing a Bachelor of Science in Public Relations at the University of Florida and works as a PR intern for UF's Office of Strategic Communications, reports for UF News, and interns as a social media content creator for the Florida Gators. She also volunteers for UF's Athletic Association, working all sports events with the marketing staff. With a lifelong love for football, she aspires to become the first female Vice President of Communications for the Tampa Bay Buccaneers.

She is a Florida Blue Key Honor Society member, UF Student Senator, and Co-Chair of the Mental Health Ad-Hoc Committee. She serves as Director for Florida's Future Leadership Program, Member of Keystone Cohort 4, Alpha Chi Omega VP Membership Programming (2024) and VP Philanthropy (2023). Additionally, she is a Dillard's Ambassador, Gatorette Twirler Captain, Vice Chair for the Student Government Institute, UF President's List Scholar, Multi-year Presidential Service Award Recipient, Miss Florida 2024 2nd-Runner Up, and Miss Florida 2023 Social Media Scholarship recipient.

Founded over eight years ago, her Community Service Initiative (CSI), Serve Our State (S.O.S.), advocates for volunteerism and its built-in mental health benefits. Her talent was Baton Twirling to "Born to Hand Jive" from the movie, "Grease," and she has performed in Peru's International Festival de Primavera, Ireland's St. Patrick's Day Parade, the Macy's Thanksgiving Day Parade, and the Tournament of Roses Parade.

The Florida Citrus Queen Pageant began in 1924 and has been part of the Miss America Organization off and on throughout the years, with the name changing to Miss Florida Citrus in 1984. Over the years, the representatives have traveled throughout the world promoting the Florida citrus industry. This year marks 101st year since the first Florida Citrus Queen was chosen on the shores of Lake Silver in Winter Haven, Fla.

BEN ALBRITTON PROMISES FLORIDA CITRUS WON'T WILT ON HIS WATCH

Months after promising a 'Rural Renaissance,' the Senate President is looking to follow through.

Senate President Ben Albritton offered a simple message at the start of Session: "Agriculture matters." Handing out challenge coins marking the Florida Heartland, the Wauchula Republican touted his own personal and professional roots in citrus country.

"I was born and bred in Florida citrus and this vital industry is not going down on my watch," Albritton said. "Research and new technologies are offering a new hope for the future of Florida citrus. We're on the edge of something special. Florida citrus is making a comeback, one tree at a time."

Months after he took the gavel as Senate President with a promise of a "Rural Renaissance," Albritton repeated the phrase and made clear that his priorities include expanding education, health care and infrastructure resources in the undeveloped parts of Florida that long held up its largest industry.



He said Sen. Corey Simon, a Tallahassee Republican, would carry a key legislative proposal advancing rural Florida's interests.

"This comprehensive package creates opportunities for our rural communities to expand education offerings, increase health care services and modernize commerce, in addition to an investment in farm-to-market roads to support the agriculture supply chain that feeds communities across the state." Albritton said.

He also jumped on the federal theme of <u>efficiency</u>, and noted that Florida for nearly two decades has had its own <u>Government Efficiency Task Force</u>, on which Albritton has served. That has recommended various ways of simplifying and providing flexibility to government processes.

"These enhancements will allow our agencies to respond to changing situations quickly and efficiently, spending less time on bureaucratic paperwork and more time on their core mission to get the job done for Floridians," Albritton said. "It's not enough to know government is completing a task or providing a service, we need to know if that service is being provided well, which means we need to have new, innovative ways to measure performance."

He also said the state needs to beef up its cybersecurity and said that can be done without creating government waste.

"Under no circumstances, and I repeat, under no circumstances, do I want to create an expensive, bloated bureaucracy of former C-Suite executives from Silicon Valley," Albritton said. "But, without fail, we must have top talent to win this battle against those who seek to use technology to harm us."

See ALBRITTON, page 11



ALBRITTON, con't from 10

He also promised accountability to insurance companies, something demanded by voters in the wake of several major hurricanes in recent years.

"We'll hold insurance companies accountable for the rates they charge and the services they provide when disaster strikes," Albritton said. "They aren't going to manipulate the system. And neither is any other industry. Not on my watch."

Albritton also spotlighted several pieces of legislation he wants advanced this year. That included bills on early autism diagnosis sponsored by Sen. Gayle Harrell, veteran support by Sen. Danny Burgess, mental health by Sen. Jennifer Bradley, child exploitation protections by Sen. Erin Grall, and Everglades restoration by Sen. Jason Brodeur.

He also spotlighted another Simon bill furthering efforts to reduce bureaucracy in public education. Senate Majority Leader Jim Boyd voiced a similar conservative agenda in a written statement following Albritton's speech. "As the Florida Legislature embarks on the 2025 Legislative Session, the Florida Senate Republican Caucus remains steadfast in advancing policy that supports Floridians," Boyd said. "The robust initiatives of Senate President Ben Albritton will create a stronger and more prosperous Florida, improving Florida's child welfare system, bolstering rural economic development and infrastructure, enhancing government efficiency and accountability, and identifying tax relief opportunities for hardworking Florida families. This session is expected to be productive as Senate Republicans collaborate to pass a balanced budget and enact conservative legislation that addresses the needs and protects the freedoms of the great citizens of Florida."

Source: Florida Politics



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Food Safety Event Calendar

Winter/Spring 2025



Produce Safety Alliance Grower <u>Training</u>

A one-day course for produce growers and packers who fall under FSMAs Produce Safety Rule.

- January 15th West Palm Beach https://psa011525.eventbrite.com
- March 5th Quincy <u>https://psa030525.eventbrite.com</u>
- March 27th Dover https://psa032725.eventbrite.com
- April 1st Immokalee https://psa040125.eventbrite.com

Remote- Produce Safety Alliance Grower Training

A three-day, three-hour virtual course for fruit and vegetable growers and packers who fall under FSMAs Produce Safety Rule.

- February 4th 6th
 https://psa020425.eventbrite.com
- April 8th 10th
 https://psa040825.eventbrite.com
- June 3rd 5th https://psa060325.eventbrite.com





Remote HACCP for Florida Fresh Fruit & Vegetable Packinghouses

A four-day virtual course focused on HACCP principles for fruit and vegetable packinghouses.

January 21st – 24th
 https://haccp012125.eventbrite.com



Food Safety Supervisor Training

A one-day course focused on food safety supervisor duties, regulatory /audit requirements, the "why" behind the requirements, and adult learning.

• January 16th, 2025 – Palm Beach

https://fsst011625.eventbrite.com



Food Safety Preventive Controls Alliance Training

A three-day course which teaches participants how to develop and document a Food Safety Plan based on the requirements of FSMA's Preventive Controls for Human Foods Rule for their specific operations.

 June 11th – 13th Lake Alfred https://fspca061125.eventbrite.com

For registration questions, contact Sarah McCoy sarahmccoy@ufl.edu



ircitrusleague.org for further details on the opportunities mentioned.

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- Resolution should be a minimum of 300 dpi at actual size.
- 72 dpi images pulled from websites are not acceptable.
- Line art should be scanned at a minimum of 600 dpi.

File Format

- PDF files and InDesign files are preferred (collected output to include layout, linked pictures, embedded pictures, color profiles, screen fonts and printer fonts).
- Other file formats accepted: eps (Adobe Illustrator), jpg (Adobe Photoshop)

GETTING INVOLVED.

MEMBERSHIPOPPORTUNITIES

Our Associate Membership provides opportunities to network with existing customers and potential customers by providing opportunities to sponsor events scheduled throughout the year.

Their partnership with our organization is important to us.

If interested in joining our organization, please contact the League office for further details. 772-595-5026 or karen@ citrusleague.org.

Indian River Select John L. Minton, CPA **MBV** Engineering MetLife Investment Management Natalie's Orchid Island Juice Co., Inc. Nichino America, Inc. Palmdale Oil Company Peace River Citrus Products, Inc. Perricone-Schirard Grove Rabo AgriFinance Saunders Real Estate Soilcea Syngenta

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