137th Annual Meeting of the

FLORIDA STATE HORTICULTURAL SOCIETY

2024
2024 Program Contents

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# Program Overview

## Registration Desk Hours – Orange Pre-Function

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday June 09</td>
<td>2:00PM—6:00 PM</td>
<td>Orange Pre-Function</td>
</tr>
<tr>
<td>Monday June 10</td>
<td>7:30 AM—5:00 PM</td>
<td>Orange A-B</td>
</tr>
<tr>
<td>Tuesday June 11</td>
<td>8:00 AM—12:00 PM</td>
<td>Orange A-B</td>
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## Sunday Afternoon—June 09

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>2:00—4:00</td>
<td>Poster Set up, Anna Mészáros</td>
</tr>
<tr>
<td>4:00—5:00</td>
<td>Opening Ceremony, George Fitzpatrick</td>
</tr>
<tr>
<td>4:15—4:45</td>
<td>Speaker: Lena Juarez, Executive Director Florida Agritourism Association</td>
</tr>
<tr>
<td></td>
<td>“What Agritourism is All About”</td>
</tr>
<tr>
<td>4:45—5:00</td>
<td>Awards Ceremony, George Fitzpatrick</td>
</tr>
<tr>
<td>5:00—6:00</td>
<td>Welcome Reception (Included in conference registration)</td>
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## Monday Morning—June 10

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>8:00—8:30</td>
<td>Coffee &amp; Tea</td>
</tr>
<tr>
<td>8:30—9:45</td>
<td>General Session</td>
</tr>
<tr>
<td>8:30</td>
<td>Welcome &amp; Presidential Address: Ute Albrecht, FSHS President</td>
</tr>
<tr>
<td>9:00</td>
<td>Speaker: Bryon White, Co-Founder and CEO - Yaupon Brothers</td>
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<tr>
<td></td>
<td>“Cultivating Change with Native Tea”</td>
</tr>
<tr>
<td>9:45</td>
<td>End of General Session</td>
</tr>
</tbody>
</table>
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>Cypress C</td>
</tr>
<tr>
<td>9:50-12:00</td>
<td>Citrus</td>
<td>Orange C</td>
</tr>
<tr>
<td>9:50-12:00</td>
<td>Handing &amp; Processing</td>
<td>Orange D</td>
</tr>
<tr>
<td>9:50-12:00</td>
<td>Krome Memorial Institute</td>
<td>Cypress B</td>
</tr>
<tr>
<td>9:50-11:45</td>
<td>Ornamental, Garden, &amp; Landscaping</td>
<td>Cypress A</td>
</tr>
<tr>
<td>9:50-12:00</td>
<td>Vegetables</td>
<td>Orange A-B</td>
</tr>
</tbody>
</table>

Monday Lunch
12:00—1:00 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>1:20-1:45</td>
<td>Agroecology &amp; Natural Resources</td>
<td>Cypress C</td>
</tr>
<tr>
<td>3:05-4:45</td>
<td>Agritourism</td>
<td>Cypress A</td>
</tr>
<tr>
<td>1:45-5:00</td>
<td>Best Management Practices</td>
<td>Cypress C</td>
</tr>
<tr>
<td>1:25-4:45</td>
<td>Citrus</td>
<td>Orange C</td>
</tr>
<tr>
<td>1:20-4:00</td>
<td>Handing &amp; Processing</td>
<td>Orange D</td>
</tr>
<tr>
<td>1:20-4:15</td>
<td>Krome Memorial Institute</td>
<td>Cypress B</td>
</tr>
<tr>
<td>1:15-3:00</td>
<td>Ornamental, Garden, &amp; Landscaping</td>
<td>Cypress A</td>
</tr>
<tr>
<td>1:20-4:45</td>
<td>Vegetables</td>
<td>Orange A-B</td>
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Monday Evening

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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<tbody>
<tr>
<td>5:15—6:15</td>
<td>Reception and Poster Session</td>
<td>Orange Pre-Function</td>
</tr>
<tr>
<td></td>
<td>(Included in conference registration - Presenters are encouraged to stay by their posters)</td>
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Tuesday Morning — June 11

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00—8:15</td>
<td>Horticultural Crops Breakfast (Event ticket required)</td>
<td>Citrus A-B</td>
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</table>

Invited Speaker: Marcio Resende, Assistant Professor, UF/IFAS Horticultural Sciences Department.

“Potatoes from Florida: The need for heat tolerance and local adaptation”
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>8:30—9:00</td>
<td>FSHIP Annual Business Meeting. Ute Albrecht, FSHIP President</td>
<td>Orange A-B</td>
</tr>
<tr>
<td>9:00—9:30</td>
<td><strong>Student Oral Competition and Poster Awards.</strong> Tie Liu, Anna Mészáros</td>
<td>Orange A-B</td>
</tr>
<tr>
<td>9:30</td>
<td>Coffee Break</td>
<td>Orange Pre-Function</td>
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</tbody>
</table>

**Concurrent Tuesday Morning Sessions:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>9:50—11:15</td>
<td>Citrus</td>
<td>Orange C</td>
</tr>
<tr>
<td>9:50—11:00</td>
<td>Handing &amp; Processing</td>
<td>Orange D</td>
</tr>
<tr>
<td>9:50—11:45</td>
<td>Vegetables Concurrent Session I</td>
<td>Orange A-B</td>
</tr>
<tr>
<td>9:50—12:00</td>
<td>Vegetables Concurrent Session II</td>
<td>Cypress ABC</td>
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**Tuesday Lunch**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>12:00—1:00</td>
<td>Extension Luncheon</td>
<td>Orange A-B</td>
</tr>
<tr>
<td></td>
<td>(Event ticket required)</td>
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<tr>
<td></td>
<td>Invited Speakers: Robert Hochmuth</td>
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<td></td>
<td>“Decades of Change in Florida’s Greenhouse Vegetable Industry”</td>
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**Tuesday Afternoon**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00—4:30</td>
<td><strong>In-Service Training I</strong></td>
<td>Orange C</td>
</tr>
<tr>
<td></td>
<td>&quot;Controlled Environment Agriculture&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>See full agenda at back of program</td>
<td></td>
</tr>
<tr>
<td>1:20—4:30</td>
<td><strong>In-Service Training II</strong></td>
<td>Cypress ABC</td>
</tr>
<tr>
<td></td>
<td>&quot;Managing Labor Risk Profitability: The UF/IFAS Farm Labor Supervisor Program Certification&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>See full agenda at back of program</td>
<td></td>
</tr>
<tr>
<td>1:30—4:05</td>
<td><strong>Mango Summit</strong></td>
<td>Orange D</td>
</tr>
<tr>
<td></td>
<td>See full agenda at back of program</td>
<td></td>
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Florida State Horticultural Society
2023-2024 Board of Directors and
Ex-Officio Members

Chairman of the Board: George Fitzpatrick
President: Ute Albrecht
President-Elect: Evelyn “Prissy” Fletcher

Sectional Vice Presidents
Agritourism: Gene McAvoy
Agroecology & Natural Resources: Nickie Munroe
Citrus: John Chater
Handling & Processing: Adrian Berry
Krome Memorial Institute: Muhammad A. Shahid
Ornamental, Garden and Landscape: David Austin
Vegetable: Alejandro Bolques
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Treasurer: Kevin Athearn

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David Kadyampakeni
Proceedings Editor: Mary Lamberts
Marketing Coordinator/Webmaster: Lindy Rome, Leslie Wysocki at AMC Sources

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Richard Campbell
Communications Coordinator: Mark Ritenour
In Service Training Coordinator: Tripti Vashisth
Program Coordinator: Germán Sandoya
Florida State Horticultural Society
2024 Meeting Facilitators

Local Arrangements Coordinator: Heather Kalaman
Sponsorship Coordinator: Gene McAvoy
Student Competitions Coordinator: Tie Liu
CEU Coordinator: Tripti Vashisth
Poster Session Coordinator: Anna Mészáros
FSHS Newsletter Team: Alicia Lamborn
Scholarship Coordinator: David Austin

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<thead>
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<th>Level Level Sponsor</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Diamond Level</td>
<td>$5,000 and above</td>
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<tr>
<td>National Mango Board</td>
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<tr>
<td>Platinum Level</td>
<td>$2,000—$4,999</td>
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<tr>
<td>UF IFAS Horticultural Sciences</td>
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<tr>
<td>UF IFAS Dean of Extension</td>
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<tr>
<td>Gold Level</td>
<td>$1,000—$1,999</td>
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<td>Citrus Research and Development Foundation, Inc (CRDC)</td>
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<tr>
<td>Silver Level</td>
<td>$500—$999</td>
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<td>UF IFAS Environmental Horticulture</td>
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<tr>
<td>Anonymous</td>
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<tr>
<td>Bronze Level</td>
<td>(under $500)</td>
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<tr>
<td>Florida Tomato Committee</td>
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<tr>
<td>Cultivate AI</td>
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Please see the full list of sponsors on the FSHS Website, poster section, and meeting rooms.
2024 FSHS Patron Members

Michael Boss
Ed Etxeberria
Gene McAvoy
Karen Stauderman
Erika Wallace

Presentation, Publication and Submission Guidelines

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

- The SENIOR AUTHOR must be a member of the Society, and the PRESENTING AUTHOR of the paper must be registered for the annual meeting (except for invited papers) for papers to be accepted for publication in 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 emailed as a Word document to the FSHS editor, Mary Lamberts (editors@fshs.org), copying the appropriate sectional VP, at the time of the meeting. PDFs will be returned to the author for resubmission in the correct format.

Please name your manuscript using: the paper number from the Conference Program (ANR-5), your last name (Gettys) (you can add other last names using a hyphen between them); please add SN at the end if the paper is a scientific note or Abstract + doi if that is the format you are using. Both the Editor and Publish keep track of manuscripts using this system.

- Authors may also publish their manuscripts in any refereed journal, grower publication or EDIS document. The publications will be published as an abstract + a doi or other link.

For all submissions, see the complete Manuscript Preparation Guide (https://www.fshs.org/instructions-for-authors), including the Literature Cited Chart, for the Proceedings of the Florid State Horticultural Society.
2024 FSHS

Poster Presentation Guidelines

- All posters must be set up Sunday, June 9th, between 2:00 to 4:00 pm at the Orange Pre-function Area.
- Student Posters will be judged between Sunday 5:00 pm and Monday 3:00 pm.
- Judging scoring criteria will be provided to poster presenters and judges via email in advance.
- Poster presenters are encouraged to be at their displays during the Monday Evening Reception (5:15pm-6:15pm) to interact with meeting participants.
- The winners for best student poster will be announced at the business meeting Tuesday morning.
- Posters must be taken down on Tuesday, June 11th, by noon.

Poster dimensions and set-up:

- A 40” wide x 28” tall poster board and paper clips will be provided for participants to display their posters.
- The poster must not exceed the 40” x 28” size limit (landscape).
- Two posters will be displayed per table.
Welcome 2024 FSHS
Sectional Vice-Presidents!

Agritourism: Gene McAvoy UF/IFAS Extension, Emeritus,
gmcavoy@ufl.edu

Agroecology & Natural Resources: Leslie Nicole Munroe, UF/IFAS Extension Indian River County, lmunroe@ufl.edu

Citrus: John Chater, UF/IFAS Citrus Research and Education Center, jchater@ufl.edu

Handling & Processing: Adrian Berry, UF/IFAS Horticultural Sciences adber-ry@ufl.edu

Krome Memorial Institute: Muhammad A. Shahid, UF/IFAS North Florida Research and Education Center, msha-hid@ufl.edu

Ornamental, Garden, & Landscape: David Austin, UF/IFAS Highlands County, davidaus-tin@ufl.edu

Vegetables: Alex Bolques, FAMU, alejandrobolques@famu.edu
Technical Program Schedule

Poster Session:

Anna Mészáros
Coordinator
ameszaros@ufl.edu

[P-1-ANR] Assisting Florida sod producers with protecting water quality by quantifying nutrient inputs and exports. Bonnie Wells,1*, Bryan Unruh2, Alex Lindsey3, Mark Tancig4, Matt VanWeelden5, Kevin Kenworthy6, and Marco Schiavon7, 1Brevard County Extension, University of Florida IFAS, Cocoa, FL, 2West Florida Research and Education Center, University of Florida IFAS, Jay, FL, 3Environmental Horticulture Department, University of Florida IFAS, Gainesville, FL, 4Leon County Extension, University of Florida IFAS, Tallahassee, FL, 5Palm Beach County Extension, University of Florida IFAS, Belle Glade, FL, 6Agronomy Department, University of Florida IFAS, Gainesville, FL, 7Ft. Lauderdale Research and Education Center, Ft. Lauderdale, FL. (bcwells@ufl.edu)

[P-2-ANR] Nitrogen uptake efficiency of daikon radish on sandy soils in greenhouse conditions: an evaluation. Miurel Brewer1*, Davie Kadyampakeni1, Ramdas Kanissey2, Samuel Kwakye1, 1Soil, Water and Ecosystem Sciences, University of Florida, Gainesville, FL, 2Horticultural Sciences, University of Florida, Gainesville, FL, 3Sand County Foundation 8461 Jamestown Dr, Winter Haven, FL. (miurelbrewer@ufl.edu)

[P-3-ANR] Floridians’ residential fertilizer behaviors, practices, and ordinance awareness. Karlibeth Leitheiser1*, Ricky Telg1, Bryan Unruh2, Yilin Zhuang3, Michael Dukes4, Sandra Anderson1, Hayk Khachatryan5, William Lester6, 1Center for Public Issues Education in Agriculture and Natural Resources, University of Florida IFAS, Gainesville, FL, 2West Florida Research and Education Center, University of Florida IFAS, Jay, FL, 3Mid-Florida Research and Education Center, University of Florida IFAS, Apopka,
Seed treatments decreased time to emergence and increased abundance of emergent seedlings in American beautyberry (*Callicarpa americana*). William Moore¹, Jennifer Meader, Brian Bovard², Anna Goebel¹. ¹Department of Biological Sciences, Florida Gulf Coast University, Fort Myers, FL, ²Department of Ecology and Environmental Studies, Florida Gulf Coast University, Fort Myers, FL. (kleitheiser@ufl.edu)

Utilizing Florida-friendly landscaping to revitalize a neighborhood learning garden in an underserved community. Leslie N. Munroe¹. Indian River County Extension, University of Florida IFAS, Vero Beach, FL. (lnmunroe@ufl.edu)

Pheno Cam: a camera based remote sensing method to measure phenology in Florida. David N. Campbell* and Danielle D. Treadwell. Horticultural Sciences Department, University of Florida IFAS, Gainesville, FL. (campbell@ufl.edu)

Effects of oxytetracycline trunk injections on tree health of different HLB-affected citrus accessions. Giancarlo Buzzi¹,², Matthew R. Mattia³, and Lorenzo Rossi¹. ¹Indian River Research and Education Center, University of Florida IFAS, Fort Pierce, FL, ²United States Horticulture Research Laboratory, Agricultural Research Service, USDA, Fort Pierce, FL. (gbuzzi@ufl.edu)

Study of variety and rootstock effect on the incidence of *Delotococcus aberiae* in citrus plants in Castellon (Spain), using remote sensing data. Constanza Rubio¹, Belén Franch¹,³, Salvador Escriche⁴, Daniel Tarrazo-Serrano¹, Sergio Castiñeira¹, Antonio Uris¹, Patricia Arizo-Garcia⁴, Rubén Simeón⁴, Alberto San Bautista⁴. ¹Center of Physical Technologies, Universitat Politècnica de València, Spain, ²Global Change Unit, Image Processing Laboratory, Universitat de València, Spain, ³Department of Geographical Sciences, University of Maryland, USA, ⁴Department of Plant Production, Universitat Politècnica de València, Spain. (rusibro@etsiamn.upv.es)
[P-9-C] Effect of potassium silicate on performance and growth of mature citrus trees. Jose Prieto* and Davie Kadyampakeni. Citrus Research and Education Center, University of Florida IFAS, Lake Alfred, FL. (j.prietofajardo@ufl.edu)

[P-10-C] Endophytic potential of Beauveria bassiana in ‘Valencia’ sweet orange trees grafted on US-942 rootstock. Terri L. Price-Baker, Joseph P. Paoli, John-Paul Fox, Jeremiah A. Rodriguez, Pasco B. Avery, Lorenzo Rossi. Indian River Research and Education Center, University of Florida IFAS, Fort Pierce, FL. (terriprice@ufl.edu)

[P-11-C] Short-term effects of cover crops on soil properties and greenhouse gas emissions on citrus production in Florida. Hossein Ghoveisi¹, Gio Ijpkmeule², Mieurel Brewer¹, Davie Kadyampakeni. ¹Citrus Research and Education Center, University of Florida IFAS, Lake Alfred, FL. ²IFF-Citrus Innovation Center, Lakeland, FL (dkadyampakeni@ufl.edu)

[P-12-C] Nursery characteristics and field performance of novel citrus rootstocks. Caroline Tardivo¹, Kim D. Bowman², Ute Albrecht¹. University of Florida IFAS, Southwest Florida Research and Education Center, Immokalee, Florida, USA. ²US Horticultural Research Laboratory, USDA, ARS, Fort Pierce, FL. (caroline.defava@ufl.edu)

[P-13-C] Fine-tuning zinc and potassium treatments to increase yield in sweet orange. Murillo Otavio de Sousa* and Fernando Alferez. University of Florida/IFAS, Southwest Florida Research and Education Center, Immokalee, FL. (motavideosousa@ufl.edu)

[P-14-C] Methyl salicylate and gibberellic acid for the rehabilitation of HLB-affected sweet oranges. Gurleen Kaur*, Shalini Pareek, Taylor Livingston, and Tripti Vashisth. University of Florida IFAS, Citrus Research and Education Center, Lake Alfred, FL. (gurleenkaur1@ufl.edu)

[P-15-HP] Modified hydrocooling and optimized postharvest handling practices can improve the shelf life of water spinach during summer in humid subtropical regions. Wei-Shiang Liao*, Wing-Fu Fung and Ah Chiou Lee. Taoyuan District Agricultural Research and Extension
Ethyl formate does not reduce decay or extend the quality of stored strawberries. Jingyi Cheng*, Ahmad Moussa1, Moshe Doron2, Yavuz Yagiz1, Jeffrey Brecht2, Liwei Gu1. 1Food Science and Human Nutrition Department, University of Florida IFAS, Gainesville, FL, 2Horticultural Science Department, University of Florida IFAS, Gainesville, FL. (jingyicheng@ufl.edu)

Evaluating olives as an alternative fruit crop for Florida Audrey H. Beany1*, John-Paul Fox1, Davie M. Kadyampakeni2, Michael O’Hara Garcia3, Sandra M. Guzmán1, Alejandro Bolques4, and Lorenzo Rossi1. 1Indian River Research and Education Center, University of Florida IFAS, Fort Pierce, FL, 2Soil, Water and Ecosystem Sciences Department, University of Florida IFAS, Gainesville, FL, 3Florida Olive Council, LAA, Alachua, FL. 4School of the Environment, Florida A&M University, Tallahassee, FL. (ahbeany@ufl.edu)

Empowering home vegetable cultivation through container gardening. Julio Perez*. Putnam County Extension, University of Florida IFAS, Palatka, FL. (pjulio@ufl.edu)

Establishing in vitro germination protocols for three threatened cactus species. Reed Gilmore* and John Griffis. Department of Ecology & Environmental Studies, Florida Gulf Coast University, Ft. Myers, FL (rdgilmore0671@eagle.fgcu.edu)

Genome size estimates of Hibiscus rosa-sinensis cultivars using flow cytometry. Sisi Chen*, Vincent N. Michael, Pamela Moon, Xingbo Wu. Tropical Research and Education Center, University of Florida IFAS, Homestead, FL (sisi.chen@ufl.edu)

Empowering communities with gardening education to confront food insecurity. Emily A. Marois*, Kara C. Krueger, John W. Roberts, Yesenia A. Rodriguez, Anna Mézésáros, Ronald Rice, and Frank Dowdle. Palm Beach County Extension, University of Florida IFAS, West Palm Beach, FL. (Emarois@pbcgov.org)
**P-22-OGL**  
Progress on the breeding of an ornamental redbud adapted to north central Florida. Paislyn M. Ellington¹*, Dennis J. Werner², and José X. Chaparro¹. ¹Horticultural Sciences Department, University of Florida, Gainesville, FL. ²Horticultural Sciences Department, North Carolina State University, Raleigh, NC. (pellington@ufl.edu)

**P-23-OGL**  
in-vitro micropropagation of Anthurium using various plant growth regulators (PGRs). Milagros Ninoska Munoz Salas¹*, Bárbara Nogueira Souza Costa¹, Brett Jestrow², Amir Ali Khoddamzadeh¹. ¹Department of Earth and Environment, Florida International University, Miami, FL, ²Fairchild Tropical Botanic Garden, Coral Gables, FL. (mmuno126@fiu.edu)

**P-24-OGL**  
Understanding ecophysiological responses of cabbage palm to saltwater intrusion and silicon amendment. Pedro Gonzalez¹, Daniel Tucker¹,², Maruthi Sridhar Balaji Baskar¹, Madhugiri Nageswara-Rao¹, M. Patrick Griffith¹, and Amir A. Khoddamzadeh¹. ¹Department of Earth and Environment, Florida International University, Miami, FL, ²Montgomery Botanical Center, Coral Gables, FL. (pgonz179@fiu.edu)

**P-25-OGL**  
Cultivation and seed propagation of the leafless beaked orchid, *Sacoila lanceolata* (Aubl.) Garay. Malcolm M. Manners¹ and Dominic A. Garrido². ¹Department of Horticultural Science, Florida Southern College, Lakeland, FL, ²Better-Gro, Port Charlotte, FL. (dominic.garrido@icloud.com)

**P-26-OGL**  
Salinity tolerance in olive tree cultivars ‘Oliana’ and ‘Lecciana’. Khalid Hussain*, John-Paul Fox, Lorenzo Rossi. Indian River Research and Education Center, Fort Pierce, FL (l.rossi@ufl.edu)

**P-27-V**  
Demonstrating the advancements of automated irrigation technology for adoption in fruit and vegetable crops. Tyler Pittman*. Gilchrist County Extension, University of Florida IFAS, Trenton, FL. (pittmanh1@ufl.edu)

**P-28-V**  
Integrating compost and sunn hemp cover crop residue in an organic celery production system. Zachary
Ray1, Gabriel Maltais-Landry2, Lincoln Zotarelli1, Xin Zhao1. 1Horticultural Sciences Department, University of Florida, Gainesville, FL, 2Department of Soil, Water, and Ecosystem Sciences, University of Florida, Gainesville, FL. (ray.ztyler@ufl.edu)

**[P-29-V]**

Marker-assisted selection of pepper plants with resistances to both bacterial spot disease and root-knot nematodes. Dominick Padilla1*, Victor Arias Fiallos1, Jingwei Fu1, Donald Dickson3, Jerry Minsavage2, Jeff Jones2, and Bala Rathinasabapathi1. 1Horticultural Sciences Department, University of Florida, Gainesville, FL, 2Plant Pathology Department, University of Florida, Gainesville, FL, 3Entomology and Nematology Department, University of Florida, Gainesville, FL. (dpadilla@ufl.edu)

**[P-30-V]**

Weevil management in celery and parsley. Anna Mészáros1*, Julien Beuzelin2. 1Palm Beach County Extension, University of Florida IFAS, West Palm Beach, FL, 2Everglades Research and Education Center, University of Florida IFAS, Belle Glade, FL (ameszaros@ufl.edu)

**[P-31-V]**

Identification and cultivation of superior potato varieties in northeast Florida. Shayan Hadjiabadi1*, Leo Hoffman, Marcio Resende, Lincoln Zotarelli. Horticultural Sciences Department, University of Florida. Gainesville, Florida. (shadjiabadi@ufl.edu)
Monday Afternoon Session

(3:05-4:45) Cypress A

3:05  Welcome and Introductions, Gene McAvoy

A – AgriTourism

3:15  Helpful Hints On Hosting On Farm Events. Matthew Lollar* UF/IFAS Extension Santa Rosa County. (mlollar@ufl.edu) [AGR-1]

3:30  Supporting Agritourism Providers Through a Regional Agritourism Conference. Yvette Goodiel* UF/IFAS Extension Martin County. (goodiel@ufl.edu) [AGR-2]

3:45  Agri-tourism needs assessment and opportunities, observations from Duval County. Stephen Jennewein* UF/IFAS Extension Duval County. (sjennewein@ufl.edu) [AGR-3]

4:00  Mobile Application Use in Agritourism. Jill Stanford* Cultivate Agi. (jstanford@cultivateagi.com) [AGR-4]

4:15  Tours Increase Agriculture Awareness and Extension Revenues. David Austin* UF/IFAS Extension Highlands County. (davidaustin@ufl.edu) [AGR-5]

4:30  Agritourism Section Business Meeting. Presiding Gene McAvoy, Coordinator.

4:45  End of Sessions. See you next year for the 138th FSHS annual meeting!
Monday Morning Session

(9:50 – 12:15) Cypress C

9:50 Welcome and Introductions, Leslie Nicole Munroe.

A – Student Presentations

10:00 **Response of Young D. Asper Bamboo to Increased Nitrogen Rates Under Greenhouse Conditions in Florida.** Januarie Cyrus*, Davie Kadyampakeni. UF/IFAS Citrus REC, Lake Alfred, FL. (cjanuarie@ufl.edu) [ANR-1]

10:15 **Nitrogen Mineralization and Carbon Dioxide Emissions From Amendments Used in Florida Soils With Incubation Data.** Cristina Gil*, Gabriel Maltais-Landry. University of Florida, (cristina.gil@ufl.edu) [ANR-2]

10:30 **The Use of Phosphorus Starter Fertilizer in Field Corn Production.** Jay Capasso*, Kelly Morgan*, Vimala Nair*, Jehangir Bhadha*, Vivek Sharma*, Kevin Athrearn*, Joel Love*, Shivendra Kumar*. 1UF/IFAS North Florida Research and Education Center - Suwannee Valley, 2UF/IFAS North Florida REC Suwannee Valley, Live Oak, FL, 3UF/IFAS Soil, Water & Ecosystem Sciences Dept, Gainesville, FL, 4UF/IFAS Agricultural & Biological Engineering Dept, Gainesville, FL. (jcapasso@ufl.edu) [ANR-3]

B – Agroecology

10:45 **Preparing to Scale Agroecology - Highlights from Around Florida.** Zachary Brym*, Daniel Calzadilla, Cliff Martin, Catalina
Monday Afternoon Session

(1:20 – 1:45) Cypress C

1:20 Welcome and Introductions
Agroecology and Natural Resources Section

1:30  **Lettuce Phosphorus Fertilizer Recommendation on Organic Soils of Florida.** Shabnam Sadeghibaniani 1*, Germán Sandoya Miranda 1, Jehangir Bhadha 1, Md Anik Mahmud 1, Steven Sargent 2. 1 Everglades Research and Education Center, University of Florida, Belle Glade, Florida, USA, 33430. 2 Horticulture Department, University of Florida, Gainesville, Florida, USA, 32607 [ANR-9]

1:45  **Adjourn**

**Tuesday Morning Session**

10:00  **Agroecology & Natural Resources Field Trip- Orange County Extension Demonstration Gardens-**
Hosted by Dr. Heather Kalaman and Dr. JK Yarborough:
We will meet at Orange County Extension Office, 6021 Conway Rd, Orlando, FL 32812.
Our hosts will take us on a guided tour of the Exploration Gardens which will also include a talk on the honeybees they also keep.
Please be sure to wear comfortable clothing, protect yourself from the sun, and manage your hydration levels for this outing.

12:00  **End of sessions.** See you next year for the 138th FSHS annual meeting!
Citrus Section

John M. Chater
Presiding

jchater@ufl.edu

Monday Morning Session

(9:50 – 12:00) Orange C

9:50  Welcome and Introduction, John M. Chater

A– Water, Soil, and Nutrient Management

10:00  Impact of cover cropping on soil and tree parameters in citrus groves affected by citrus greening: a field study in the Indian River regions of Florida. Lorenzo Rossi1*, Lukas M. Hallman1, John-Paul Fox1, Alan L. Wright2. 1Horticultural Sciences Department, University of Florida, IFAS, Indian River Research and Education Center, Fort Pierce, FL, 2Soil, Water, and Ecosystem Sciences Department, University of Florida, IFAS, Indian River Research and Education Center, Fort Pierce, FL. (l.rossi@ufl.edu). [C-1]

10:15  The impact of Irrigation rate on the fate of root morphology and life span of sweet oranges at varying tree densities in commercial groves. Alisheikh A. Atta1*, Kelly T. Morgan2, Said A. Hamido3, and Davie M. Kadyampakeni1. Citrus Research and Education Center, University of Florida, Lake Alfred, FL, 2Soil and Water Sciences Department, University of Florida, 2157 McCarty Hall, Gainesville, FL, 3Rodale Institute, Kutztown, PA. (aatta@ufl.edu). [C-2]

10:30  Influence of the application of Zn and Mn obtained from black mass on young citrus plant growth. Ana Isabel Escudero1*, Patricia Arizo-Garcia2, Rubén Simeón1, Miguel Angel Naranjo2, Marcos Caballero2, Feliz Antonio López2, María Isabel Martín2, Alberto San Bautista1. 1Departamento de Producción Vegetal, Universitat Politècnica de València, Valencia, Spain, 2Fertinagro Biotech, Teruel, Spain, 3TecnoEco Group, National Center for Metallurgical Research, Spanish National Research Council, Madrid,
The Historical Utility and Research of Entomopathogenic Fungi in Floridian Citriculture, 1885-2024. Joseph P. Paoli1*, Pasco B. Avery2, Mark A. Ritenour1, Liliana M. Cano3, Lorenzo Rossi1. 1Indian River Research and Education Center, Horticultural Sciences Department, Institute of Food and Agricultural Sciences, University of Florida, Fort Pierce, FL, 2Indian River Research and Education Center, Entomology and Nematology Department, Institute of Food and Agricultural Sciences, University of Florida, Fort Pierce, FL, 3Indian River Research and Education Center, Plant Pathology Department, Institute of Food and Agricultural Sciences, University of Florida, Fort Pierce, FL. (l.rossi@ufl.edu). [C-4]

B– Cultural Practices, Tree and Fruit Physiology

Grove-First: A Novel Approach to Field Testing Molecules for the Treatment of Citrus Greening. Guilherme Locatelli1, Nicholas R. Larson2, Ellen Cochrane1,2, Randall P. Niedz2, Michelle L. Heck3,4, Lorenzo Rossi1. 1Indian River Research and Education Center, Horticultural Sciences Department, Institute of Food and Agricultural Sciences, University of Florida, Fort Pierce, FL, United States Horticultural Research Laboratory, USDA Agricultural Research Service Fort Pierce, FL, 3Emerging Pests and Pathogens Research Unit, USDA Agricultural Research Service, Ithaca, NY, 4Plant Pathology and Plant Microbe Interactions Section, School of Integrative Plant Science, Cornell University, Ithaca, NY. (l.rossi@ufl.edu). [C-5]

Brassinosteroids improve yield and plant defense in different citrus varieties. Saoussen Ben Abdallah1*, Fernando Alferez1. 1Southwest Florida Research and Education Center, the University of Florida, Institute of Food and Agricultural Sciences UF-IFAS, Immokalee, FL. (saoussen.benabda@ufl.edu). [C-6]

Exploring the Effect of Brassinosteroids Application Timing on the Internal Fruit Quality in Mature Citrus Trees. Divya Aryal1*. Fernando Alferez1. 1Southwest Florida Research and Education Center, University of Florida, Institute of Food and Agricultural Sciences UF-IFAS, Immokalee, FL. (divyaaryal@ufl.edu). [C-7]
11:45  **Key components of grapefruit quality affecting pack-out and fruit revenue in CUPS.** Arnold Schumann*, Laura Waldo, Mark Ritenour, Chris Oswalt. 1 Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL, 2 Indian River Research and Education Center, University of Florida, IFAS, Ft. Pierce, FL, 3 Polk County Extension Service, PO Box 9005, Drawer HS03, Bartow, FL. (schumaw@ufl.edu). [C-8]

12:00  **Lunch**

**Monday Afternoon Session**

(1:25 – 4:45) Orange C

1:25  Welcome and Introduction, John M. Chater, Ph.D.

**B– Cultural Practices, Tree and Fruit Physiology (continued)**

1:30  **To Understand the Cause and Mechanism of Poor Fruit Attributes in HLB-symptomatic Sweet Orange Fruit.** Meryam Manzoor*, Mary Sutton, Taylor Livingston, Tripti Vashisth. 1 University of Florida IFAS, Citrus Research and Education Center, Lake Alfred, FL. (meryam.manzoor@ufl.edu). [C-9]

1:45  **Optimizing Oxytetracycline Injection in Citrus Trees: Concentration and Dosage Effects.** Jasmine de Freitas*, Caroline Tardivo, Leigh Archer, Ute Albrecht. 1 University of Florida/IFAS, Southwest Florida Research and Education Center, Immokalee, FL, 2 Rodale Institute, Kutztown, PA. (ualbrecht@ufl.edu). [C-10]

2:00  **Efficacy of Propionic Acid in Reducing Pre-harvest Fruit Drop in 'Hamlin' Sweet Oranges Under Huanglongbing (HLB) Stress.** Pablo Orozco*, Fernando Alferez. 1 Southwest Florida Research and Education Center, University of Florida, Institute of Food and Agricultural Sciences UF-IFAS, Immokalee, FL. (pablojoq1994@gmail.com). [C-11]

**C– Student Presentations**

2:15  **Therapeutic Impacts of Molybdenum on Young Huanglong-
Citrus Section

**Bing-Affected Citrus Trees.** Kondwani Kamsikiri, Davie Kadyampakeni. Horticultural Sciences Department, Citrus Research and Education Center, University of Florida, Lake Alfred, FL. (dkadyampakeni@ufl.edu). [C-12]

**Foliar spray of macronutrients influences leaf nutrient status and citrus fruit qualities of Sugar Belle® grown in Florida sandy soil.** Shankar Shrestha, Laura Waldo, Arnold Schumann. Horticultural Sciences Department, Citrus Research and Education Center, University of Florida, Lake Alfred, FL. (shrestha.s@ufl.edu). [C-13]

**Response of Grapefruit Trees to Reclaimed Water as Alternative to Groundwater Irrigation in Florida.** Neus Alcon Bou, Sandra Guzman, Lorenzo Rossi. University of Florida, Institute of Food and Agricultural Sciences, Indian River Research and Education Center, Fort Pierce, FL. (l.rossi@ufl.edu). [C-14]

**Does variable macronutrient application impact the performance of huanglongbing (HLB)-affected sweet oranges?** Monika Peddapuli, Alisha Atta, Davie Kadyampakeni. Citrus Research and Education Center, University of Florida, Lake Alfred, FL. (dkadyampakeni@ufl.edu). [C-15]

**Impact of Huanglongbing (HLB) on Source-Sink Dynamics and Photosynthesis in Citrus.** Dorcas Alade, Christopher Vincent. Horticultural Sciences Department, Citrus Research and Education Center, University of Florida, Lake Alfred, FL. (aladedorcas@ufl.edu). [C-16]

**Evaluation of Different Container Types on Root Architecture and Performance of Nursery-Grown Citrus Plants.** Ankit Pokhrel, Ute Albrecht. University of Florida/IFAS, Southwest Florida Research and Education Center, Immokalee, FL. (pokhrel.an@ufl.edu). [C-17]

**Cover Crops for the Indian River Citrus District: Selection of Leguminosae Species Based on Biomass and Root Nodulation.** Lukas Hallman, John-Paul Fox, Audrey H. Beany, Alan L. Wright, Lorenzo Rossi. Horticultural Sciences Department, University of Florida, IFAS, Indian River Research and Education Center, Fort Pierce, FL. Soil, Water, and Ecosystem Sciences Department, University of Florida, IFAS, Indian River Research and Education Center, Fort Pierce, FL. (l.rossi@ufl.edu). [C-18].
4:00  **Rootstock responses to oxytetracycline trunk injections for managing huanglongbing (HLB) in Florida citrus.** Larissa Nunes1*, Brandon Page2, Ute Albrecht1. 1University of Florida/IFAS, Southwest Florida Research and Education Center, Immokalee, FL, 2Citrus Research and Development Foundation, Lake Alfred, FL. (nunesdasilva.la@ufl.edu). [C-19].

4:15  **Field evaluation of different rates of oxytetracycline delivered by trunk injection in mature 'Hamlin' sweet orange trees.** Gabriel Pugina1*, Caroline Tardivo1, Ute Albrecht1. 1University of Florida/IFAS, Southwest Florida Research and Education Center, Immokalee, FL. (ualbrecht@ufl.edu). [C-20]

4:30  **Citrus section business meeting.** Presiding John Chater, VP and Muhammad Shahid, VP-elect

4:45  Adjourn

**Tuesday Morning Session**

(9:50 – 11:15) Orange C

9:50  Welcome and Introduction, John M. Chater

**D – Breeding and genetic improvement**

10:00  **Utilizing drones for high-throughput phenotyping of citrus tree health to identify HLB tolerant individuals for breeding and selection.** John M. Chater1* and Emily S. Worbington. 1Horticultural Sciences Department, Citrus Research and Education Center, University of Florida, Lake Alfred, FL. (jchater@ufl.edu). [C-21]

10:15  **Understanding of molecular mechanism of newly identified natural bud sport from the ‘Flame’ Grapefruit.** Sheetal Ramekar1**, Gary England1, Manjul Dutt1. 1Horticultural Sciences Department, Citrus Research and Education Center, University of Florida, Lake Alfred, FL, 2Extension Agent IV Emeritus, University of Florida, IFAS, DeLand, FL. (manjuldutt@ufl.edu). [C-22]

10:30  **Molecular Analysis of Pummelo-Finger Lime Hybrids Following Huanglongbing (HLB) Infection.** Lamiaa M. Mahmoud1, Jaideep Deol1, Jude Grosser1, Nabil Killiny1, Manjul Dutt1. 1Citrus
Citrus Section

Research and Education Center, Institute of Food and Agricultural Sciences, University of Florida, Lake Alfred, FL. (lamiaa.mahmoud@ufl.edu). [C-23]

10:45 Rootstock Effects on Yield and Juice Quality of HLB-affected 'Ray Ruby' Grapefruit and 'Glenn Navel' Sweet Oranges. Flavia Zambon¹, Macselynia Hossain¹, Mark Ritenour¹, Ronald Cave¹, and Pete Spyke². ¹Indian River Research and Education Center, University of Florida/IFAS, Fort Pierce, FL, ²Arapaho Citrus, Fort Pierce, FL. (fzambon@ufl.edu). [C-24]

E – Marketing

11:00 Marketing and willingness to pay for finger limes. Fredy H. Ballen¹*. ¹Food and Resource Economics Department, UF/IFAS Tropical Research and Education Center, Homestead, FL. [C-25]

11:15 End of sessions. See you next year for the 138th FSSH annual meeting!
Handling & Processing Section

Adrian Berry
Presiding
adberry@ufl.edu

Monday Morning Session

(9:50 – 12:00) Orange D

9:50  Welcome and Introductions, Adrian Berry

A – Cultivar Selections

10:00  Comparative Analysis of Lemon Juice Quality: A Study of Ten Hybrids and Commercial Cultivars in Florida. Thais Pádua Freitas*, Matthew Mattia¹, Anne Plotto¹ and Jinhe Bai¹. ¹USDA-ARS, Horticultural Research Laboratory, Fort Pierce, FL. (thaispadua777@gmail.com) [H&P-1]

10:15  Postharvest Performance of UF Selection 914 – A Red-fleshed Grapefruit-like Hybrid. Cuifeng Hu¹, Fred Gmitter², Jude Grosser², John Chater², and Mark Ritenour¹*. ¹Indian River Research and Education Center, University of Florida/IFAS, Fort Pierce, FL. ²Citrus Research and Education Center, University of Florida/IFAS, Lake Alfred, FL. (ritenour@ufl.edu) [H&P-2]

10:30  Postharvest Changes in Finger Lime Fruit (Citrus australasica, F. Muell.) during Storage at Chilling or Non-chilling Temperatures. Moshe Doron¹*, Faisal Shahzad¹, and Jeffrey Brecht¹. ¹Horticultural Sciences Dept., University of Florida/IFAS, Gainesville, FL. (moshik@ufl.edu) [H&P-3]

B – Student Presentations

10:45  Escherichia coli Transfer onto and Internalization into Strawberries Dropped on Plastic Mulch. Claudia A. Pegueros-Valencia*, Loretta Friedrich, Michelle Danyluk. Citrus Research and Education Center, Food Science and Human Nutrition, University
of Florida/IFAS, Lake Alfred, FL (claudiapeguerosv@ufl.edu) [H&P-4]

11:00 Ethylene Degreening Enhances Peel Coloration in Georgia-Grown Satsuma (Citrus reticulata) Citrus Fruit. Taiwo Owolanke*, Orestis Giannopoulos, Ramsey Corn, Anthony Bateman, and Angelos Deltsidis. Department of Horticulture, University of Georgia, Tifton, GA; University of Georgia Extension, Valdosta, GA. (taiwo.owolanke@uga.edu) [H&P-5]

11:15 Salmonella Cross-contamination Risks between Tomatoes and Brush Rollers during Postharvest Activities. Mari Schroeder* and Michelle Danyluk. Citrus Research and Education Center, University of Florida/IFAS, Lake Alfred, FL. (mari.schroeder@ufl.edu) [H&P-6]

11:30 Biochemical Assays at Harvest Potentially Associated with Shelf-Life in Lettuce Grown in Non-Traditional Areas of Florida. Jesse Murray*, Adrian Berry, Christian Christensen, Steve Sargent, and Germán Sandoya. Everglades Research and Education Center, University of Florida/IFAS, Belle Glade, FL; Horticultural Sciences Dept., University of Florida /IFAS, Gainesville, FL; Hastings Agricultural Extension Center, University of Florida/IFAS, Hastings, FL. (jesse.murray@ufl.edu) [H&P-7]

11:45 Fruit Characteristics of Six Mandarin Hybrids Tolerant to HLB. Thais Pádua Freitas, Matthew Mattia, Anne Plotto* and Jinhe Bai. USDA-ARS, Horticultural Research Laboratory, Fort Pierce, FL. (thaispadua777@gmail.com) [H&P-8]

12:00 Lunch

Monday Afternoon Session

(1:20 – 4:00) Orange D

1:20 Welcome and Introductions

C – Postharvest Technologies

1:30 Tracking Postharvest Quality of Melons (Cucumis melo L.) Imported from Central America. Adrian Berry*, Steven Sargent, and Merce Santana. Horticulture Sciences Dept., University of Florida/IFAS, Gainesville, FL. (adberry@ufl.edu) [H&P-9]

1:45 Postharvest Changes in Bioactive Compounds and Antioxi-
**Handling & Processing Section**

**Dant Activity in Muscadine Grape Cultivars during Cold Storage.** Fariborz Habibi¹*, Ali Sarkhosh¹, Jeffrey Brecht¹. ¹ Horticultural Sciences Dept., University of Florida/IFAS, Gainesville, FL. (habibi@ufl.edu) [H&P-10] 2:00

**Evaluation of postharvest treatments to extend the shelf life of mature breadfruit (Artocarpus altlis) fruit by restricting gas exchange.** Afiya John¹, Moshe Doron², and Jeffrey Brecht²*. ¹Department of Food Production, University of the West Indies, St. Augustine, Trinidad and Tobago ²Horticultural Sciences Dept., University of Florida/IFAS, Gainesville, FL. (jkbrecht@ufl.edu) [H&P-11] 2:15

**Studies with Open Field-Grown Purple Passionfruit: Comparison of Harvest Stage on Storage Quality.** Steven Sargent¹*, Adrian Berry¹, Merce Santana¹, and Ali Sarkhosh¹. ¹Horticulture Sciences Dept., University of Florida/IFAS, Gainesville, FL. (sasa@ufl.edu) [H&P-12] 2:30

**Examining Preharvest Genetic and Morphological Factors Contributing to Lettuce (Lactuca sativa L.) Shelf-life.** Kathryn Chase¹, Catherine Belisle¹, Yogesh Ahlawat¹, Fahong Yu², Steven Sargent¹, Germán Sandoya³, Kevin Begcy⁴, and Tie Liu¹*. ¹Horticultural Sciences Dept., University of Florida/IFAS, Gainesville, FL ² Bioinformatics, Interdisciplinary Center for Biotechnology Research, University of Florida, Gainesville, FL ³Everglades Research and Education Center, University of Florida/IFAS, Belle Glade, FL ⁴ Environmental Horticulture Dept., University of Florida/IFAS, Gainesville, FL. (tieliu@ufl.edu) [H&P-13] 2:45

**Break**

**Freeze-dried Muscadine Fruit: Potential for a Year-round Snack.** Ali Sarkhosh¹*, Fariborz Habibi¹, Steven Sargent¹, Jeffrey Brecht¹. ¹ Horticultural Sciences Dept., University of Florida/IFAS, Gainesville, FL. (Sarkhosh@ufl.edu) [H&P-14] 3:00

**Extending the Postharvest Storage Life of Caladium Tubers, a Signature Florida Specialty Crop for the World.** Zhanao Deng¹*, Gasselle Cordova¹, Adrian Berry², Steven Sargent², and Robert Hartman³. ¹Gulf Coast Research and Education Center, Environmental Horticulture Dept., University of Florida/IFAS, Wimauma, FL ²Horticulture Sciences Dept., University of Florida/IFAS, Gainesville, FL ³Classic Caladiums, Inc., Avon Park, FL. (zdeng@ufl.edu) [H&P-15] 3:15

**Different Storage Responses of Blueberries and Blackberries**
Handling & Processing Section

**to Modified Humidity and Controlled Released Thymol.** Gabriela Olmedo¹*, Matt Mattia¹, Wei Zhao¹, Wayne Hunter¹, Erin N. Rosskopf¹, David Obenland², Anne Plotto¹, and Jinhe Bai¹. ¹USDA-ARS Horticultural Research Laboratory, Fort Pierce, FL ²San Joaquin Valley Agricultural Sciences Center (USDA-ARS), 9611 South Riverbend Avenue, Parlier, CA. (g.maria.olmedo@gmail.com) [H&P-16]

3:45 Handling and Processing Section Business Meeting. Presiding Adrian Berry, VP and Moshe Doron, VP-elect

4:00 Adjourn

**Tuesday Morning Session**

(9:50 – 11:00) Orange D

9:50 Welcome and Introductions

D – Postharvest Pathology & Food Safety

10:00 Prediction of citrus-infused and non-infused kombucha bioactivity using metabolomics and a statistical method, Orthogonal Partial Least Squares-Discriminant Analysis. Dongjoo Kim*, Hana Lee and Yu Wang. Citrus Research and Education Center, Department of Food Science and Human Nutrition, University of Florida/IFAS, Lake Alfred, FL. (dongjookim@ufl.edu) [H&P-17]

10:15 Evaluation of Propiconazole and Natamycin for Postharvest Diplodia Stem-end Rot Control on Grapefruit in Florida. Jiuxu Zhang* and ¹Mark A. Ritenour. ¹Indian River Research and Education Center, University of Florida/IFAS, Fort Pierce, FL. (jiuxuzhang@ufl.edu) [H&P-18]

10:30 Florida’s Extension Programs Prepare Produce Growers for Produce Safety Rule Inspection. Clara Diekman¹*, Micah Gallagher², Kirby Quam³, Chelsea Peebles³, Keith Schneider³, Renee Goodrich², Michelle Danyluk¹, Taylor O’Bannon¹. ¹Citrus Research and Education Center, University of Florida/IFAS, Lake Alfred, FL ²Food Science and Human Nutrition, University of Florida/IFAS, Gainesville, FL ³Florida Department of Agriculture and Consumer Services, Bartow, FL. (cdiekman97@ufl.edu) [H&P-19]
10:45  **The Science behind Sustainable Packaging: It's All about the Functionality.**  *Jeff Brandenburg* 1, *Qfresh Lab, The JSB Group LLC, Greenfield, MA. ([jeffb@qfreshlab.com](mailto:jeffb@qfreshlab.com)) [H&P-20]

11:00  **End of Sessions.** See you next year for the 138th annual FSHS meeting!
Monday Morning Session
(9:50 – 12:00) Cypress B

9:50  Welcome and Introductions, Muhammad A. Shahid

A– Grapes
10:00  ‘C1-12-2’, An Early Ripening Muscadine Grape Selection with High Fresh Market Potential. Zhongbo Ren*, Violeta Tsolova, and Islam El-Sharkawy, Center for Viticulture & Small Fruit Research, College of Agriculture and Food Sciences, Florida A&M University, Tallahassee, FL 32317 (zhongbo.ren@famu.edu) [KRO - 1]

10:15  Application of Gene-Editing Technology for the Production of Large Berry Seedless Muscadine. Md Moniruzzaman and Islam El-Sharkawy*, Center for Viticulture & Small Fruit Research, College of Agriculture and Food Sciences, Florida A&M University, Tallahassee, FL 32317 (islam.elsharkawy@famu.edu) [KRO - 2]

10:30  The Anticancer Effects of Muscadine Grape Extracts on Racially Different Prostate Cancer Cells. Ahmed G. Darwish and Islam El-Sharkawy*, Center for Viticulture & Small Fruit Research, College of Agriculture and Food Sciences, Florida A&M University, Tallahassee, FL 32317 (islam.elsharkawy@famu.edu) [KRO - 3]

B– Tropical/Subtropical Fruits
10:45  Leaf Nutrient Analysis Levels for Tropical and Subtropical Fruit Crops in Florida. Jonathan Crane* and Yuncong Li. Tropical Research and Education Center, University of Florida IFAS, Homestead, FL 33031 (jhr@ufl.edu) [KRO -4]

11:00  Future scope and challenges of growing passionfruit in central Florida. Uzman Khalil1*, Mark Bailey2, Jonathan H. Crane3, Ali Sar-
Preliminary Investigations into Measuring Cold Hardiness of *Passiflora* Hybrids. Eric T. Stafne*, Haley Williams, and Jenny Ryals. Mississippi State University Coastal Research and Extension Center, Poplarville, MS 39470 (eric.stafne@msstate.edu) [KRO -5]

Sensory Evaluation of Fresh Passion fruit and Buyer Interest. Mark Bailey*, University of Florida IFAS/Extension, Marion County, Ocala, Florida 34470 (ironhill@ufl.edu) [KRO -7]

Innovation Management in Avocado Production Units in Morelos, Mexico. Sergio Roberto Márquez-Berber1*, Ruth Yessica Cruz Nieto2, Gustavo Almaguer-Vargas3, Alma Velia Ayala-Garay3, Diana Améria Reyna-Izaguirre5, and Abdul Khalil Gardezi5. Crop Science Department, Chapingo Autonomous University, Texcoco, Estado de México, MEXICO, 2Independent advisor, 3Head of OCI-MA. National Institute for Agricultural, Livestock and Forrest Research, Texcoco, Estado de México, MEXICO, 4Agricultural Industries Department, Chapingo Autonomous University, Texcoco, Estado de México, MEXICO, 5Hidroscience Center. Postgraduate College, Texcoco, Estado de México, MEXICO (smarquezb@chapingo.mx) [KRO -8]

Lunch

Monday Afternoon Session

1:20 Welcome and Introductions, Muhammad A. Shahid

C– Blackberry and Blueberry

Canopy Architecture Effects on Photosynthetic Light Interception in Southern Highbush Blueberry. Gerardo H. Nunez*, Md Zohurul Kadir Roni, and Patricio Munoz, Horticultural Sciences Department, University of Florida, Gainesville, FL 32611 (g.nunez@ufl.edu) [KRO -9]

Effect of Cold Storage Temperature on Various Blackberry
**Cultivars Grown In North Florida.** Muneer Rehman\(^1\)*, Angelos Deltsidis\(^2\), Muhammad A. Shahid\(^1\), Horticultural Science Department, North Florida Research and Education Center, University of Florida/IFAS, Quincy, FL 32351, Department of Horticulture, University of Georgia-Tifton Campus, Tifton, GA 31793, USA (mrehman1@ufl.edu) [KRO -10]

2:00 **Chitosan Emulsion and Silicon: A Sustainable Approach To Extend The shelf Life of Blackberry Fruit.** Muneer Rehman\(^1\)*, Angelos Deltsidis\(^2\), Muhammad A. Shahid\(^1\), Horticultural Science Department, North Florida Research and Education Center, University of Florida/IFAS, Quincy, FL 32351, Department of Horticulture, University of Georgia-Tifton Campus, Tifton, GA 31793, USA (mrehman1@ufl.edu) [KRO -11]

**D– Temperate Fruits**

2:15 **Performance of Juvenile Low-chill ‘UFSun’ Peach Scions grafted on Low-, Medium-, and High-chill Requirement Rootstocks in Central Florida.** Jonathan Clavijo-Herrera\(^1\)*, Jose X. Chaparro\(^1\), Lorenzo Rossi\(^2\), and Ali Sarkhosh\(^1\), Horticultural Sciences Department, University of Florida, Gainesville, FL 32611, Indian River Research and Education Center, University of Florida, Fort Pierce, FL 34945 (luis.clavijo@ufl.edu) [KRO -12]

2:30 **Influence of Boron, Calcium and Silicon on Quality Fruit Production of Apple Cultivars in Swat valley.** Iftikhar Ahmad\(^1\)*, Muhammad Sajid\(^1\), Roshan Ali\(^2\), Muhammad A Shahid\(^1\), Horticulture Department, University of Agriculture Peshawar, Agriculture Research Institute Mingora Swat, Khyber Pukhtunkhwa, Pakistan, Horticultural Science Department, North Florida Research and Education Center, University of Florida/IFAS, Quincy, FL 32351 (iftikhar.ahmad@ufl.edu) [KRO -13]

**E– Student Presentations**

2:45 **Optimizing Nitrogen Management for Blackberry Production in Florida.** Nurjahan Sriti\(^1\)*, Zhanao Deng\(^2\), Steven Sargent\(^1\), Jeffrey Williamson\(^1\), and Guodong Liu\(^1\), Horticultural Sciences Department, University of Florida, Gainesville, FL 32611, Gulf Coast Research and Education Center, University of Florida IFAS, Wimauma, FL 33598 (guodong@ufl.edu) [KRO -14]

3:00 **Break**

3:15 **Effect of mycorrhizal inoculation in southern highbush blueberry ‘Snowchaser’ establishment in rhizoboxes.** Valentina Go-
Enhancing Blackberry Cultivation in Florida: Assessing the Impact of the White and Black Groundcover on Plant Growth and Weed Prevention. Nurjahan Sriti*, Zhanao Deng, Steven Sargent, Jeffrey Williamson, and Guodong Liu. Horticultural Sciences Department, University of Florida, Gainesville, FL 32611, and Gulf Coast Research and Education Center, University of Florida IFAS, Wimauma, FL 33598 (guodong@ufl.edu) [KRO-16]

Superabsorbent Polymers as a Soil Amendment for Increasing Water Retention in Mango Trees. Amir Rezazadeh*, St. Lucie County Extension University of Florida /IFAS, Fort Pierce, FL 34945 (amir2558@ufl.edu) [KRO-17]

Krome Memorial Institute Business Meeting. Presiding Muham-mad Adnan Shahid, VP and Jeff Wasielewski, VP-Elect

End of sessions. See you next year for the 138th FSHS Annual Meeting.
Ornamental Garden and Landscape

David Austin
Presiding
davidaustin@ufl.edu

Monday Morning Session
(9:50 – 12:00) Cypress A

9:50 Welcome and Introductions, David Austin.

A – Student Presentations

10:00 Characterization of genes associated with purple petiole color in ornamental papaya through transcriptomics and QTL-Seq analysis. Xingbo Wu¹ Sisi Chen¹, Vincent N. Michael¹, Sarah Brewer¹, Alan H. Chambers¹, Jonathan H. Crane¹, ¹UF/IFAS Tropical Research Extension Center, Miami-Dade, FL, (xingbo.wu@ufl.edu) [OGL-1]

B – Disease Management and Diagnosis

10:15 A Review of Diseases on Ornamental Crops Submitted to Plant Diagnostic Clinic Over 10 Years in Miami-Dade County. Qingchun Liu¹, Xingbo Wu², F. Aaron Palmateer², and Romina Gazis³, ¹UF/IFAS Extension Miami-Dade, Department of Parks, Recreation, and Open Spaces, Homestead, FL (q.liu1@ufl.edu) ²UF/IFAS, Department of Environmental Horticulture, Tropical Research and Education Center, Homestead. ³UF/IFAS Department of Plant Pathology, Tropical Research and Education Center, Homestead, FL. [OGL-2]

10:30 Most Common Diseases and Pests that are Affecting the Landscape in Recent Years. Henry Mayer¹, Kara Krueger², and John Roberts³. ¹UF/IFAS Extension Miami-Dade County, Miami Fl. (hmayer@ufl.edu). ²UF/IFAS Extension, Palm Beach County, West Palm Beach, FL. ³UF/IFAS Extension, Hills-
C – Plant Production

11:00  Rice Hulls as a Container Weed Pre-Emergent Weed Mulch.  
       Shawn Steed* UF/IFAS Extension, Hillsborough County, Seffner, FL.  
       (ststeed@ufl.edu).  [OGL 05]

11:15  *Viburnum suspensum* Growth in a Nursery Using Plastic and  
       Fabric Containers.  Thomas Yeager*¹ and Ted Gardner², ¹Department  
       of Environmental Horticulture, University of Florida IFAS  
       Extension, Gainesville, FL (yeager_t@yahoo.com) ²Hibernia Nursey  
       webster, FL.  [OGL 06]

11:30  Recommendations for Production of *Calathea rufifolius*  
       Grown in a Central Florida Greenhouse.  John L. Griffis*¹, Mal-  
       colm Manners², Ajpaal Kalyanmasih¹, Tristan Dumas³, Ozlem Tun-  
       cay³. ¹Ecology and Environmental Studies Dept., Florida Gulf Coast  
       University, 10501 FGCU Blvd S., Fort Myers, FL.  (jgriffis@fgcu.edu).  
       ²Horticultural Science Dept., Florida Southern College, 111 Lake  
       Hollingsworth Dr., Lakeland, FL. ³Department of Horticulture, Ege  
       University, Izmir, Turkey [OGL 07]

11:45  Ornamental, Garden and Landscaping Business Meeting.  Pre-  
       siding, David Austin, VP and Kara Krueger, VP-elect

12:00  Lunch

Monday Afternoon Session

(1:15 – 2:45) Cypress A

Welcome and Introductions, David Austin.

D – Plant Breeding

1:15  Selecting Porterweeds for Florida Gardens: Findings from Re-  
       cent Research and Ploidy Manipulation.  Zhanao Deng*¹, S.  
       Brooks Parrish¹, Alexander Schaller¹, Sandra Wilson². ¹Department  
       of Environmental Horticulture, UF/IFAS, Gulf Coast Research and  
       Education Center, (zdeng@ufl.edu) ²Department of Environmental  
       Horticulture, UF/IFAS, Gainesville Fl.  [OGL 08]

E – Community involvement

1:30  Pollinator Sustainability Efforts Expand with a Train-the-
Ornamental, Gardening & Landscape Section

**Trainer Approach Titled: “Pollinator Ambassador Academy”**.
Jeremy Rhoden* UF/IFAS Extension, Marion County, Ocala, Fl. (jeremy.k.rhoden@ufl.edu) [OGL-9]

**Disaster Preparation for Green Industry Businesses & Employees.** Yvette Goodiel*1 and Henry Mayer2. 1 UF/IFAS Extension, Martin County, Stuart, Fl. (goodiel@ufl.edu) 2 UF/IFAS Extension, Dade County, Miami, Fl. [OGL-10]

**Understanding Resident Perspectives on Fertilizer Usage and Fertilizer Ordinances: A Case Study of Hernando County, Florida.** Yilin Zhuang*, Hayk Khachatryan1, William Lester2, Younghyeon Jeon1. 1 UF/IFAS Mid-Florida Research and Education Center, Apopka, FL. (yilinz@ufl.edu) 2 UF/IFAS Extension, Hernando County, Brooksville, FL. [OGL-11]

**Investigating Homeowners’ Preferences for Stormwater Pond Maintenance Attributes.** Samiul Haque* and Hayk Khachatryan. UF/IFAS Mid-Florida Research and Education Center, Apopka, FL. (samiul.haque@ufl.edu). [OGL-12]

**Plant This, Not That: Encouraging Florida-Friendly Over Invasive.** Tina McIntyre*, Morgan Pinkerton1, and Sandra Wilson2. 1 UF/IFAS Extension, Seminole County, Sanford, FL. 2 UF/IFAS Environmental Horticulture Department, Gainesville, FL. [OGL-13]

**End of sessions.** See you next year for the 138th FSHS annual meeting!

**Tuesday Morning Session**

10:00 **Tuesday morning tour to the Orange County Extension Office.**
Meeting at the Cypress A room at 9:45 to 10 am and car-pooling from there. 6021 S. Conway Rd. Orlando, FL 32812. See Agroecology and Natural Resources Sectional Program for more information.
Contact: David Austin, (863) 699-1400
Vegetable Section

Alex Bolques
Presiding
alejandro.bolques@famu.edu

Monday Morning Session
(9:50 – 12:00) Orange A-B

9:50 Welcome and Introductions, Alex Bolques.

A – Student Presentations

10:00 Analysis of Surface Water Treatment Efficacy Protocol using Calcium Hypochlorite and Peracetic acid against Salmonella in Florida. LaTaunya Tillman* and Michelle D. Danyluk. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. (tillmanl@ufl.edu) [VEG-1]

10:15 Marking Corn Silk Flies with Fluorescent Dyes for Improved Management. Brynn Johnson1*, Julien Beuzelin1, Sandy Allan2, Lauren Diepenbrock3, Phillip Hahn4. 1Everglades Research and Education Center, University of Florida, IFAS, Belle Glade, FL. 2Center for Medical, Agricultural and Veterinary Entomology, USDA-ARS, Gainesville, FL. 3Citrus Research and Education Center, University of Florida, IFAS, Gainesville, FL. 4Entomology and Nematology Department, University of Florida, IFAS, Gainesville, FL. (brynnjohnson@ufl.edu) [VEG-2]

10:30 Understanding the Effects Space Irradiation on Selected Crops. Christopher Roland1*, Williams Perez2, Amelie Roses1, Viviana Rivera1, Jolyne Woodmansee3, Jamie Anderson4, and Marion Litzinger5. 1Biotech Senior High School, Miami, FL 2Fairchild Tropical Botanic Garden, Miami, FL. (jwoodmansee@dadeschools.net) [VEG3]

10:45 Nitrogen Fertilization Rate and Timing Effects on Strawberry Growth, Yield, and Soil-Plant Nitrogen Dynamics vary among Cultivars Grown in Florida. Kalara Dissanayake* and Shinsuke Agehara. Gulf Coast Research and Education Center, University of Florida, IFAS, Wimauma, FL. (kdissanayake@ufl.edu) [VEG-4]
11:00 Effects of Biodegradable Plastic Mulches with Different Colors and Compositions on Microenvironments and Productivity of Annual Winter Strawberry in Florida. Hadi Ghasemi1, Shinsuke Agehara1*, Nathan Boyd1, and Lisa DeVetter2. 1Gulf Coast Research and Education Center, University of Florida, IFAS, Wimauma, FL. 2North Western Washington Research and Extension Center, Washington State University, Mount Vernon, WA. (hghasemi@ufl.edu) [VEG-5]

11:15 Exploring Interspecific and Intraspecific Competition in Brassica rapa (pak choi “extra dwarf”) and Brassica campestris var. narinosa (misome). Samantha Perdomo1*, Matthew Caceres1, Azucena Flores1, Aiden Neste1, Jolynne Woodmansee1, Jamie Anderson2, and Marion Litzinger2. 1Biotech Senior High School, Miami, FL. 2Fairchild Tropical Botanic Garden, Miami, FL. (jwoodmansee@dadeschools.net) [VEG-6]

11:30 Evaluation of a Newly Developed Chile Pepper Cultivar for Root-knot Nematode Resistance under a Pesticide-free and Organic Field Production Systems in Florida. Dominick Padilla1*, Donald W. Dickson2, and Bala Rathinasabapathi1. 1Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. 2Entomology and Nematology Department, University of Florida, IFAS, Gainesville, FL. (dpadilla@ufl.edu) [VEG-7]

11:45 Exploring Plant-available Nitrogen Dynamics under Integrated Organic Nutrient Management. Zachary Ray1*, Gabriel Maltais-Landy2, Lincoln Zotarelli1, and Xin Zhao1. 1Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. 2Department of Soil, Water, and Ecosystem Sciences, University of Florida, IFAS, Gainesville, FL. (ray.ztyler@ufl.edu) [VEG-8]

12:00 Lunch

Monday Afternoon Session
(1:20 – 5:00) Orange A-B

1:20 Welcome back and introductions.

A – Student Presentations (continued)
1:30 Changes in Acid and Essential Oil Profiles in ‘Cascade’ Hop (Humulus lupulus L.) Cones during Maturation under Sub-
tropical Climatic Conditions. Alvaro J. Bautista* and Shinsuke Agehara. Gulf Coast Research and Education Center, University of Florida, IFAS, Wimauma, FL. (sagehara@ufl.edu) [VEG-9]

1:45 Roles of Root Viability and Morphology in Establishment of Strawberry Bare-root Transplants. Lillian Pride* and Shinsuke Agehara. Gulf Coast Research and Education Center, University of Florida, IFAS, Wimauma, FL. (lpride3@ufl.edu) [VEG-10]

2:00 Potential Sources of Resistance to Powdery Mildew in the USDA Cucurbita pepo Core Collection. Prerna Sabharwal1*, Chris Smart2, Libby Indermaur2, Charles Thomas Day2, Michael Mazourek2, Gregory Inzinna2, Mary Hausbeck, Carmen3 Medina-Mora3, and Geoffrey Meru1. 1Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL; 2Cornell University, 3Michigan State University. (prernasabharwal@ufl.edu) [VEG-11]

2:15 Non-destructive Assessment of Tomato Fruit Firmness and Nutritional Composition. Sotirios Tasioulas*, Jessie Watson, and Pavlos Tsouvaltzis. Horticultural Sciences Department, University of Florida, IFAS, Southwest Florida Research and Education Center, Immokalee, FL. (tasioulas.s@ufl.edu) [VEG-12]

2:30 Nitrogen use Efficiency using Controlled Release Urea and Soluble Urea under Drip-irrigated Tomatoes in Conventional and Compact Bed Geometries. Shraddha Sharma* and Rao Mylavarapu. Soil, Water and Ecosystem Science Department, University of Florida IFAS, Gainesville, FL. (sharma.shraddha@ufl.edu) [VEG-13]

B – Nutrient Management

2:45 Vegetable Section Business Meeting. Presiding Alex Bolques, VP and Wael Elwakil, VP-elect

3:00 Maximizing Vegetable Production: Unleashing the Potential of Oxygen Fertilization in Florida. M. J. I. Shohag, Marina Gluck, and Guodong Liu*. Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. (guodong@ufl.edu) [VEG-14]

3:15 Afternoon Break

3:30 Interactive Effects of Hydrogel and Different Forms of Nitro-
Vegetable Section

**Gen Fertilizer on Growth, Photosynthesis, and Nutrient Accumulation in Bok Choy (Brassica rapa var. chinensis).** M. J. I. Shohag, and Guodong Liu*. Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. ([guodong@ufl.edu](mailto:guodong@ufl.edu)) [VEG-15]

3:45 **Improving Green Bean (Phaseolus vulgaris L.) Growth, Yield, and Nutrient Uptake with Solid Oxygen Fertilizer: A Two-Year Field Study.** M. J. I. Shohag, Marina Gluck, and Guodong Liu*. Horticultural Sciences Department, University of Florida, IFAS, Gainesville, Florida. ([guodong@ufl.edu](mailto:guodong@ufl.edu)) [VEG-16]

4:00 **Optimization of Carbon and Nitrogen Inputs for Adapting Anaerobic Soil Disinfestation to Organic Strawberry Production in Florida.** Nan Xu¹, Xin Zhao¹*, Erin Rosskopf², and Jason Hong³. ¹Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL, ²USDA-ARS, US Horticultural Research Laboratory, Fort Pierce, FL. ([xn20131020@ufl.edu](mailto:xn20131020@ufl.edu)) [VEG-17]

C – Economics of Vegetable Crops

4:15 **Florida Statute 576.045: Analysis of Economic Impacts on Florida’s Tomato Growers.** Victor Contreras¹* and Kimberly L. Morgan². ¹Food and Resource Economics Department, University of Florida IFAS, Gainesville, FL. ²SW Florida Research and Education Center, University of Florida IFAS, Immokalee, FL ([vjosue.contreras@ufl.edu](mailto:vjosue.contreras@ufl.edu)). [VEG-18]

4:30 **A Risk Analysis for Florida Fresh Snap Bean: Using Enterprise Budgets to Assess Profitability of Management Decisions.** Victor Contreras¹, Kimberly L. Morgan²*, Meghan Foos³, and Craig Frey¹. ¹Food and Resource Economics Department, University of Florida IFAS, Gainesville, FL. ²SW Florida Research and Education Center, University of Florida IFAS, Immokalee, FL. ³Hendry County, University of Florida IFAS, LaBelle, FL ([kimorgan@ufl.edu](mailto:kimorgan@ufl.edu)). [VEG-19]

4:45 **Water Productivity for Drip Irrigated Tomatoes Produced in Conventional and Compact Bed Geometries.** Shahd Alrabia* and Rao Mylavarapu, Soil, Water and Ecosystem Sciences Department, University of Florida, IFAS, Gainesville, FL ([s.alrabia@ufl.edu](mailto:s.alrabia@ufl.edu)). [VEG-20]
Tuesday Morning Session
Concurrent Session I
(9:50 – 12:00) Orange A-B

9:50  Welcome and Introductions, Alex Bolques.

B – Nutrient Management (continued)

10:00  **Effect of Biostimulant Application in Tomato Plant Yield and Fruit Quality in relation to Nitrogen Application.** Sotirios Tasioulas, Jessie Watson* and Pavlos Tsouvaltzi. Horticultural Science Department, Southwest Florida Research and Education Center, University of Florida, IFAS, Immokalee, FL. ([jwatson84@ufl.edu](mailto:jwatson84@ufl.edu)) [VEG-21]

10:15  **Artichoke Nutrient Management - Comparing Yield in CRFs vs Fertigation.** Evelyn Fletcher*, Kelly Morgan¹, Thomas Obreza², and Shinsuke Agehara². ¹St. Johns County Extension, University of Florida, IFAS, St. Augustine, FL. ²Soil, Water and Ecosystem Sciences Department, Gainesville, FL ([pfletch@ufl.edu](mailto:pfletch@ufl.edu)) [VEG-22]

10:30  **To Understand the Potential of CRF in Maintaining Carrot Quality and Production Goals while Reducing Nitrate Leaching.** Vivek Sharma*, Robert Hochmuth, and Shiva Bhambota. ¹Agricultural and Biological Engineering Department, University of Florida, IFAS, Gainesville, FL. ²North Florida Research and Education Center-Suwannee Valley, Live Oak, FL. ([vsharma1@ufl.edu](mailto:vsharma1@ufl.edu)) [VEG-23]

C – Cultivation

10:45  **Convincing Growers we have them Covered with Cover Crops.** Lisa Hickey*. Manatee County Extension, University of Florida, IFAS, Palmetto, FL. ([lisa.hickey@ufl.edu](mailto:lisa.hickey@ufl.edu)) [VEG-24]

11:00  **Seed Planting and Nutrition Workshop for Taylor County.** Lisa
Vegetable Section

Strange* and Lori Wiggins. Taylor County Extension, University of Florida, IFAS, Perry, FL. (lstrange@ufl.edu) [VEG-25]

11:15 **Developing a Winter Artichoke Production Guide in Florida.**
Shinsuke Agehara* and Weining Wang. Gulf Coast Research and Education Center, University of Florida, IFAS, Wimauma, FL (sagehara@ufl.edu) [VEG-26]

11:30 **The Potential of Purple Sweet potato for Florida Horticulture.**
Bala Rathinasabapathi*, Michael Harrington, Zachary Black, and Steve Sargent. Horticultural Sciences Department, University of Florida, Gainesville, FL. (brath@ufl.edu) [VEG-27]

11:45 **End of Session.** See you next year for the 138th FSHS annual meeting!

**Tuesday Morning Session**

**Concurrent Session II**

(9:50 – 12:00) Cypress A

9:50  **Welcome and Introductions, Wael Elwakil.**

**D – Pest Management**

10:00 **Plant-parasitic Nematodes Infecting Alternative Crops in Florida.** Johan Desaeger*, Hung Bui, Jackie Coburn, Justin Carter. Department of Entomology and Nematology, University of Florida Gulf Coast Research and Education Center, Wimauma, FL. (jad@ufl.edu) [VEG-28]

10:15 **Can Hydrolyzed Corn Protein baits be used for Sweet Corn Insect Pest Management in Florida?** Julien Beuzelin*, Larissa Pereira Lima¹, Sandra Allan², Dakshina Seal³. ¹Everglades Research and Education Center, University of Florida IFAS, Belle Glade, FL; ²Center for Medical, Agricultural and Veterinary Entomology, USDA-ARS, Gainesville, FL. ³Tropical Research and Education Center, University of Florida IFAS, Homestead, FL. (ibeuzelin@ufl.edu)
10:30 **Extension and Research efforts Focusing on *Thrips parvispinus*, a New Invasive Species Impacting Pepper Production in South Florida.** Anna Mészáros¹*, Julien M. Beuzelin², and De-Fen Mou². ¹Palm Beach County Extension, University of Florida, IFAS, West Palm Beach, FL. ²Everglades Research and Education Center, University of Florida, IFAS, Belle Glade, FL. (ameszaros@ufl.edu) [VEG-30]

**E – General Category**

10:45 **Allelic Variations in the Candidate Gene for Hull-less Seed Trait in Pumpkin.** Geoffrey Meru¹*, Sh alloy Thakur¹, Yuqing Fu¹ and Yennifer Velazquez Rodriguez¹,². ¹Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. ²Miami Dade College, Homestead Campus, Homestead, FL. (gmeru@ufl.edu) [VEG-31]

11:00 **Analyzing Consumer Preferences and Willingness to Pay for Florida-Grown Fresh Blueberries.** Younghyeon Jeon¹*, Hayk Kachatryan¹, Xuan Wei², Bachir Kassas³, and Lisa A. House³. ¹Mid-Florida Research and Education Center, University of Florida, IFAS, Apopka, FL. ²University of Maryland Extension, College of Agricultural and Natural Resources, University of Maryland, College Park, MD. ³Food and Resource Economics Department, University of Florida, IFAS, Gainesville, FL. (yjeon1@ufl.edu) [VEG-32]

11:15 **Challenges and Possible Solutions for Vegetable Production in Miami-Dade County.** Qingren Wang*. Miami-Dade County Extension, University of Florida, IFAS, (qrwang@ufl.edu) [VEG-33]

11:30 **How New Mexico’s Specialty Crops Growers Perceive and adapt to Climate.** Sawssan Boufous* and Brian Hurd. Department of Extension Economics, New Mexico State University, Las Cruces, NM. (sawssanb@nmsu.edu) [VEG-34]

11:45 **Prediction of tomato yield by image processing and crop canopy calculations.** Hadi Ghaderian*, Mehran Homayounfar, Gregory S. Hendricks, Sanjay Shukla, Vijay Santikari, Justin Schabow.
Vegetable Section

Southwest Research and Education Center, University of Florida, IFAS. Immokalee, FL. (hghaderian@ufl.edu) [VEG-35]

12:00 End of Session. See you next year for the 138th FSHS annual meeting!
Best Management Practices
Monday Afternoon Session

(1:45 – 5:00) Cypress C

Renaissance of Nutrient Management Research in Florida
Organizer: Sanjay Shukla (sshukla@ufl.edu) and Thomas Obreza (obreza@ufl.edu)

Agenda

1:45 Welcome and Introductions. Sanjay Shukla. UF/IFAS, Southwest Research and Education Center, Immokalee, FL

1:50 How did we get here? Thomas Obreza. UF/IFAS, Soil and Water Ecosystem Sciences Department, Gainesville, FL

2:00 A two-year on-farm study to evaluate the effectiveness of phosphorus fertilization for tomato in Central Florida. João Cardoso de Souza Junior1, Shinsuke Agehara1, Aleyda Acosta-Rangel1, Sanjay Shukla2, Vijay Santikari2, Mehran Homayounfar2, Justin Schabow2, Nikolay Bliznyuk3, Thomas Obreza4, Craig Frey5, Lisa Hickey6, Anna Mézáros7, and Timothy Ayankojo8. 1Gulf Coast Research and Education Center, University of Florida IFAS, Wimauma, FL. 2Southwest Florida Research and Education Center, University of Florida IFAS, Immokalee, FL. 3Agricultural and Biological Engineering Department, University of Florida IFAS, Gainesville, FL. 4Soil, Water, and Ecosystem Sciences Department, University of Florida IFAS, Gainesville, FL. 5Hendry County Extension, University of Florida IFAS, LaBelle, FL. 6Manatee County Extension, University of Florida IFAS, Palmetto, FL. 7Palm Beach County Extension, University of Florida IFAS, West Palm Beach, FL. 8North Mississippi Research and Extension Center, Mississippi State University, Vero- na, MS (sagehara@ufl.edu) [BMP 01]

2:15 On-farm evaluation of phosphorus fertilization for potato in Central Florida. Aleyda Acosta-Rangel1, Shinsuke Agehara1, João Cardoso de Souza Junior1, Sanjay Shukla2, Vijay Santikari2, Mehran Homayounfar2, Justin Schabow2, Nikolay Bliznyuk3, Thomas Obreza4, Craig Frey5, Lisa Hickey6, Anna Mézáros7, and Timothy Ayankojo8. 1Gulf Coast Research and Education Center, University of Florida IFAS, Wimauma, FL. 2Southwest Florida Research and Education Center, University of Florida IFAS, Immokalee, FL. 3Agri-
cultural and Biological Engineering Department, University of Florida IFAS, Gainesville, FL. 4 Soil, Water, and Ecosystem Sciences Department, University of Florida IFAS, Gainesville, FL. 5 Hendry County Extension, University of Florida IFAS, LaBelle, FL. 6 Manatee County Extension, University of Florida IFAS, Palmetto, FL. 7 Palm Beach County Extension, University of Florida IFAS, West Palm Beach, FL. 8 North Mississippi Research and Extension Center, Mississippi State University, Verona, MS ([sagehara@ufl.edu] [BMP 02])

2:30 On-farm evaluation of phosphorus fertilization for green beans in Central Florida. Aleyda Acosta-Rangel1*, Shinsuke Agehara2, João Cardoso de Souza Junior1, Sanjay Shukla2, Vijay Santikari2, Mehran Homayounfar2, Justin Schabow1, Nikolay Bliznyuk3, Thomas Obreza4, Craig Frey5, Lisa Hickey6, Anna Meszaros7, and Timothy Ayankojo8. 1 Gulf Coast Research and Education Center, University of Florida IFAS, Wimauma, FL. 2 Southwest Florida Research and Education Center, University of Florida IFAS, Immokalee, FL. 3 Agricultural and Biological Engineering Department, University of Florida IFAS, Gainesville, FL. 4 Soil, Water, and Ecosystem Sciences Department, University of Florida IFAS, Gainesville, FL. 5 Hendry County Extension, University of Florida IFAS, LaBelle, FL. 6 Manatee County Extension, University of Florida IFAS, Palmetto, FL. 7 Palm Beach County Extension, University of Florida IFAS, West Palm Beach, FL. 8 North Mississippi Research and Extension Center, Mississippi State University, Verona, MS. [BMP 03]

2:45 Evaluating Phosphorus Recommendations for Fresh-market Tomato Production in Florida. Vijay Santikari2*, Sanjay Shukla1, Mehran Homayounfar1, Justin Schabow1, Shinsuke Agehara2, Nikolay Bliznyuk3, Thomas Obreza4, João Cardoso de Souza Junior2, Aleyda Acosta-Rangel2, Craig Frey5, Anna Meszaros6, and Lisa Hickey7. 1 Southwest Florida Research and Education Center, University of Florida, 2685 State Road 29 North, Immokalee, FL 34142, USA. 2 Gulf Coast Research & Education Center, University of Florida, 14625 CR 672, Wimauma, FL, 33598. 3 Agricultural and Biological Engineering Department, University of Florida, 120 Frazier Rogers Hall, Gainesville, FL 32611. 4 Department of Soil, Water, and Ecosystem Sciences, University of Florida, 2181 McCarty Hall, Gainesville, FL 32611. 5 UF/IFAS Extension Hendry County, 1085 Pratt Boulevard, LaBelle, FL 33935. 6 Everglades Research and Education Center, Southeast Extension District Office, 3200 East Palm Beach Road, Belle Glade, FL, 33430. 7 UF/IFAS Extension Manatee County, 1303 17th St West, Palmetto, FL 34221. * Corresponding
3:00 Large-scale Re-assessment of Phosphorus Fertilizer Recommendations for Potatoes on Commercial Farms in South Florida. Justin E. Schabow¹, Vijay P. Santikari¹, Ibukun T. Ayankojo¹, Mehran Homayounfar¹, João Cardoso de Souza Jr², Aleyda Maritza Acosta Rangel¹, Sanjay Shukla¹, Shinsuke Agehara², Nikolay Bliznyuk², Thomas Obreza², Craig Frey³, Anna Mészáros⁶, and Lisa Hickey⁷. ¹Agricultural and Biological Engineering Department, University of Florida, Southwest Florida Research and Education Center, 2685 State Road 29 North, Immokalee, FL 34142, USA. ²University of Florida, IFAS, Gulf Coast Research & Education Center, 14625 CR 672, Wimauma, FL, 33598. ³Department of Agricultural and Biological Engineering, University of Florida, Gainesville, FL. ⁴University of Florida, IFAS, Department of Soil, Water, and Ecosystem Sciences, 2181 McCarty Hall, Gainesville, FL, 32611. ⁵University of Florida, Hendry County Extension, IFAS, 1085 Pratt Boulevard, LaBelle, FL 33935. ⁶University of Florida, Palm Beach County Extension, IFAS, 559 N Military Trail West Palm Beach, FL 33415. ⁷University of Florida, Manatee County Extension, IFAS, 1303 17th St West. Palmetto, FL 34221. * Corresponding author (sshukla@ufl.edu). [BMP 04]

3:15 Evaluating phosphorus recommendations for snap bean production in South Florida. Mehran Homayounfar¹*, Sanjay Shukla¹, Vijay Santikari¹, Justin Schabow¹, Ibukun T. Ayankojo², Shinsuke Agehara³, Joao Cardoso de Souza Junior³, Aleyda Acosta Rangel¹, Nikolay Bliznyuk², Thomas Obreza², Cray Frey³, Anna Mészáros⁶, and Lisa Hickey⁷. ¹Southwest Florida Research & Education Center, University of Florida, IFAS, Immokalee, FL. ²North MS Research and Extension Center, Department of Plant and Soil Sciences, Mississippi State University, Verona, MS. ³Gulf Coast Research and Education Center, University of Florida, IFAS, Immokalee, FL. ⁴Department of Agricultural and Biological Engineering, University of Florida, Gainesville, FL. ⁵Department of Soil, Water, and Ecosystem Sciences, University of Florida, 2181 McCarty Hall, Gainesville, FL. ⁶University of Florida, IFAS, Extension, Hendry County, FL. ⁷University of Florida, IFAS, Extension, Palm Beach County, FL. * Corresponding author (sshukla@ufl.edu). [BMP 05]

3:30 Phosphorus fertilizer rate trials for potato yield response in Northeast Florid. Lincoln Zotarelli¹*, Christian T. Christensen², Ester Ricken¹, Lakesh Sharma³, Kelly T. Morgan³. ¹Horticultural
3:45  **An Update on Optimizing Phosphorus Application Rates for Snap Bean Production in North Florida.** M. J. I. Shohag¹*, Guodong Liu¹ (David), Horticultural Sciences Department, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL 32611. (guodong@ufl.edu) [BMP 08]

4:00  **Snap Beans Response to Different Phosphorus Rates and Irrigation Scheduling.** Niguss Solomon Hailegnaw¹*, Mulatu Liyew Berihun, Getachew Kefelegn, Girma Worku Awoke, Saddam Hussain, Fitsum Teshome Tilahun, Syed Shaham Madni, Yuncong Li, Haimanote K. Bayabil, Department of Agricultural and Biological Engineering, Tropical Research and Education Center, IFAS, University of Florida, Homestead, FL, USA. hbayabil@ufl.edu [BMP 09]

4:15  **Florida irrigated corn and nitrogen rate recommendations: insights and future perspectives.** Lakesh Sharma¹*, Diego Arruda Huggins de Sá Leitão¹. ¹Soil, Water, and Ecosystem Sciences Department, University of Florida, Gainesville FL, 32608. lakesh.sharma@ufl.edu [BMP 10]

4:30  **Site-specific Nitrogen and Phosphorus BMPs of HLB-affected sweet orange.** Alishaik Atta¹, Kelly T. Morgan², Mark A. Ritenour³, Muhammad A. Shahid⁴, Alan Wright³, Lorenzo Rossi³, Kimberly Morgan⁵ and Davie M. Kadyampakeni¹*.¹ UF/IFAS Citrus Research and Education Center, 700 Experiment Station Rd., Lake Alfred, FL 33850, USA. ² UF/IFAS Soil and Water Sciences Department, University of Florida, 2157 McCarty Hall, Gainesville, FL 32611, USA. ³ UF/IFAS Indian River Research and Education Center, 2199 S. Rock Road, Fort Pierce, FL 34945, USA. ⁴ UF/IFAS North Florida Research and Education Center, University of Florida/IFAS, Quincy, FL, 32351, USA. ⁵ UF/IFAS Southwest Florida Research and Education Center, 2685 SR 29 N, Immokalee, FL 34142, USA. dkadyampakeni@ufl.edu [BMP 11]

4:45  **How do we take research to recommendation?** Thomas Obreza. UF/IFAS, Soil and Water Ecosystem Sciences Department, Gainesville, FL (obreza@ufl.edu)

5:00  Adjourn
In-Service Training—
Agriculture I

Tuesday Afternoon Session

DoubleTree by Hilton Hotel at SeaWorld, Orlando Florida. Orange C
1:00 P.M.—4:30

“Controlled Environment Agriculture”

Organizers: Tripti Vashisth, Germán Sandoya, and Hannah Wooten
(tvashisth@ufl.edu)

Agenda

1:00 Welcome and Introduction, pre-testing, background. Dr. Tripti Vashisth. UF/IFAS, Citrus Research and Education Center, Lake Alfred, FL

1:20 What is CEA? Where we are as CEA UF/IFAS? Available resources for educating growers and stakeholders. Drs. Germán Sandoya and Gerardo Nuñez UF/IFAS Everglades Research and Education Center, Belle Glade, FL and UF/IFAS Horticultural Sciences Department, Gainesville, FL

1:50 Small scale systems/ Urban Agriculture. Hannah Wooten, UF/IFAS Extension Orange County, FL

2:10 Start up -do and don’ts and points of concerns. Robert Hochmuth, UF/IFAS Suwanee Valley - North Florida Research and Education Center, Live Oak, FL

2:30 Break

2:40 CEA systems and engineering innovations. Dr. Ying Zhang, UF/IFAS Agricultural and Biological Engineering, Gainesville, FL

3:00 Production of leafy greens in CEA. Dr. Germán Sandoya, UF/IFAS Everglades Research and Education Center, Belle Glade, FL

3:20 Cultivating Controlled Environment Agriculture at UF/IFAS:
Challenges and Opportunities. Dr. Kirsten Pelz-Stelinski UF/IFAS Mid Florida Research and Education Center, Apopka, FL

3:40 Future directions and agents' perspective. Hannah Wooten, UF/IFAS Extension Orange County, FL

4:10 Conclusion: questions, discussions, post-testing. Dr. Tripti Vashisth UF/IFAS, Citrus Research and Education Center, Lake Alfred, FL.

4:30 Adjourn
In-Service Training—Agriculture II
Tuesday Afternoon Session

Double Tree by Hilton, Orlando, Florida

1:20–4:30 Cypress B

“Managing Labor Risk to Improve Profitability: The UF/IFAS Farm Labor Supervisor Program Certification”
Organizers: Kimberly Morgan and French Price (kimorgan@ufl.edu; e.price@ufl.edu)

Agenda

1:20 Welcome and Introduction, Pre-testing. Kimberly Morgan and French Price, UF/IFAS, SW Florida Research and Education Center, Immokalee, FL

1:40 Why Farm Labor Economics is Doing the Heavy Lifting. Kimberly Morgan, UF/IFAS, SW Florida Research and Education Center, Immokalee, FL

2:10 UF/IFAS Farm Labor Supervisor Program: Purpose, Partners, and 20+ Years of Progress. Kimberly Morgan, UF/IFAS, SW Florida Research and Education Center, Immokalee, FL

2:35 Break

2:50 Farm Labor Situation and Outlook: Regulatory Compliance and Management Communications. French Price, UF/IFAS, SW Florida Research and Education Center, Immokalee, FL

3:20 Building Best Practices to Mitigate Farm Worker Safety Risks: Heat Illness, Pesticide Safety, Safe Transportation. Kimberly Morgan, UF/IFAS, SW Florida Research and Education Center, Immokalee, FL

4:00 UF/IFAS Farm Labor Supervisor Program: 2025 and Beyond,
Post-testing. Kimberly Morgan and French Price, UF/IFAS, SW Florida Research and Education Center, Immokalee, FL

4:30 Adjourn
Mango Summit

Tuesday Afternoon Session

DoubleTree by Hilton Hotel Orlando at SeaWorld, Orlando, FL

1:30 — 4:05 PM  Orange D and Zoom

Organizer: Nathalia Tello, National Mango Board, Moderator: Muhammad A. Shahid, UF/IFAS North Florida Research and Education Center
(ntello@mango.org and mshahid@ufl.edu)

Agenda

1:30  Welcome and Introductions. Nathalia Tello¹, National Mango Board, Orlando, FL

1:40  Efficacy of Thyme Guard®, Timorex ACT®, and Kocide®-2000 -O for controlling fruit diseases in ‘Valencia Pride’ mango and ‘Tower 2’ avocado under south Florida grove conditions. Jonathan Crane¹, Romina Gazis¹, Lederson Gañán Betancur¹, and Bruce Schaffer¹, ¹Tropical Research and Education Center, Homestead, FL. (jhcr@ufl.edu) [K-18]

2:00  The Use of Microtensiometers for Mango Irrigation Management: A Farmer’s Perspective. Rod Chamberlain¹, ¹Wong Farms, Mecca, CA. (fshfrm@aol.com) [K-19]

2:20  Optimization of Fresh-Cut Mango Packaging. Jeffrey Brandenburg¹, ¹QFresh Lab, Marina, CA. (jbrandenburg@jsbgroup.com) [K-20]

2:40  Perspectives and Challenges of Mexican Mango. Sergio Roberto Márquez-Berber³, Noris Ledesma², Gustavo Almaguer-Vargas¹, Alma Velia Ayala-Garay³, and Diana América Reyna-Izaguirre³, ³Crop Science Department, Chapingo Autonomous University, Texcoco, MX. ²UF/IFAS. Tropical Research and Education Center, Homestead, FL. ³National Institute for Agricultural, Livestock and Forrest Research, Texcoco, MX. ⁴Agricultural Industries Department, Chapingo Autonomous University, Texcoco, MX.
A Guide to Pruning and Training Young Mango Trees. Jeff Wasielewski¹, Jonathan H. Crane², and Richard J. Campbell³,¹ Miami-Dade County Extension UF/IFAS, Homestead, FL, ² UF/IFAS, Tropical Research and Education Center, University of Florida, Homestead, FL, ³ Ciruli Brothers LLC, Tubac, AZ. [smarquezb@chapingo.mx] [K-21]

3:00

The Mango Loa Project: A Comparison of Two High Density Orchard Management Systems for Growing Mangoes. Umi Martin¹, ¹Umi’s Farm, Waimea, HI. [umisfarm@gmail.com] [K-22]

3:20

Twenty Years of Field Experience: A Review of Specialty Mango Cultivars for Florida. Richard J. Campbell¹, ¹Ciruli Brothers LLC, Tubac, AZ. [rcampbell@cirulibrothers.com] [K-24]

3:40

Adjourn
Double Tree by Hilton Orlando at Sea World Hotel Map
Meet your 2025 FSHS Sectional Vice-Presidents!

Agroecology & Natural Resources: **Jay Capasso**, UF/IFAS Extension. RSA Northeast, jcapasso@ufl.edu

Citrus: **Muhammad A. Shahid**, UF/IFAS North Florida Research and Education Center, mshahid@ufl.edu

Handling & Processing: **Moshen Doron**, UF/IFAS Horticultural Sciences, moshik@ufl.edu

Krome Memorial Institute: **Jeff Wasielewski**, UF/IFAS Extension. Miami-Dade County, sflhort@ufl.edu

Ornamental, Garden, & Landscape: **Kara Krueger**, UF/IFAS Extension. Palm Beach County, karackrueger@ufl.edu

Vegetables: **Wael Elwakil**, UF/IFAS Extension Hillsborough County, wael.elwakil@ufl.edu
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