134th Annual Meeting of the
FLORIDA STATE
HORTICULTURAL SOCIETY

September 26 - 28, 2021
Hilton Daytona Beach Oceanfront
Resort Daytona Beach, FL
# 2021 Program Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Overview</td>
<td>3</td>
</tr>
<tr>
<td>2020-2021 FSHS Board of Directors</td>
<td>6</td>
</tr>
<tr>
<td>2021 Meeting Facilitators</td>
<td>7</td>
</tr>
<tr>
<td>Meeting Sponsors</td>
<td>7</td>
</tr>
<tr>
<td>Patron Members</td>
<td>8</td>
</tr>
<tr>
<td>Sectional Vice-Presidents</td>
<td>9</td>
</tr>
<tr>
<td>Presentations, Publications and Submission Guidelines</td>
<td>8</td>
</tr>
<tr>
<td><strong>Technical Program Schedule</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Poster Session</strong></td>
<td>10</td>
</tr>
<tr>
<td>Agroecology &amp; Natural Resources</td>
<td>12</td>
</tr>
<tr>
<td>Citrus</td>
<td>15</td>
</tr>
<tr>
<td>Handling &amp; Processing</td>
<td>21</td>
</tr>
<tr>
<td>Ornamental, Garden, &amp; Landscape</td>
<td>25</td>
</tr>
<tr>
<td>Krome Memorial Institute</td>
<td>29</td>
</tr>
<tr>
<td>Vegetable</td>
<td>34</td>
</tr>
<tr>
<td>In-Service Training</td>
<td>43</td>
</tr>
<tr>
<td>Mango Summit</td>
<td>44</td>
</tr>
<tr>
<td>Hilton Daytona Beach Resort Map</td>
<td>46</td>
</tr>
<tr>
<td>Sponsors</td>
<td>47</td>
</tr>
</tbody>
</table>
## Program Overview

**Registration Desk Hours – Convention Registration Desk South**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday Sep. 26</td>
<td>12:00 PM—6:00 PM</td>
</tr>
<tr>
<td>Monday Sep. 27</td>
<td>7:30 AM—5:00 PM</td>
</tr>
<tr>
<td>Tuesday Sep. 28</td>
<td>8:00 AM—12:00 PM</td>
</tr>
</tbody>
</table>

**Sunday Afternoon—September 26**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00—3:00</td>
<td>Poster Session Set up, Prissy Fletcher</td>
<td>Atlantic Avenue Pre-function</td>
</tr>
<tr>
<td>3:30—3:45</td>
<td>Opening Ceremony, Jeffrey Williamson</td>
<td>Grand Salon 4-5</td>
</tr>
<tr>
<td>3:45—4:15</td>
<td>Speaker: Suzanne Stapleton, Agricultural Sciences &amp; Digital Scholarship Librarian UF</td>
<td>Grand Salon 4-5</td>
</tr>
<tr>
<td>4:15—4:45</td>
<td>Awards Ceremony, Noris Ledesma</td>
<td>Grand Salon 4-5</td>
</tr>
<tr>
<td>4:45—5:00</td>
<td>Opening Remarks: Dr. Chris Gunter, UF/IFAS Hort Science Chair</td>
<td>Grand Salon 4-5</td>
</tr>
<tr>
<td>5:00—6:00</td>
<td>Welcome Reception: Must Wear your Badge or Purchase a Guest Ticket to Attend</td>
<td>Oceanview Room &amp; Terrace</td>
</tr>
</tbody>
</table>

**Monday Morning—September 27**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:15—9:00</td>
<td>General Session</td>
<td>Grand Salon 4-5</td>
</tr>
<tr>
<td>8:15—8:30</td>
<td>Welcome &amp; Presidential Address: Noris Ledesma, FSHS President</td>
<td>Grand Salon 4-5</td>
</tr>
</tbody>
</table>
| 8:30—9:00 | Speaker: Manuel Michelle  
| 9:00—9:45 | Poster Session/Coffee Break                                           | Atlantic Avenue Pre-function |
Concurrent Monday Morning Sessions:

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:50—12:15</td>
<td>Agroecology &amp; Natural Resources</td>
<td>Grand Salon 7</td>
</tr>
<tr>
<td>9:50—12:00</td>
<td>Citrus</td>
<td>Grand Salon 1</td>
</tr>
<tr>
<td>9:50—12:00</td>
<td>Handing &amp; Processing</td>
<td>Grand Salon 8</td>
</tr>
<tr>
<td>9:50—12:00</td>
<td>Krome Memorial Institute</td>
<td>Grand Salon 2</td>
</tr>
<tr>
<td>9:50—12:00</td>
<td>Ornamental, Garden, &amp; Landscaping</td>
<td>Grand Salon 3</td>
</tr>
<tr>
<td>9:50—12:00</td>
<td>Vegetable</td>
<td>Grand Salon 4/5</td>
</tr>
</tbody>
</table>

Monday Lunch

12:00—1:30 Lunch (on your own)

Monday Afternoon

Concurrent Monday Afternoon Sessions:

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:20—4:00</td>
<td>Agroecology &amp; Natural Resources</td>
<td>Tour</td>
</tr>
<tr>
<td>1:20—3:30</td>
<td>Citrus</td>
<td>Grand Salon 1</td>
</tr>
<tr>
<td>1:20—3:30</td>
<td>Handing &amp; Processing</td>
<td>Grand Salon 8</td>
</tr>
<tr>
<td>1:20—3:45</td>
<td>Krome Memorial Institute</td>
<td>Grand Salon 2</td>
</tr>
<tr>
<td>1:20—2:00</td>
<td>Ornamental, Garden, &amp; Landscaping</td>
<td>Grand Salon 3</td>
</tr>
<tr>
<td>1:20—4:45</td>
<td>Vegetable Session 1</td>
<td>Grand Salon 4/5</td>
</tr>
<tr>
<td>2:15—3:30</td>
<td>Vegetable Session 2*</td>
<td>Grand Salon 3</td>
</tr>
</tbody>
</table>

* This is a concurrent session for the vegetable session after Ornamental, Garden

Tuesday Morning

7:30—8:45 Horticultural Crops Breakfast (Event ticket required)

Invited Speaker: Chef Allen Susser
Title: “Feasting on Mangos” Ticket Required
<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00—9:45</td>
<td>FSHS Annual Business Meeting</td>
<td>Grand Salon 4/5</td>
</tr>
<tr>
<td></td>
<td>Student Competition and Travel Awards</td>
<td></td>
</tr>
<tr>
<td>9:30</td>
<td>Coffee</td>
<td></td>
</tr>
</tbody>
</table>

**Concurrent Tuesday Morning Sessions:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:50—11:30</td>
<td>Citrus</td>
<td>Grand Salon 1</td>
</tr>
<tr>
<td>9:50—12:00</td>
<td>Vegetable—Session 1</td>
<td>Grand Salon 6/7</td>
</tr>
<tr>
<td>9:50—11:45</td>
<td>Vegetable—Session 2</td>
<td>Grand Salon 8</td>
</tr>
</tbody>
</table>

**Tuesday Lunch**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00—1:00</td>
<td>Extension Luncheon (Event ticket required)</td>
<td>Grand Salon 4/5</td>
</tr>
<tr>
<td></td>
<td>Invited Speakers: Dr. Matt Kleinhenz</td>
<td>Ticket Required</td>
</tr>
<tr>
<td></td>
<td>“A horticulturist’s perspective on soil health in practice”</td>
<td></td>
</tr>
</tbody>
</table>

**Tuesday Afternoon**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00—4:40</td>
<td>In-Service Training</td>
<td>Grand Salon 6/7</td>
</tr>
<tr>
<td></td>
<td>Improving plant health and productivity through manipulation of the root-soil environment</td>
<td></td>
</tr>
<tr>
<td>1:30—3:30</td>
<td>Mango Summit</td>
<td>Grand Salon 1/2</td>
</tr>
</tbody>
</table>
Florida State Horticultural Society
2020-2021 Board of Directors and
Ex-Officio Members

Chairman of the Board: Jeffrey Williamson
President: Noris Ledesma
President-Elect: John Griffis

Sectional Vice Presidents
Agroecology & Natural Resources: Tia Silvasy
Citrus: Davie Kadyampakeni

Handling & Processing: Tie Liu
Krome Memorial Institute: Ali Sarkosh
Ornamental, Garden and Landscape: Kaydie McCormick
Vegetable: Lincoln Zotarelli
Secretary: Fernando Alferez
Treasurer: Kevin Athearn

Proceedings Editor: Mary Lamberts
Marketing Coordinator: Michelle Leonard-Mularz

Members At-Large: Craig Campbell, Richard Campbell

Program Coordinator: Germán Sandoya
Florida State Horticultural Society
2021 Meeting Facilitators

Local Arrangements  Liz Felter
Coordinator:

Sponsorship Coordinator: Gene McAvoy
Student Competitions  Xin Zhao, Michelle Danyl-
Coordinator: uk
CEU Coordinator: Cami Esmel McAvoy
Poster Session Coordina-
tor: Evelyn “Prissy” Fletcher,

FSHS Newsletter Team: Alicia Lamborn

Platinum Level Sponsor ($2,000 and above )
National Mango Board
Citrus Research and Development Foundation, Inc.
Disney

Gold Level Sponsor ($1,000—$1,999)

Silver Level Sponsor ($500—$999)

Bronze Level Sponsor (under $500)
2021 FSHS Patron Members

Anne Plotto, Ed Etxeberria, Craig Campbell, Gene McAvoy

Presentation, Publication and Submission Guidelines

- Full payment of page charges from past years is required before presentations and submissions can be accepted in current year.

- The SENIOR AUTHOR must be a member of the Society, and the PRESENTING AUTHOR of the paper must be registered at the annual meeting (except for invited papers) for papers to be accepted for the Proceedings. Papers not presented at the meeting will not be published.

- Electronic submissions prior to the meeting are highly encouraged and preferred. Manuscripts should be delivered in FINAL electronic form at the time of the meeting to the FSHS editor, Mary Lamberts (editors@fshs.org) and copy their appropriate sectional VP.

- Authors may also publish their manuscripts in any of the ASHS journals including HortTechnology, HortScience, or the Journal of ASHS.

Attention FSHS Authors

- FSHS welcomes and encourages color pictures and color figures in Proceedings articles.
- Did you know that videos can also be linked to Proceedings articles?
- Color pictures, figures and videos are included FREE of CHARGE in the online Proceedings.
Welcome 2021 FSHS
Sectional Vice-Presidents!

Agroecology & Natural Resources: Tia Silvasy, UF/IFAS Extension Orange County, tsilvasy@ufl.edu

Citrus: Davie Kadyampaken, UF/IFAS Citrus Research and Education Center, dkadyampakeni@ufl.edu

Handling & Processing: Tie Liu, UF/IFAS Horticultural Sciences Department, tieliu@ufl.edu

Krome Memorial Institute: Ali Sarkhosh, UF/IFAS Horticultural Sciences Department, sar-khosha@ufl.edu

Ornamental, Garden, & Landscape: Kaydie McCormick, UF/IFAS Extension Seminole County, k.mccormick@ufl.edu

Vegetables: Lincoln Zotarelli, UF/IFAS Horticultural Sciences Department, lzota@ufl.edu
Technical Program Schedule

Poster Session:

Prissy Fletcher
Coordinator
pfletch@ufl.edu

Monday Session

(Authors present posters from 9:00am – 9:45am during Coffee Break but posters will remain the entire conference). Atlantic Avenue Pre-function


[P-2] Starting a New Job with Extension During the COVID-19 Pandemic: Overcoming Challenges. L. Strange*. UF/IFAS Extension Taylor County, Perry, FL. (lstrange@ufl.edu)

[P-3] The Birds, the Bees, the Turf, and the Trees: Improving the Sustainability of Golf Courses with Wildlife Conservation. B. Wells*. UF/IFAS Extension Brevard County, Cocoa, FL. (bcwells@ufl.edu)

FSU Department of Nutrition, Food and Exercise Science, Tallahassee, FL. (psingh2@fsu.edu)

[P-5] **Hurricane Season Disaster Preparedness of Plant Nurseries.** E. Campoverde*. UF/IFAS Extension Miami-Dade County, Homestead, FL. (evcampoverde@ufl.edu)

[P-6] **Wrong plant, Wrong Place Costs Over $100,000.** H. Wooten*, T. McIntyre, and K. McCormick. UF/IFAS Extension Orange County, Orlando, FL. (hwooten@ufl.edu)

[P-7] **Anthocyanin accumulation in peppers: Potential roles in impacting ornamental value and nutritional qualities.** J. Nusbaum*, B. Valdes, B. Rathinasabapath. UF Horticultural Sciences Department, Gainesville, FL. (jnusbaum@ufl.edu)

[P-8] **Florida-Friendly Landscaping Facelift–Extension Collaboration with County Parks and Recreation.** L. Munroe*. UF/IFAS Extension Indian River County, Cocoa, FL. (lmunroe@ufl.edu)
Agroecology & Natural Resources Section

Tia Silvasy
Presiding
tsilvasy@ufl.edu

Monday Morning Session
(9:50 – 12:15) Grand Salon 7

9:50 am Welcome and Introduction: Tia Silvasy

A - Sustainable Agriculture

10:00 **UF/IFAS Pilot Project for Industrial Hemp: On-farm Trials with Extension** Ethan Carter¹, De Broughton², Zachary Brym³, and Christine Kelly-Begazo⁴. ¹University of Florida/IFAS Jackson County Extension, Marianna, FL, ²University of Florida/IFAS North Florida Research and Education Center-Suwannee Valley, Live Oak, FL, ³University of Florida/IFAS Tropical Research and Education Center, Homestead, FL, ⁴University of Florida/IFAS Indian River County Extension, Vero Beach, FL. (ethancarter@ufl.edu) [ANR-1]

10:15 **Cover Crop Planting Method Influences Soil Nutrient and Water Concentrations in Citrus Alleys**. David N. Campbell¹ and Danielle Treadwell¹. ¹Department of Horticultural Sciences, University of Florida/IFAS, Gainesville, FL. (campbell@ufl.edu) [ANR-2]

10:30 **Engaging Growers and Agricultural Service Providers in a Diverse Advisory Panel on Organic High Tunnel Research**. Megan Donovan¹, Marilyn Swisher², Kaylene Sattanno², and Xin Zhao³. ¹School of Natural Resources and Envi-
B. Biodiversity in Landscapes

10:45 The Palmeras: A Natural Reserve, Cubarral, Colombia. Lyndon Carvajal Rojas¹ and Noris Ledesma². ¹University Distrital Francisco Jose de Caldas, Bogota, Colombia, ²Tropical Research and Education Center, University of Florida/IFAS, Homestead, FL. (norisledesma.mango@gmail.com) [ANR-4]

11:00 Concepts for Sustainable Landscape Mosaics. Tina McIn-tyre¹, Rachel Gutner², and Sandra Wilson³, ¹University of Florida/IFAS Extension Seminole County, Sanford, FL, ²University of Central Florida, ³Environmental Horticultural Department, University of Florida, Gainesville, FL. (km McIntyre@ufl.edu) [ANR-5]

11:15 More Trials to Evaluate “Natural” Herbicides for Aquatic Weed Management. Lyn Gettys¹. ¹University of Florida/IFAS Fort Lauderdale Research and Extension Center, Davie, FL. (lgettys@ufl.edu) [ANR-6]

11:30 Encouraging Biodiversity with Wildflower Demonstration Plots. Tiare Silvasy¹. ¹University of Florida/IFAS Extension Orange County, Orlando, FL. (tsilvasy@ufl.edu) [ANR-7]

C. Student Presentation

11:45 Florida Producers’ Perceptions of Nutrient Agricultural Best Management Practices Profitability. Moonwon Soh¹² and Tara Wade¹². ¹University of Florida/IFAS, Southwest Florida Research and Education Center, Immokalee, FL ²University of Florida/IFAS, Food and Resource Economics Department, Gainesville, FL. (tara.wade@ufl.edu) [ANR-8]

12:00 Agroecology and Natural Resources Business Meet ing. Tia Silvasy, VP and Taylor Clem, VP-Elect
Agroecology and Natural Resources Section

12:15 Lunch

Monday Afternoon Session

1:30 **Field trip to Tiger Bay State Forest** – led by Tia Silvasy
Please meet in the hotel lobby at 1:30pm and plan to drive your own vehicle to the forest. We will be visiting the Indian Lake Recreation Area within the 27,330-acre Tiger Bay State Forest approximately 7 miles west of Daytona Beach. Tiger Bay State Forest consists of large areas of swamp with embedded pine islands and a large pine ridge area. This forest is among several publicly owned lands that create wildlife corridors for species listed as endangered, threatened, or of special concern including black bear and bald eagle. Once we arrive at the Indian Lake Recreation Area parking lot, meet by the pavilion. We will go on a short 2-mile loop hike to see different plant communities. The address is 4316 W International Speedway Blvd. Daytona, Beach, FL 32124. Bring water, hat, and sunscreen. Learn more about the forest: [https://www.fdacs.gov/Forest-Wildfire/Our-Forests/State-Forests/Tiger-Bay-State-Forest](https://www.fdacs.gov/Forest-Wildfire/Our-Forests/State-Forests/Tiger-Bay-State-Forest)

4:00 **Return to the Hotel**

End of sections. See you next year in Sarasota for the 135th FSHS annual meeting!
Monday Morning Session

(9:50 am – 12:00 pm) Grand Salon 1

9:50 Welcome and Introductions, Davie Kadyampakeni

A – Student Presentations

10:00 Efficacy and effects of trunk injection for delivering imidacloprid and oxytetracycline to HLB-affected sweet orange trees. Leigh Archer¹, Jawwad Qureshi¹ and Ute Albrecht²*. ¹Southwest Florida Research and Education Center, University of Florida/IFAS, Immokalee, FL. (ualbrecht@ufl.edu) [C-1]

10:15 Evaluation of varied fertilization rates on root growth and distribution of HLB-affected Valencia orange trees. Tanyaradzwa Chinyukwi¹, Evan Johnson¹, Lorenzo Rossi² and Davie Kadyampakeni¹*. ¹University of Florida/IFAS, Citrus Research and Education Center, Lake Alfred, FL; ²UF/IFAS, Indian River Research and Education Center, Fort Pierce, FL. (dkadyampakeni@ufl.edu) [C-2]

10:30 Diagnosis of Nutrient Deficiencies, Pest, and Disease Disorders on Citrus Leaves Using Deep Learning Machine Vision. Perseverança Mungofa*, Arnold Schumann¹, Laura Waldo¹ and Timothy Ebert¹. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. (pmungofa@ufl.edu) [C-3]

B - Citrus Horticultural Practices and Root-stock/Variety Improvement
10:45  **Water Use Assessment for Citrus Trees Affected by Huanglongbing (HLB) in Florida.** Samuel Kwakye¹ and Davie Kadyampakeni*. University of Florida IFAS, Citrus Research and Education Center, Lake Alfred, FL (dkadyampakeni@ufl.edu) [C-4]

11:00  **Candidatus Liberibacter asiaticus movement and carbohydrate allocation in different citrus scion–rootstock combinations during the first year after infection.** Caroline Tardivo¹, Kim D. Bowman² and Ute Albrecht*. ¹Southwest Florida Research & Education Center, University of Florida IFAS, Immokalee, FL. ²US Horticultural Research Laboratory, USDA, ARS, Fort Pierce, FL. (ualbrecht@ufl.edu) [C-5]

11:15  **Evaluation of the productivity of HLB-affected Citrus varieties grafted on US-942 and Swingle rootstocks.** Daniel Adu Boakye¹ and Fernando Alferez*. Southwest Florida Research and Education Center, University of Florida, IFAS, Immokalee, FL. (alferez@ufl.edu) [C-6]

11:30  **Citrus Nutrition Box Program: Year 1 Review.** Jamie D. Burrow¹, Tripti Vashisth*, and Davie Kadyampakeni¹. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL (tvashisth@ufl.edu) [C-7]

11:45  **Fertilizer inputs effect grapefruit root health.** John M. Santiago¹, Sandra Guzman², Davie M. Kadyampakeni³, Jeffrey G. Williamson⁴, Steven A. Sargent⁴, Rhuaniito S. Ferreira², Lorenzo Rossi*. ¹Horticultural Sciences Department, University of Florida, Institute of Food and Agricultural Sciences, Indian River Research and Education Center, Fort Pierce, FL; ²Agricultural and Biological Engineering Department, University of Florida, Institute of Food and Agricultural Sciences, Indian River Research and Education Center, Fort Pierce, FL; ³Soil and Water Sciences Department, University of Florida, Institute of Food and Agricultural Sciences, Citrus Research and Education Center, Lake Alfred, FL; ⁴Horticultural Sciences Department, University of Florida, Institute of Food and Agricultural Sciences, Gainesville, FL (l.rossi@ufl.edu) [C-8]
12:00 Lunch

Monday Afternoon Session

(1:20 – 3:30 PM) Grand Salon 1

1:20 Welcome back and introductions, Davie Kadyampakeni

B - Citrus Horticultural Practices and Root-stock/Variety Improvement (Continued)

1:30 **Effect of HLB on leaves and its implication on nutrient profile.** Answiya Neupane¹ and Tripti Vashisth*¹. Horticultural Sciences Department, University of Florida, CREC, Lake Alfred, FL
(tvashisth@ufl.edu) [C-9]

1:45 **A Review of the effect of Magnesium on Performance of Huanglongbing (HLB)-affected and Non-HLB-affected Citrus Trees.** Eduardo Esteves¹, Davie Kadyampakeni¹*, and Gabriel Maltais-Landry². ¹University of Florida/IFAS Citrus Research and Education Center, Lake Alfred, FL; ²University of Florida/IFAS Soil and Water Sciences Department, Gainesville, FL.
dkadyampakeni@ufl.edu) [C-10]

2:00 **Root growth and micro-nutrient uptake in HLB-affected grapefruit on Florida Flatwood soils.** Lukas Hallman¹, Davie Kadyampakeni², Alan Wright¹, Evan Johnson², Rhuanito Ferrarezi¹ and Lorenzo Rossi*¹. ¹University of Florida, IFAS, Indian River Research and Education Center, Fort Pierce, FL; ²University of Florida, IFAS, Citrus Research and Education Center, Lake Alfred, FL. (l.rossi@ufl.edu) [C-11]

2:15 **Split Foliar and /or Soil-Applied Essential Nutrients Enhances Tree Growth of HLB-Affected Citrus Trees.** Alishiekh A. Atta¹*, Kelly T. Morgan¹, and Davie M. Kadyampakeni². ¹Southwest Florida Research and Edu
C - Entomology

3:15 Developing Neutral Electrolyzed Water for pest management 2020 update. Timothy Ebert*, Arnold Schumann1, Laura Waldo1, and Napoleon Mariner1. Citrus Research and Education Center, University of Florida/IFAS, Lake Alfred, FL. (tebert@ufl.edu) [C-16]

3:30 Pest Population Dynamics in Citrus under Protective Screen Production Enclosures: Experiences in Lake Alfred, Florida. Napoleon Mariner*, Laura Waldo1, Timothy Ebert1, and Arnold Schumann1. Soil & Water Sciences Department, University of Florida, CREC, Lake Alfred, FL. (napoleon.mariner@ufl.edu) [C-17]
Citrus Section

Manjul Dutt
Presiding
manjul@ufl.edu

Tuesday Morning Session

(9:50 am – 12:00 pm) Grand Salon 1 and 2

9:50 Welcome and Introductions, Manjul Dutt

B - Citrus Horticultural Practices and Rootstock/Variety Improvement (Continued)

10:00 **Graft Compatibility of Scions with Two New Rootstocks.** Bo Meyering¹, Gabriel Pugina¹, Kim D. Bowman², Ute Albrecht*¹. Southwest Florida Research and Education Center, University of Florida, IFAS, Immokalee, FL; ²US Horticultural Research Laboratory, Agricultural Research Service, USDA, Fort Pierce, FL. (ualbrecht@ufl.edu) [C-18]

10:15 **HLB Tolerance in ‘Valencia’ Sweet Orange Grafted on to Pummelo Interstocks and ‘Swingle’ Rootstocks.** Jude W. Grosser¹, Ethan R. Nielsen¹, Lamiaa M. Mahmoud¹², Timothy A. Ebert¹, and **Manjul Dutt***¹. ¹Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL; ²Pomology Department, Faculty of Agriculture, Mansoura University, 35516 Mansoura, Egypt. (manjul@ufl.edu) [C-19]
10:30 Improved irrigation increases water use efficiency and tree growth on growers’ citrus groves. Alisheikh A. Atta*, Kelly T. Morgan1. Southwest Florida Research and Education Center, University of Florida, Immokalee, FL. (aatta@ufl.edu) [C-20]

10:45 Shading effects on the physiology, growth, and yield of HLB-infected Hamlin sweet orange trees. Anirban Guha*1, and Christopher Vincent1. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. (anirbanquha@ufl.edu) [C-21]

11:00 Evaluation of the susceptibility of different citrus rootstocks to burrowing nematodes (Radopholus similis). Nabil Killiny*, Shelley Jones1, Pedro Gonzalez1, and Larry Duncan1. Citrus Research and Education Center, University of Florida IFAS, Lake Alfred, FL. (nabilkilliny@ufl.edu) [C-22]

11:15 Determination of citrate in citrus plants using europium sensitized fluorescence assay. Faraj Hijaz1 and Nabil Killiny*. Department of Plant Pathology, Citrus Research and Education Center, IFAS, University of Florida, Lake Alfred, FL. (nabilkilliny@ufl.edu) [C-23]

11:30 End of sections. See you next year in Sarasota for the 135th FSHS annual meeting!
Handling & Processing Section

Tie Liu
Presiding
tieliu@ufl.edu

Monday Morning Session

(9:50 – 12:00) Grand Salon 8

9:50 Welcome and Introductions, Tie Liu

A - Student Presentations 1

10:00 Ethylene Sensitivity of Climacteric Fruits in Relation to the Rate of Ethylene Production. Morgan Madison\(^1\)*, Jeffery Brecht\(^1\) and Steven Sargent\(^1\). \(^1\)Horticultural Sciences Department, University of Florida, IFAS, Gainesville FL (morgan.moore@ufl.edu) [H&P-1]

10:15 Strawberry DNA Tests for Improving Fruit Quality and Disease Resistance. Youngjae Oh\(^1\), Hyeondae Han\(^1\), Zhen Fan\(^1\), Natalia Salinas\(^1\), Cheryl Dalid\(^1\), Vance M. Whitaker\(^1\), Seonghee Lee\(^1\)*. \(^1\)Gulf Coast Research and Education Center, University of Florida, IFAS, Balm, FL (seonghee105@ufl.edu) [H&P-2]

10:30 Total Phenolics as an Indicator of Quality in Florida-grown Tea. Caitlin Clarke\(^1\)*, Brantlee Spakes Richter\(^2\), and Bala Rathinasabapathi\(^1\). \(^1\)Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL, \(^2\)Plant Pathology Department, University of Florida, IFAS, Gainesville, FL. Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (caitlin.clarke@ufl.edu) [H&P-3]

10:45 Evaluation of Thyme Oil Vapor for Control of Posthar-
vest Gray Mold on Blueberry. Yuru Chang1, Ali Sar-khosh1, and Jeffrey K. Brecht1. 1Horticultural Sciences Department, University of Florida, Gainesville, FL 32611. (changyuru@ufl.edu) [H&P-4]

B - Student Presentation 2

11:00  LB8-9  ’Sugar Belle’ Kombucha: Alternative Citrus Product in the HLB Era. Dongjoo Kim1 and Yu Wang1. 1Citrus Research and Education Center, Department of Food Science and Human Nutrition, University of Florida, Lake Alfred, Florida 33850, United States. (yu.wang@ufl.edu) [H&P-5]

11:15  Validating Agricultural Water Treatment for Food Safety on Farms. Blessing Chukwuaja1 and Michelle D Danylu-k1. 1University of Florida, IFAS, Citrus Research and Education Center, Lake Alfred, FL. (bchukwuaja@ufl.edu) [H&P-6]

11:30  Investigating the Potential of Oxygenated and Ozonated Water as a Replacement of Chlorine for Peach Sanitation. Orestis Giannopoulos1, Ramsey Corn2, Francisco E. Loayza1, Dario Chavez1, Angelos Deltsidis1. 1Department of Horticulture, University of Georgia, Tifton, GA. 2Abraham Baldwin Agricultural College, Tifton, GA. (adeltsidis@uga.edu) [H&P-7]

11:45  Determining the Relationship Between Distribution Temperatures and Strawberry Quality. Jeffrey K. Brecht1, Moshe Doron1, and Ismail Uysal2. 1University of Florida, IFAS, Horticultural Sciences Department, Gainesville, FL. 2University of South Florida, Electrical Engineering Department, Tampa, FL. (jkbrecht@ufl.edu) [H&P-8]

Monday Afternoon Session

(1:20 – 3:30) Grand Salon 8

1:20 Welcome and Introductions, Tie Liu
C - Postharvest Handling and Management 1

1:30 Evaluation of Preharvest Fungicide Application for Postharvest Diplodia Stem-end Rot Control on Grapefruit. Jiuxu Zhang1, Jiaqi Yan2, Monty Myers1, Qiaolin Zheng2, Rita Noel3, Lili M. Cano2, Megan M. Dewdney3, Yu Wang3, Wei Zhao4, Jinhe Bai4, Anne Plotto4, Mark A. Ritenour1. 1Indian River Research and Education Center, University of Florida, IFAS, Fort Pierce, FL; 2College of Horticulture, China Agriculture University, Beijing, China; 3Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL; 4USDA, ARS, US Horticultural Research Lab, Fort Pierce, FL. (ritenour@ufl.edu) [H&P-9]

1:45 Determining Optimal Handling Conditions and Quality for Purple-Fleshed Sweetpotatoes. Merce Santana1, Steven Sargent1, David Dinkins2, Wendy Mussoline3 and Adrian Berry1. 1Horticultural Sciences Department, University of Florida/IFAS, Gainesville FL. 2UF/IFAS Extension, Putnam County, FL. 3UF/IFAS Extension, Flagler and Putnam County, FL. (sasa@ufl.edu) [H&P-10]

D - Postharvest Handling and Management 2

2:00 Preservation of Postharvest Quality of Fresh Bamboo Shoot via Suppression of Lignification, Browning, and Decay. Sonya L. Stahl1* and Steven A. Sargent1. 1Horticultural Sciences Department, University of Florida/IFAS, Gainesville FL. (cocoplum@ufl.edu) [H&P-11]

2:15 Productivity and postharvest quality of strawberry cultivars grown in southeast Georgia. Angelos Deltsidis1, Joshua Dawson2, Erick D. Smith1. 1Department of Horticulture, University of Georgia, GA; 2Fort Valley State University (FVSU) Extension, Valdosta, GA. (adeltsidis@uga.edu) [H&P-12]
D - Genetics and Genomics

2:30 Improving Botrytis gray mold resistance using CRISPR gene editing in cultivated strawberry. Man Bo Lee¹, Junhui Zhou², Zhongchi Liu², and Seonghee Lee*. ¹Gulf Coast Research and Education Center, University of Florida, IFAS, Balm, FL. ²Department of Cell Biology and Molecular Genetics, University of Maryland, College Park, MD. (seonghee105@ufl.edu) [H&P-13]

2:45 Investigating the dynamic transcript level changes of senescence-associated genes in lettuce during postharvest storage. Yogesh Ahlawat¹, Catherine Belisle¹,², German Sandoya¹,², Steven Sargent¹, and Tie Liu*. ¹Department of Horticultural Sciences, University of Florida, IFAS, Gainesville, FL. ²Everglades Research & Education Center, University of Florida, IFAS, Belle Glade, FL. (tieliu@ufl.edu) [H&P-14]

3:00 Investigate the Regulation of Senescence Associated Signaling Mechanism in Postharvest Broccoli. Tie Liu*, Yogesh Ahlawat¹, Jeffrey Brecht¹, Eleni Pliakoni². ¹Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. ²Department of Horticulture and Natural Recourses, Kansas State University, Olathe, KS. (tieliu@ufl.edu) [H&P-15]

3:15 Handling and Processing Section Business Meeting. Tie Liu, VP and Jeffrey Brecht, VP-Elect

3:30 End of sections. See you next year in Sarasota for the 135th FSHS annual meeting!
Ornamental Garden and Landscape

Kadye McCormick
Presiding
k.mccormick@ufl.edu

Monday Morning Session

(9:50 – 11:45) Grand Salon 3

9:50 am Welcome and Introduction, Kaydie McCormick.

A - Marketing Analysis and Economics of OGL

10:00 Investigating Green Industry Firms’ Market Shares to Wholesalers, Landscapers, Retailers and Direct-to-Consumer Channels. Xuan Wei¹ and Hayk Khachatryan².
¹Gulf Coast Research and Education Center, University of Florida/IFAS, Wimauma, FL, ²Mid-Florida Research and Education Center, University of Florida/IFAS, Apopka, FL. (wei.xuan@ufl; hayk@ufl.edu) [OGL-1]

10:15 Investigating households’ preferences for turfgrass attributes in Florida. Hayk Khachatryan¹, Melinda Knuth¹, Xumin Zhang¹, Xuan Wei², Chengyan Yue³, Alan Hodges⁴.
¹Mid-Florida Research and Education Center, University of Florida/IFAS, Apopka, FL, ²Gulf Coast Research and Education Center, University of Florida/IFAS, Wimauma, FL, ³Department of Applied Economics, University of Minnesota, St. Paul, MN, ⁴Food and Resource Economics Department, University of Florida, Gainesville, FL. (hayk@ufl.edu) [OGL-2]
10:30 Six-month and One-year Economic Prediction Models for the Environmental Horticulture Industry in Florida. Shawn T. Steed¹, Wael Elwakil¹, James Colee², Alan W. Hodges³, Zachary Ray⁴, and Nathalia Tello⁵.¹University of Florida, IFAS, Extension Hillsborough County, Seffner, FL; ²Statistical Consulting, University of Florida, IFAS, Gainesville, FL; ³Food and Resource Economics Department, University of Florida, IFAS, Gainesville, FL; ⁴Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL; ⁵Environmental Horticulture Department, University of Florida, IFAS, Gainesville, FL. (ststeed@ufl.edu) [OGL-3]

B - Pest and Disease Control

10:45 Viburnum Foliar Pathogen Identification and Fungicide Efficacies. Shawn T. Steed¹, Wael Elwakil¹, Lukas A. Vallad², and Gary E. Vallad².¹University of Florida/IFAS Extension Hillsborough County, Seffner, FL; ²University of Florida/IFAS, Gulf Coast Research and Education Center, Balm, FL (ststeed@ufl.edu) [OGL-4]

11:00 Preemergence Herbicides for Weed Control in Caladium. Nathan S. Boyd¹.¹Gulf Coast Research and Education Center, University of Florida, IFAS, Balm, FL. (nsboyd@ufl.edu) [OGL-5]

C - Nutrients and Fertilizer

11:15 Response of Container-Grown Muhly Grass to Controlled-Release Fertilizer Rate and Longevity. Tom Yeager¹, Matt Smith², and Ted Gardner³.¹Environmental Horticulture Department, University of Florida/IFAS, Gainesville, FL; ²University of Florida/IFAS Extension Sumter County, Bushnell, FL; ³Hibernia Nursery, Webster, FL (veagert@ufl.edu) [OGL-6]

11:30 Pilot Study to Evaluate Sargassum Compost for Soil
Amendment Potential.
Michelle Leonard-Mularz\(^1\), Shelly Krueger\(^1\), Ashley Smyth\(^1\).
\(^1\)University of Florida, IFAS Extension, Monroe County, Key West, FL. (mularz-michelle@monroecounty-fl.gov) [OGL-7]

Monday Afternoon Session
(1:20 – 3:30) Grand Salon 3

1:20 Welcome back and introductions – Kaydie McCormick


D - Community Engagement
1:45 **Going Beyond the Grant for Community, Educational, and Volunteer Engagement**. Michelle Leonard-Mularz, University of Florida, IFAS Extension, Monroe County, Key West, FL. (mularz-michelle@monroecounty-fl.gov) [OGL-8]

2:00 **End of sections**. See you next year in Sarasota for the 135th FSHS annual meeting!

*Note that a Concurrent Vegetable Section starts at 2:15 PM in same room*

F - Vegetable Concurrent Session - Pest management

2:15 **Soil management strategies to reduce fusarium wilt of lettuce in the muck soils of the Everglades Agricultural Area**. Jesse Murray\(^*\), Richard Raid\(^1\), Germán Sandoya\(^1,2\). Everglades Research and Education Center, University of Florida, IFAS Belle Glade, FL. (gsandoyamiranda@ufl.edu) [V-20]

2:30 **Collaborative, Rapid-Response Research and Extension Efforts for Management of an Invasive Thrips Species**,
**Megalurothrips usitatus (Bagnall).** Craig J. Frey¹*, Anna Mészáros²*, Hugh A. Smith³, and Julien M. Beuzelin⁴, University of Florida, IFAS, Hendry County Extension LaBelle, FL, ²University of Florida, IFAS, Palm Beach County Extension, West Palm Beach, FL, ³Gulf Coast Research and Education Center, University of Florida, IFAS, Wimauma, FL, ⁴Everglades Research and Education Center, University of Florida, IFAS, Belle Glade, FL. (craigfrey@UFL.EDU). [V-21]

2:45 **Impact of deep fumigation on root-knot nematodes (Meloidogyne spp.), reniform nematode (Rotylenchulus reniformis), and nutsedge (Cyperus spp.) in plasticulture production in Florida.** Sarah Be-nevenute¹*, Josh Freeman¹. ¹North Florida Research and Education Center, University of Florida/IFAS, Quincy, Florida. (joshuafr@ufl.edu) [V-22]

3:00 **Efficacy of Catolaccus hunteri, in managing the pepper weevil.** Garima Garima⁴*, Dakshina Seal, and Victoria O. Adeleye. Tropical Research and Education Center, University of Florida/IFAS, Homestead,FL. (garima.garima@ufl.edu) [V-23]

3:15 **Abundance and diversity of corn silk flies (Diptera: Ulidiidae) in sweet corn and surrounding habitats in the Everglades Agricultural Area and Homestead region.** Balwinder Kaur¹*, Julien Beuzelin¹, Dakshina Seal², Sandra Allan³, Hardev Sandhu¹ and Lindsay Campbell⁴¹ Everglades Research and Education Center, University of Florida/IFAS, Belle Glade, FL, ²Tropical Research and Education Center, University of Florida/IFAS, Homestead, FL, ³Center for Medical, Veterinary and Agricultural Entomology, USDA, ARS, Gainesville, FL, ⁴Florida Medical Entomology Laboratory, University of Florida/IFAS, Vero Beach, FL. (bkaur@ufl.edu) [V-24]

3:30 **Adjourn**
Monday Morning Session

(9:50 am – 12:00 pm)  Grand Salon 2

9:50  Welcome and Introductions, Ali Sarkhosh

A – Tropical and Subtropical Fruits

10:00  **Renewed Potential for Caimito (Chrysophyllum caimito) and Guanabana (Annona muricata) in South Florida.**
Jonathan H. Crane*. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL.  jhcr@ufl.edu  [K-1]

10:15  **Passion fruit: A potential alternative fruit crop for Florida.**
Mark Bailey1* and Ali Sarkhosh2. 1Marion County Extension, University of Florida/IFAS, Ocala FL 34470 U.S.A.  2Horticultural Sciences Department, University of Florida, IFAS, Gainesville FL 32611 U.S.A.  ironhill@ufl.edu  [K-2]

10:30  **Edible fruit coating reduces rate of moisture loss in refrigerated purple pitanga (Eugenia uniflora L. ‘Zill Dark’) fruits.**
John L. Griffis, Jr.1*, Malcolm M. Manners2. 1Ecology and Environmental Studies Department, Florida Gulf Coast University, Ft. Myers, FL.  2Horticultural Sciences Department, Florida Southern College, Lakeland, FL.  jgriffis@fgcu.edu  [K-3]

10:45  **The Lychee Erinose Mite: a serious pest of lychee found in Florida.**
Jeff Wasielewski1*, Daniel Carrillo2, Alexandra M. Revynthi2, Jonathan H. Crane2. 1Miami-Dade County Exten-
11:00  **Physiological responses of diploid banana accessions to in vitro chilling stress.** Lamiaa M Mahmoud¹,² * and Manjul Dutt¹. ¹ Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL ² Pomology Department, Faculty of Agriculture, Mansoura University, 35516 Mansoura, Egypt.  lamiaa.mahmoud@ufl.edu  [K-4]

11:15  **Genotyping-by-sequencing of Florida passion fruit germplasm reveals accession relationships.** Josh Anderson¹ *, Ravena Vidal², Eric Stafne³, Marcio Resende⁴, Maria Brym⁵, Alan H. Chambers¹. ¹ Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. ² Universidade Estadual do Norte Fluminense, Campos, Brazil; ³ Mississippi State University, Poplarville, MS. ⁴ Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL.  anderson.joshua@ufl.edu  [K-6]

**B – Agroforestry System**

11:30  **Metepantle: traditional agroforestry system of the high valleys of Mexico.** Daniel Hernández Archundia¹, Julio Baca del Moral¹, Venancio Cuevas Reyes², Diana Ayala Montejo¹, Francisco Javier Hernández Archundia³, Sergio Márquez Berber¹, Noris Ledesma⁴ *, Carlos Montes de Oca Sanchez⁵. ¹ Universidad Autónoma Chapingo, Texcoco, Mexico. ² National Institute of Forestry, Agricultural and Livestock Research, Valle de México, Experimental Field - INIFAP. CP. 56230. ³ Secretaría de Agricultura y Desarrollo Rural. Municipio Libre 377 Col. Santa Cruz Atoyac, alcaldía Benito Juárez, Ciudad de México C.P. 03310. ⁴ Noris Ledesma, Tropical Research & Education Center, University of Florida/IFAS, Homestead, Florida. ⁵ Centro de Economía Social Julián Garcés. San Felipe Ixtacuixtlá, Tlaxcala, Mexico, CP 90120.  norisledesma.mango@gmail.com  [K-7]
11:45 Aggregate distribution and CO2 emission in soil of coffee agroforestry system modified with avocado in Mexico. Diana Ayala-Montejo1*, Gerardo Sergio Benedicto-Valdés2, Juan Fernando Gallardo Lancho3, Eduardo Valdés-Velarde1, Sergio Márquez Beber1, Noris Ledesma4*. 1Crop Science, Universidad Autónoma Chapingo, Texcoco, Mexico. 56230. 2Edaphology, Colegio de Posgraduados, Montecillo, Texcoco, Mexico. 56230. 3Senior Scientist, retired. CSIC-IRNAS, Salamanca, Spain. 4Noris Ledesma, Tropical Research & Education Center, University of Florida/IFAS, Homestead, Florida. norisledesma.mango@gmail.com [K-8]

12:00 Lunch

Monday Afternoon Session
(1:20 pm – 3:45 pm)  Grand Salon 2

1:20 Welcome back and Introductions, Ali Sarkhosh

C – Student Presentations
1:30 Ground Cover Growing Systems for Tea Production in Florida. Shannon K. McAmis1*, Bala Rathinasabapathi2 and Brantlee Spakes-Richter1. 1Plant Pathology Department, University of Florida, IFAS, Gainesville, FL. 2Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. sk.mcamis@ufl.edu [K-9]

D – Temperate Fruits
1:45 Constraints to rootstocks for growing low-chill peaches in Florida’s changing climate. Logan Richmond Cosie1*, Bruce Schaffer2, Muhammad Shahid3, Jose Chaparro1, Ali Sarkhosh1. 1Horticultural Sciences Department, University of Florida, Gainesville, FL 32611. 2Tropical Research and Education Center, University of Florida, Homestead, FL 33031. 3Department of Agriculture, Nutrition, and Food Systems,
2:00 **Nitrate and electrical conductivity monitoring for blueberry production with five nitrogen rates.** Jonathan Denison, Christianah Oladoye, Jeffrey Williamson, Gerardo H. Nunez, Guodong Liu*. Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL 32611. guodong@ufl.edu [K-11]

2:15 **O47-16-10: ‘O17-19-1’, An Early Ripening Muscadine Table Grape with Self-fertile Flowers.** Zhongbo Ren*, Violeta Tsolova and Islam El-Sharkawy. 1Florida A&M University, Tallahassee, Florida. zhongbo.ren@famu.edu [K-12]

2:30 **A look at vigor management options for growing peaches in Florida’s subtropical climate.** Trequan McGee*, Jose X. Chaparro, Ali Sarkhosh. 1Horticultural Sciences Department, University of Florida, Gainesville, FL 32611. trequanmcgee@ufl.edu [K-13]

---

**E – Vanilla**

2:45 **Establishing a domestic vanilla industry.** Alan Chambers*. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. ac@ufl.edu [K-14]

---

**F – Breadfruit**

3:00 **An Introduction to a Breadfruit Grove in Big Pine Key, Florida.** Michelle Leonard-Mularz*, Russell Fielding. University of Florida, IFAS Extension, Monroe County, Key West, FL. mularz-michelle@monroecounty-fl.gov [K-15]

---

**G - Farmworker Safety Training Program**

3:15 **UF-IFAS Farmworker Safety Training Program During Global Pandemic: Lessons Learned on How to Reduce Risks & Protect Your People.** Kimberly L. Morgan*, Tara Wade1, Barbara Hyman1, Gene McAvoy1, Carlene Thissen1,
Cesar Asuaje\textsuperscript{2}, Julie Carson\textsuperscript{1}, Michael Bayer\textsuperscript{3}, and Ricardo Davalos\textsuperscript{4}. \textsuperscript{1}Southwest Florida Research and Education Center, University of Florida/IFAS, Immokalee, FL. \textsuperscript{2}University of Florida/IFAS Extension, Palm Beach County, West Palm Beach, FL. \textsuperscript{3}Curran, Bayer, & Associates. P.O. Box 1765, West Palm Beach, FL. \textsuperscript{4}Div. of Agricultural Environmental Services, Fla Dept. of Agriculture & Consumer Services, Tallahassee, FL. KIMorgan@ufl.edu \textsuperscript{[K-16]}

3:30 \textbf{Krome Memorial Section Business Meeting}, Ali Sarkhosh, VP and Mark Bailey, VP-Elect

3:45 \textbf{End of sections}. See you next year in Sarasota for the 135th FSHS annual meeting!

\textbf{Join us Tuesday afternoon for the Mango Summit} (See page 44 for more details)
Monday Morning Session

(9:50 – 12:00) Grand Salon 6 and 7

9:50 am Welcome and Introduction, Lincoln Zotarelli.

A - Irrigation and Nutrient Management

10:00  **Nitrogen management and recovery efficiency and response to N sources in drip irrigated tomato.** Laura Jalpa\(^1\)*, Rao Mylavarapu\(^1\).\(^1\)Soil and Water Sciences Department, University of Florida/IFAS, Gainesville, FL. (raom@ufl.edu) [V-1]

10:15  **Using SPAD readings to assess potato nitrogen status.** Jonathan Denison*, Guodong Liu. Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (guodong@ufl.edu) [V-2]

10:30  **Rate and timing of phosphorus fertilizer application for cabbage in northeast Florida.** Luis G. Pesantes\(^1\)*, Edzard van Santen\(^2\), Xin Zhao\(^3\), Gabriel Maltais-Landry\(^3\), and Lincoln Zotarelli\(^1\).\(^1\)Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. \(^2\)Statistical Consulting Unit and Agronomy Department, University of Florida/IFAS, Gainesville, FL. \(^3\)Soil and Water Sciences Department, University of Florida/IFAS, Gainesville, FL. (lzota@ufl.edu) [V-3]

10:45  **Assessing in-season soil and potato plant nitrogen status using integrated approaches.** Fernando Rodrigo Bortolozo\(^1\)*, André Luiz B.R. da Silva\(^2\), Judyson de Mattos Oliveira\(^1\), Lincoln Zotarelli\(^1\).\(^1\) Horticultural Science Depart-
Vegetable Section

11:00 Pre-planting and supplementary in-season liquid phosphorus fertilization for potato in Florida. Luis G. Pesantes*, Edzard van Santen, Xin Zhao, Gabriel Maltais-Landry, and Lincoln Zotarelli. Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (fernandorb@ufl.edu) [V-4]

11:15 Nitrogen management for greenhouse production of luffa, a high value Asian vegetable. Brianna Kessler*, Bala Rathinasabapathi, and Guodong Liu. Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (brianna.kessler@ufl.edu, guodong@ufl.edu) [V-6]

11:30 Evapotranspiration rates of three sweet corn cultivars under different irrigation levels. Fitsum T. Teshome, Haimanote K. Bayabil*, Sandra M. Guzman and Bruce Schaffer. Tropical Research and Education Center, University of Florida/IFAS, Homestead, FL. (hbayabil@ufl.edu) [V-7]

11:45 Pedotransfer function to estimate soil penetration resistance of the vegetable production areas in northeast Florida. Judyson de Matos Oliveira, Cásio Antônio Tormena, Lincoln Zotarelli, Allan Bacon, Fernando R. Bortolozo, Julio C. Pachon. University of Florida/IFAS, Gainesville, FL. State University of Maringá, Brazil. (judyson.dematoso@ufl.edu) [V-8]

Monday Afternoon Session
Vegetable Section

(1:20 – 4:45) Grand Salon 4 and 5

1:20 Welcome back and introductions – Lincoln Zotarelli

A- Irrigation and Nutrient Management (cont’d)

1:30 Planting hole application of controlled release fertilizer can reduce nitrogen use without yield loss in strawberry grown in sandy soil in a subtropical climate. Lillian Pride1 and Shinsuke Agehara1.1Gulf Coast Research and Education Center, University of Florida, IFAS, Wimauma, FL. (sagehara@ufl.edu) [V-9]

1:45 Vegetable Section Business Meeting, Lincoln Zotarelli, VP and Phillip Williams VP-elect

B - Student Presentations

2:00 Discovery and characterization of genes conferring resistance to charcoal rot caused by Macrophomina phaseolina in cultivated strawberry Fragaria × ananassa. William Willborn1, Youngjae Oh1, Elissar Alam1, Vance M. Whitaker1, Seonghee Lee1.1Department of Horticultural Science, University of Florida, IFAS Gulf Coast Research and Education Center, Wimauma, FL. (Seonghee105@ufl.edu) [V-10]

2:15 Population dynamics and abundance of pepper weevil, Anthonomus eugenii Cano (Coleoptera: Curculionidae) in jalapeño pepper under field condition in south Florida. Victoria Adeleye*, Dakshina Seal, Garima Garima. Tropical Research and Education Center, University of Florida/IFAS, Homestead, FL. (vadeleye@ufl.edu) [V-11]

2:30 Lettuce downy mildew differential cultivars are resistant to other important diseases. Lis Natali R. Porto1*, Richard N. Raid1, Germán V. Sandoya- Miranda1.1Everglades Research and Education Center, University of Florida/IFAS,
Influence of nutrient management practices on crop productivity and quality in high tunnel organic production of leafy greens. Shufang Tian1*, Jeffrey Brecht1, Xin Zhao1.1 Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. (zxin@ufl.edu) [V-13]

Soil pedotransfer function to estimate available water of northeast Florida sandy soils. Judyson de Matos Oliveira1*, Cássio Antônio Tormena2, Lincoln Zotarelli2, Allan Bacon1, Fernando R. Bortolozo1, and Julio C. Pachon1.1 University of Florida, Gainesville, FL; 2 State University of Maringá, Brazil. (judyson.dematoso@ufl.edu) [V-14]

Evaluating sunn hemp biomass as a carbon source for anaerobic soil disinfestation in organic strawberry production. Isaac Vincent1, Bodh Paudel1, Jianyu Li1, Erin Rosskopf2, and Xin Zhao1*. 1 Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL, 2 USDA-ARS, US Horticultural Research Laboratory, Fort Pierce, FL. (zxin@ufl.edu) [V-15]

Interactions between root-knot nematode (Meloidogyne incognita) and resistant and susceptible pepper (Capsicum annuum) cultivars. Dominick Padilla1*, Diego Arruda Huggins de Sá Leitão2, Donald Dickson2, Bala Rathinasabapathi1.1 Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. 2 Entomology and Nematology Department, University of Florida/IFAS, Gainesville, FL. (brath@ufl.edu) [V-16]

Fine mapping and candidate gene discovery for the resistance to angular leaf spot in cultivated octoploid strawberry (Fragaria x ananassa Duch.). Jin-Hee Kim, Vance M. Whitaker, Seonghee Lee*. Gulf Coast Research
Vegetable Section

and Education Center, University of Florida/IFAS, Wimauma, FL. (Seonghee105@ufl.edu) [V-17]

4:15 Insecticide lethal and sublethal effects on corn silk flies (Diptera: Ulidiidae) following topical exposure. Eric Schwan Resende1*, Julien Beuzelin1, Victoria Dunkley1, Silvana Paula-Moraes2, Dakshina Seal3, Gregg Nuessly1,1 Everglades Research and Education Center, University of Florida/IFAS, Belle Glade, FL; 2 West Florida Research and Education Center, University of Florida/IFAS, Jay, FL; 3 Tropical Research and Education Center, University of Florida/IFAS, Homestead, FL. (eschwanresende@ufl.edu) [V-18]

4:30 Screening broad-spectrum herbicides to identify lettuce lines with tolerance. Shailaja Vemula*, Calvin Odero, Germán Sandoya, Gregg MacDonald, Hardev Sandhu, Ramdas Kanissery. Everglades Research and Education Center, University of Florida/IFAS, Belle Glade, FL. (svemula@ufl.edu) [V-19]

4:45 Adjourn

Tuesday Morning Session 1

Lincoln Zotarelli
Presiding
lzota@ufl.edu

(9:50 – 12:00) Grand Salon 6 and 7

9:50 Welcome and introductions – Lincoln Zotarelli

C - Concurrent Session 1 - Alternative Vegetable Crops and Extension
10:00 Expansion of ethnic vegetable production in Florida. Emma L. Turner*, Guodong Liu. Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (emmaturner@ufl.edu, guodong@ufl.edu) [V-25]

10:15 Harvest yields for brussels sprouts variety trials in northeast Florida. Wendy Mussoline1*, Steve Sargeant2, Gary England3, and Christian Christensen4.1Putnam County Extension, University of Florida IFAS, East Palatka, FL, 2Department of Horticultural Sciences, University of Florida, Gainesville, FL, 3Extension Agent IV Emeritus, University of Florida IFAS, Hastings, FL, 4Hastings Agriculture Extension Center, University of Florida IFAS, Hastings, FL. (wmussoli@ufl.edu) [V-26]

10:30 Exploring pumpkin varieties for northeast Florida production. Evelyn “Prissy” Fletcher1*, Christian Christensen2. 1St. Johns County Extension, University of Florida/IFAS, St. Augustine, FL, 2Hastings Agriculture and Extension Center, University of Florida/IFAS, Hastings, FL. (pfletch@ufl.edu) [V-27]

10:45 Pandemic tilts local agriculture and community’s to behavior changes. Lisa Hickey. University of Florida/IFAS Extension Manatee County, Palmetto, FL. (lisa.hickey@ufl.edu) [V-28]

11:00 Watermelon planting decisions with multiple risks: A simulation analysis. Kevin Athearn1*, Marina Burani-Arouca1, Nicholas Dufault2, Clyde Fraisse3, Joshua Freeman4, Robert Hochmuth5, Tatiana Sanchez5, Tatiana Borisova6, Tyler Pitman7, and Luke Harlow8. 1North Florida Research and Education Center – Suwannee Valley, University of Florida/IFAS, Live Oak, FL; 2Plant Pathology Department, University of Florida/IFAS, Gainesville, FL; 3Agricultural and Biological Engineering Department, University of Florida/IFAS, Gainesville, FL; 4North Florida Research and Education Center, University of Florida/IFAS, Quincy, FL; 5Alachua County Extension, University of Florida/IFAS, Gainesville, FL; 6Food and Resource Economics Department, University of Florida/IFAS, Gainesville, FL; 7Gilchrist County Extension, University
Vegetable Section

of Florida/IFAS, Gainesville, FL; \(^5\)Union County Extension, University of Florida/IFAS, Gainesville, FL. (athearn@ufl.edu) [V-29]

11:15 **Severity of tomato chlorotic spot virus with field geolocations.** Qingren Wang, UF/IFAS Extension Miami-Dade County, Homestead, FL. (qrwang@ufl.edu) [V-30]

11:30 **Lettuce cultivated in hydroponics responds to less P inputs.** Gustavo F. Kreutz\(^1\), Jehangir Bhadha\(^1\), Germán V. Sandoya\(^1\). Everglades Research and Education Center, University of Florida IFAS, Belle Glade, FL. (gsandoyamiranda@ufl.edu) [V-31]

11:45 **Towards improvement of lettuce for vitamin C in protected agriculture.** Germán Sandoya\(^1\)*, Amarat (Amy) Simonne\(^2\), Abdul Bais Kadli \(^2\), Robert (Bob) Hochmuth\(^3\), Wanda Laughlin\(^3\), Alexandor McMillan\(^3\), Morgan Morrow\(^3\). Everglades Research and Education Center University of Florida/IFAS, Belle Glade, FL, \(^2\) Family, Youth and Community Sciences Department University of Florida/IFAS, Gainesville, FL, \(^3\) North Florida Research and Education Center – Suwanee Valley University of Florida/IFAS, Live Oak, FL. (gsandoyamiranda@ufl.edu) [V-32]

12:00 **End of sections.** See you next year for the 135rd FSHS annual meeting

Tuesday Morning Session 2

Phillip Williams
Presiding
philipwilliams@ufl.edu

(9:50 – 11:45) Grand Salon 8

9:50 Welcome and introductions – Phillip Williams
10:00 **Comparative transcriptomes analysis reveals candidate genes associated with powdery mildew resistance in cultivated strawberry.** Ronald Tapia* and Seonghee Lee. Gulf Coast Research and Education Center, University of Florida, IFAS, Wimauma, FL. (seonghee105@ufl.edu) [V-33]

10:15 **QTL identification and marker development for Papaya Ringspot Virus (PRSV) resistance in squash.** Swati Shrestha*, Yuqing Fu, Vincent Michael, Geoffrey Meru. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (s.shrestha@ufl.edu) [V-34]

10:30 **Field evaluation of CRISPR-driven jointless pedicel fresh-market tomatoes.** Tong Geon Lee*. Gulf Coast Research and Education Center, University of Florida/IFAS, Wimauma, FL. (tonggeonlee@ufl.edu) [V-35]

10:45 **Performance of selective lettuce varieties and evaluation of bolting in a top vent high tunnel and open field conditions in north Florida.** Alex Bolques*, Gilbert Queeley, Fanny Ospina, Xin Zhao, Megan, Donovan, and Jesusa Legaspi. 1. Research and Extension Center, Florida A&M University, Quincy, FL; 2. Cooperative Extension Program, Florida A&M University, Tallahassee, FL; 3. Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL; 4. USDA, ARS, CMAVE, Florida A&M University, Tallahassee, FL. (alejandro.bolques@famu.edu) [V-36]

11:00 **Screening for biotic and abiotic stress resistant somatic clones from cultivated strawberry.** Cheol-Min Yoo*, Catalina Moyer, Cheryl Dalid, Vance M. Whitaker and Seonghee Lee. Gulf Coast Research and Education Center, University of Florida/IFAS, Balm, FL. (seonghee105@ufl.edu) [V-37]

11:15 **A simple marker-assay for selecting hull-less seed trait in pumpkin.** Geoffrey Meru*, Yuqing Fu, Vincent N. Michael, and Swati Shrestha. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL.
Vegetable Section

(gmeru@ufl.edu) [V-38]

11:30 Incidence and distribution of tomato yellow leaf curl (TYLC) disease and the potential of TYLC-resistant cultivars in management of TYLC in south Florida. Qingchun Liu* and Shouan Zhang, Tropical Research and Extension Center, University of Florida/IFAS, Homestead, FL. (q.liu1@ufl.edu; szhang0007@ufl.edu) [V-39]

11:45 End of sections. See you next year for the 135rd FSHS annual meeting
In-Service Training—
Agriculture

Tuesday Afternoon Session

Hilton Daytona Beach Oceanfront Resort, Daytona Beach, FL
1:00 P.M.—4:40 Grand Salon 6 and 7

“Improving health and productivity through manipulation of the root-soil environment”

Organizers: Ute Albrecht¹, ¹UF/FAS, Horticultural Sciences Department, Gainesville, FL, ²UF/IFAS Extension, Water Resources RSA, (ualbrecht@ufl.edu)

Agenda

1:00 Welcome and Introduction, pre-testing, background Dr. Ute Albrecht, UF/IFAS SWFREC
1:20 Plant biostimulants for use in agriculture, Dr. Ute Albrecht, UF/IFAS SWFREC
2:00 The importance and role of microbes in soil health, Dr. Sarah Strauss, UF/IFAS SWFREC

2:40 Break

3:00 Weed management using cover crops, Dr. Peter Dittmar UF/IFAS HortScience Dept.
3:40 Soil texture and its assessment in the context of soil health, Dr. Allan Bacon, UF/IFAS SWS Dept.
4:00 Discussions, post-test

4:40 Adjourn
Mango Summit

Tuesday Afternoon Session

Hilton Daytona Beach Oceanfront Resort, Daytona Beach, FL
1:30 P.M.—3:30 Grand Salon 1 and 2

Organizer: Noris Ledesma, UF/IFAS,
(norisledesma.mango@gmail.com)

Agenda

1:30 **National Mango Board Tools for the Mango Industry.** R. Ward¹, M. Michel² L. Ortega² and R. Mitton². ¹Food & Resources Economics, University of Florida; ²National Mango Board. [K-17]

1:45 **Mango internal discoloration (“cutting black” or “corte negro”).** Jeffrey K. Brecht*, Horticultural Sciences Department University of Florida, Gainesville, FL, USA. jkbrecht@ufl.edu [K-18]

2:00 **‘Rapozá’ a potential mango cultivar for the Americas.** Noris Ledesma*. Hervert Yair Ordoñez norisledesma.mango@gmail.com [K-19]

2:15 **Genomics-enabled plant breeding of mango.** Alan Chambers*. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. ac@ufl.edu [K-20]

2:30 **A Review of Asam Kumbang (Mangifera quadrifida Jack.).** Noris Ledesma*. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. norisledesma.mango@gmail.com [K-21]
2:45  Mango collection at fruit and spice park. Louise King. Fruit and Spice Park. [K-22]

3:00  Expanding mango consumption phase 1: mango (Mangifera indica) cultivar evaluation for the National Mango Board. Jonathan H. Crane*. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. jhcr@ufl.edu [K-23]

3:15  Mango Forum

3:30  End of sections. See you next year in Sarasota for the 135th FSHS annual meeting!
Hilton Daytona Beach Oceanfront Resort
Thank You to Our Sponsors!

UF | IFAS
UNIVERSITY of FLORIDA

Citrus Research and Development Foundation, Inc.

Mango.org

Disney