

# INSIDE TREC

## Winter 2025

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*Inside TREC* is a quarterly newsletter distributed by the Communications & Marketing Development Unit of the UF/IFAS TREC via e-mail and can be found on the UF/IFAS TREC [website](#).

You may forward any questions or comments about this periodical to Monique Scoggin, [mis6664@ufl.edu](mailto:mis6664@ufl.edu).

## From the Desk of the Director

Well, the “South Florida Winter” season is almost over and while we did have a few cold fronts bringing significant drops in temperature, overall it was milder compared to some recent winters. Although it might be a bit early to say definitively, it appears that we had a Goldilocks situation of “not too cold and not too hot” for many of our tropical fruit trees. In particular, our mango trees seem to be relishing this year’s weather conditions and they are all in full bloom. While successful pollination/fertilization is not guaranteed based solely on bloom, we are keeping our fingers crossed that, unlike last year, all of the close to 200 cultivars (varieties) we maintain at the Center will be laden with mangos. The mango season in south Florida typically begins in May and runs through September with the peak season from June to August. During these months, you'll find a variety of mangos, including popular ones like Tommy Atkins, Kent, and Haden to name a few.

Data have shown that the consumption of mangos is increasing, driven by demand from immigration from nations where these fruits are common and by the broadening palates of the American public. In addition, a recent study published in *Nutrient* (<https://www.mdpi.com/2072-6643/17/3/490>) could further boost demand for the fruit as the findings seem to suggest that apart from being nutrient rich (mangos are rich

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in vitamins and minerals, providing 100% of the daily value of vitamin C and 35% of vitamin A in one cup), regular consumption of the fruit **may** help lower insulin concentration levels and improve insulin sensitivity in adults who are overweight or obese with chronic low-grade inflammation.

With all the hype surrounding mangos, it is no wonder that the bloom on the trees is making Dr. Jugpreet Singh and Dr. Jonathan Crane, our tropical fruit breeder and geneticist and tropical fruit horticulturist, respectively, extremely happy as they and their colleagues advance their research on this crop. One aspect of their research focuses on identifying superior mango varieties and improving mango production and consumption in the USA through the use of modern breeding tools (genomic and phenomic tools). [You can find preliminary information on this project here.](#) At the completion of this study, the researchers will provide the tropical fruit industry with critical information to efficiently meet consumer needs and to enhance the competitiveness of US-produced mango in the near term with confidence of consumer acceptance. To this end, recently, an online workshop was conducted offering information and recommendations on the growth and development phases, flavor and aroma diversity, consumer preferences, and postharvest handling of over 25 mango cultivars.

So, if you are in the area during the mango season, stop by and sample one of our tree ripe mangos.

*Edward “Gilly” Evans*





# Research Report

In an environment where one invasive pest is identified per month, Florida's entomologists stay busy. In this installment of the UF/IFAS TREC's Research Report, you'll learn about the newest invasive pest in south Florida, one of the most persistent invasive pests, and some others that Dr. Dakshina Seal and his lab are investigating. From studying the biology and behaviors of these pests to publishing articles and communicating with local growers, Dr. Seal and his lab look for ways to manage the harmful insects on vegetable crops and in Miami-Dade County's agro-ecosystem.

## Newest Invasive Pest: Two-Spotted Cotton Leaf Hopper

The two-spotted cotton leaf hopper (*Amrasca biguttula*) has already been detected in the Caribbean attacking vegetable crops like okra, beans, and squash. The pest can also be found on cotton and peanut crops throughout the islands. Here in south Florida, the two-spotted cotton leaf hopper [can already be found](#) on okra crops. The pest could be particularly damaging if it gets to the commercial bean, squash, or tomato fields. Presently, Monalisa Seaton, a research assistant in Dr. Seal's lab, is working on the biology of the two-spotted cotton leaf hopper, its host distribution, and management of the pest. Stay tuned to this Research Report for a future update on south Florida's latest invasive pest.

## Persistent Invasive Pest: Pepper Weevil

For the last 15 years, a part of Dr. Seal's research has included developing an Integrated Pest Management (IPM) for the pepper weevil (*Anthonomus eugenii* Cano). The pepper weevil first arrived in Florida in 1935 where it predominantly found refuge in peppers. Dr. Seal's research into the pepper weevil includes its biology, distribution, and potential management strategies including: cultural practices, intercropping, sex pheromones, bio-rational insecticides, biological agents (like wasps), and chemical agents (like Pelinazolin, which has been effective in recent trials). So long as the pepper weevil persists, so will Dr. Seal's research.

## Some other invasives (oh my!)

Some other invasive pests include the diamondback moth, leaf miners, white flies, and a growing list of Thrips: melon thrips, Asian bean thrips, Thrips parvispinus, and common blossom thrips. All of these insects are pests of vegetable crops and all transmit viruses to the plant. To learn more about any of these pests or to view Dr. Seal's EDIS publications, [click here](#).



# TREC in

## Graduate Student

Sisi Chen is a Ph.D. student in Dr. Xingbo Wu's Ornamental Plant Breeding and Genetics lab. Her research focuses on evaluating the genetic and phenotypic variation of tropical hibiscus and developing genomic tools for breeding tropical hibiscus.



Sisi is originally from Quanzhou, China, a town on the southeast side of the country with weather very similar to that found in south Florida. For her Masters, Sisi used bioinformatics to study obligate mutualism—going back in time to note the evolutionary process of the leafflower (*Glochidion lanceolarium*) and its unique insect pollinator, leafflower moth (*Epicephala lanceolarium*). However, for her PhD, Sisi wanted her research to have real life impact. Combining her skills in bioinformatics with her passion for plant breeding, she shifted her focus to the genetic improvement of ornamental plants.

Now, Sisi is studying the genetic diversity of the tropical hibiscus collection and developing the first tropical hibiscus genome using bioinformatics techniques. These pre-breeding efforts will provide critical genomic resources, enabling future plant breeders and geneticists to develop new hibiscus varieties with greater efficiency and precision.

Moving forward, Sisi would like to continue her work in molecular breeding by exploring the genetics and genomics of various crops. To learn more about Sisi's work on tropical hibiscus, [watch this video](#). You can also keep up with her via her [LinkedIn profile](#).

#DYK

FIND THIS VIDEO  
AND MORE ON



## Advisory Board



Mick Gnaegy has owned and operated Mix'd Greens, Inc. since 1982. Over the course of his agricultural career, Mr. Gnaegy has propagated plants, designed and installed landscapes, and offered irrigation and aquatic services, ISA Arborist tree Services, ground maintenance services, and environmental restorations. Currently Mix'd Greens grows 10 acres of container-grown trees, 70 acres of field-grown palms and trees, and 20 acres of mango and avocado groves; the business specializes in native trees and shrubs.

Mr. Gnaegy is a member of FANN, the Florida Native Plant Society, UF/IFAS Commercial Ornamentals Advisory Committee, Dade County Florida Farm Bureau, the Miami-Dade chapter of FNGLA, and a Trustee of the South Dade Chamber of Commerce. He served as President of the Miami-Dade chapter of FNGLA from 2019 to 2023.



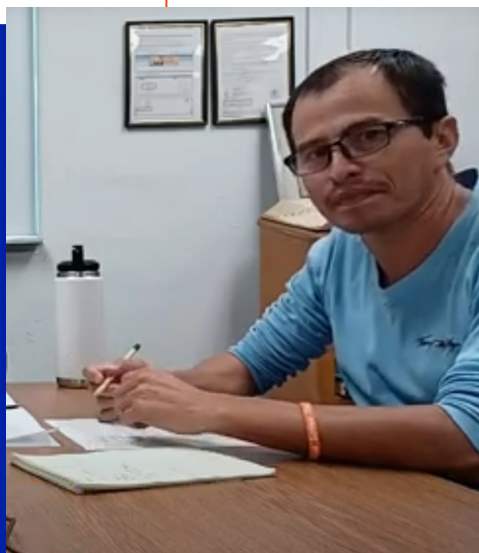
# FOCUS

In this edition of TREC's Post Doc Exposé, we feature Dr. Edwin Gutierrez, a post doctoral researcher in Dr. Bruce Schaffer's Eco-physiology of Subtropical and Tropical Horticultural Crops Lab.

*Post doc  
Exposé*

**Q: Where did you complete your Bachelor's, Master's, or PhD? How did you arrive at TREC?**

A: I am a Colombian Agronomist Engineer, having graduated from De los Llanos University. Thanks to a Colombian Government sponsorship program in 2011, I had the opportunity to pursue both my advanced degrees in Brazil: an M.Sc. from the Federal University of Rio Grande do Sul and a Ph.D. from São Paulo State University. While working on avocados during my internship in 2016, I contacted **Dr. Bruce Schaffer**, who was involved in plant ecophysiology at TREC. Since then, I have maintained a close connection with TREC. In 2022, while leading a cacao research program in Colombia, I received an offer to join the team as a Postdoctoral Researcher for an Avocado Project. This position will be ending soon, and I will miss TREC again.



**Q: What is the hardest aspect of your position?**

A: As a Postdoctoral Researcher on an Avocado Project, I find that nothing is difficult when you are doing what you love. What is challenging, however, is the lack of immediate or fast solutions for growers here in Florida to combat or mitigate the severity of Laurel Wilt. Despite gaining some interesting insights into the differential spread of the disease, it continues to devastate avocado trees. Additionally, although there are institutional efforts, there is still much to be done to improve working conditions for those of us placed at the RECs across Florida. Our status—neither as Faculty, employees, or part of a similar team—puts us at a disadvantage in providing better service and performance.

**Q: What is your next step? How has TREC prepared you for it?**

A: I recently accepted an offer to join the Extension Agent team at UF. I will be moving soon to West Florida as a Multicounty Extension Agent. Citrus, avocado, cacao, and banana growers are facing significant challenges due to phytosanitary issues worldwide, particularly with HLB in citrus, which is devastating. This role presents an incredible opportunity to expand my knowledge and experience while strengthening the connection between academia, field growers, and the industry.

**Q: How do you spend your free time?**

A: I have an amazing family who means everything to me. While I don't have much free time right now, they fill any gaps in my life. Raising kids, especially when they are young, brings the happiest moments in life. It's not easy, but it fulfills every human expectation.

# Congratulations

## Student Awards

On February 27, the Dade AGRI Council in collaboration with UF/IFAS Extension Miami-Dade County, and Dade County Farm Bureau hosted the 60th Annual Farm / Agricultural Tour! At the Luncheon, four UF/IFAS TREC students were awarded scholarships.

Name of Award	Recipient	Advisor	Research Area/Topic
Warren Wood, Sr Memorial Fellowship	You's Kertye Myrttil	Xiaoying Li	Development of squash varieties resistant to potyviruses for south Florida region
William H. Krome Memorial Fellowship	Marielle de Moraes Berto	Daniel Carrillo	The association between ambrosia beetles and phoretic mites and their potential use to control laurel
L. Russel Norton Memorial Fellowship	Jesse Potts	Xingbo Wu	Improvement of disease resistance in <i>Vanilla planifolia</i> using CRISPR technology: Unraveling the function of eIF4E and EXA1 in virus susceptibility
Seymour Goldweber Scholarship	Maria Alejandra Canon	Alexandra Revynthi	Mitigation of acarine pests of hemp ( <i>Cannabis sativa</i> )





# Faculty & Staff Awards

Dr. Xingbo Wu was awarded the Archer Early Career Seed Grant for nearly \$50,000! Dr. Wu's project is to develop better vanilla cultivars through flavor profiling and disease resistance evaluation.

Dr. Wu was also awarded \$6,500 from FNGLA'S Research and Education grants. With Dr. Alexandra Revynthi, Dr. Wu will breed industry-suitable tropical Hibiscus cultivars in Florida.

To learn more about some of the hibiscus research taking place in Dr. Wu's lab, make sure to watch this edition's Student Spotlight on PhD student, Sisi Chen!



This year, the following staff were honored for their years of continuous service.



Jose Castillo  
Bill Smith  
Pamela Moon

15

Maria Bernal

## Water Institute Early Career Faculty Fellow Seminar



Dr. Haimanote Bayabil

February 27, 3pm | Zoom

UF UNIVERSITY of  
FLORIDA  
Agricultural & Biological Engineering

UF Water Institute  
UNIVERSITY of FLORIDA

ICYMI—Dr. Haimanote Bayabil presented “Advancing Soil and Water Management: Monitoring, Modeling, and Adaptation Strategies in a Changing Climate” at the UF Water Institute last month. [Click here to watch his presentation.](#)

Dr. Bayabil was recognized as the 2024-2027 Water Institute Early Career Faculty Fellow based on the strength of their interdisciplinary research, education or extension program (with emphasis on the last three years), conducting a research program aligned with the mission of the WI and their on-going commitment to contribute to WI initiatives.

# In Memoriam: Dr. Randy Ploetz

It is with deep sadness that we share the passing of our colleague, Professor Emeritus Randy Ploetz. Many of you may not have known Professor Ploetz as he served at the UF/IFAS TREC from 1986 to 2018.

Dr. Ploetz was a world authority on diseases that affect fruit crops. His primary focus was on diseases of tropical fruit crops that are produced in south Florida, many of which are major crops worldwide. He published extensively and the influence of his publications is reflected by the numbers of times that they are cited by peers. To recognize his original contributions to the field of plant pathology and the global impact of his research, he was named a Fellow in the American Phytopathological Society (APS) in 2016.

We extend our heartfelt condolences to Professor Ploetz's family and friends during this difficult time. You can learn more about Professor Ploetz, including details regarding memorial services, using this link : <https://www.legacy.com/us/obituaries/name/randy-ploetz-obituary?id=57677671>.



*Randy Christopher Ploetz*

1952—2025

# Last Chance to submit



UF/IFAS Tropical Research & Education Center

Guest editors

Dr. Vander Lacerda  
UF/IFAS TREC

Dr. Xiaoying Li  
UF/IFAS TREC

Dr. Barbara Costa  
FIU

**Call for manuscripts**  
**Sustainable Practices in Tropical Horticulture**

Technology in Horticulture (e-ISSN 2833-4337) is an open access, online-only, rigorously peer-reviewed academic journal devoted to publishing original research articles, reviews, opinions, methods, editorials, letters, and perspectives.

This special issue addresses the pressing need for sustainable methods in tropical horticulture. The following research topics are welcome:

- Organic horticulture practices,
- Physiological responses,
- Water conservation,
- Soil health and fertility management,
- Fruit and vegetable quality,
- Integrated pest management,
- Abiotic stress mitigation,
- Organic fertilizer,
- Crop diversification, and

**Submission Deadline**  
**31 March 2025**  
**NO PUBLICATION COST**

For more information, contact:  
rochalacerda@ufl.edu, xiaoying.li@ufl.edu, brcosta@fiu.edu

To submit: <https://www.maxapress.com/tihort/specials/127>

Members of Dr. Zachary Brym's [Agronomy Lab](#) participated in the Dinner for Farmers Food Celebration hosted in collaboration with [Vizcaya Museum and Gardens](#) and Florida Organic Growers and Consumers in connection with the Florida Local Food Project.

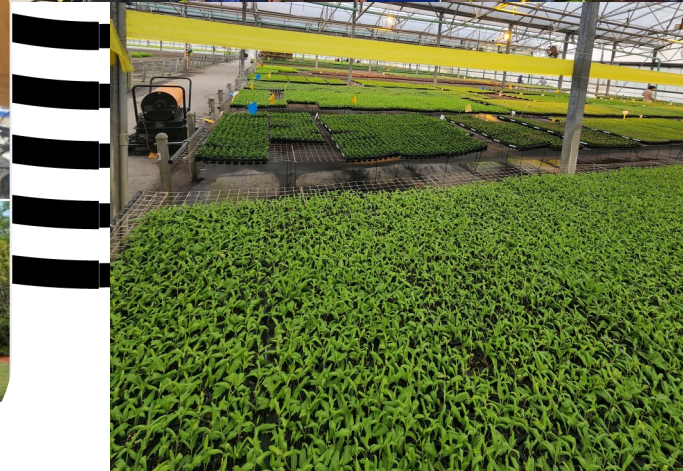
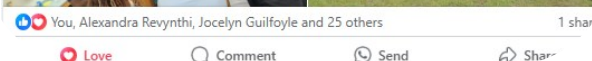
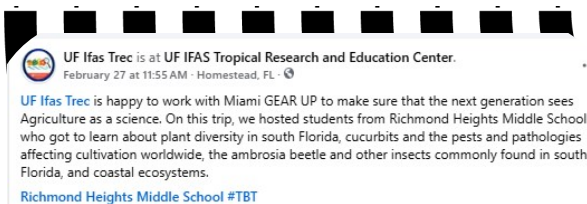




# Tours Galore!

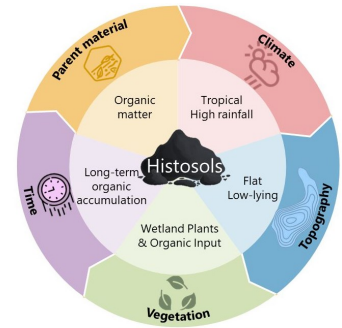


Middle school students, undergraduate students, and both international (the Bahamas) and domestic Agricultural regulators all visited TREC to learn more the agricultural industries of south Florida.



# EDIS Publications

- Bai, X., Li, Y., Manirakiza, N., Coffin, C., & Bhadha, J. H. (2025). "Histosols of south Florida: Past, Present, and Future: SL 527/SS741, 2/2025." *EDIS*, (1). DOI: <https://doi.org/10.32473/edis-ss741-2025>
- Bijak, A. L., Smyth, A. R., Barry S. C., & Reynolds, L. K. (2025). "What is blue carbon, SL528." *EDIS* (2). DOI: <https://doi.org/10.32473/edis-ss743-2025>
- Her, Y. G., Bliznyuk, N., Ampatzidis, Y., Yu, Z., Bayabil, H. K. (2024). "Introduction to artificial intelligence in agriculture: AE605, 9 2024." *EDIS* (6). DOI: <https://doi.org/10.32473/edis-ae605-2024>
- Martin, C. G., Haynes, J., McLaughlin, J., Vasquez, L., Hunsberger, A., Brym, Z. (2025). "Low-maintenance landscape plants for south Florida: ENH854/EP107, rev.2/2025." *EDIS* (2). DOI: <https://edis.ifas.ufl.edu/publication/ep107>
- Sharma, V., Vaddevolu, U. B. P., Bhambota, S., Ampatzidis, Y., Bayabil, H., & Singh, A. (2024). "Variable rate technology and its application in precision agriculture: AE607, 1 2025." *EDIS* (1). DOI: <https://doi.org/10.32473/edis-AE607-2025>
- Smyth, A. R., Laughinghouse, H. D., Reynolds, L. K., Camp, E. V., & Havens, K. (2024). "Cambio climático: Efectos sobre la salinidad en los estuarios de Florida y respuestas de las ostras, las praderas marinas y otras formas de vida animal y vegetal: SGEF-218s/SS742, 2/2025" *EDIS* (1). DOI: <https://doi.org/10.32473/edis-ss742-2025>



## Upcoming Extension Events

**April**

10	Vanilla Workshop: An Introduction to Domestic Vanilla Production
15	Workshop: Identifying Challenges and Solution for Water Quality Restoration
22	New Growers' Workshop: Avocado

**May**

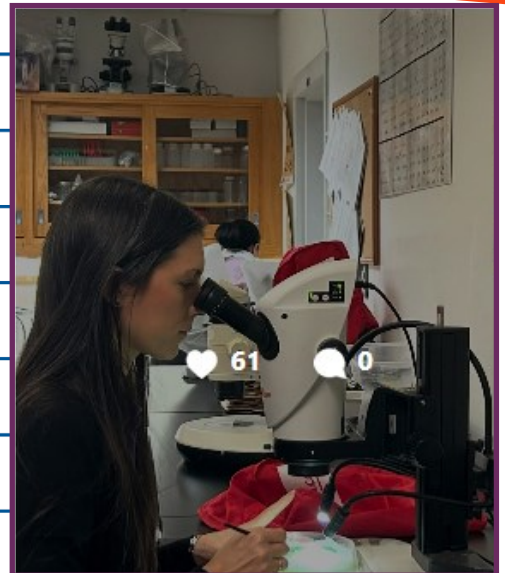
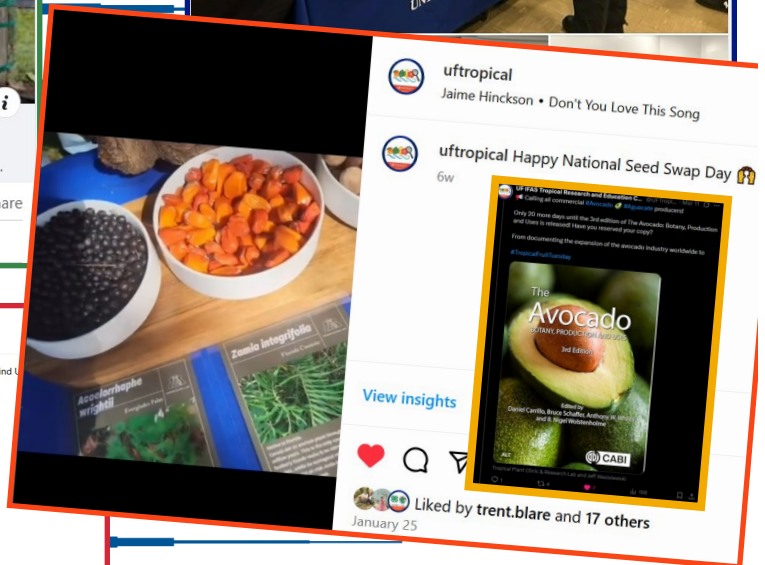
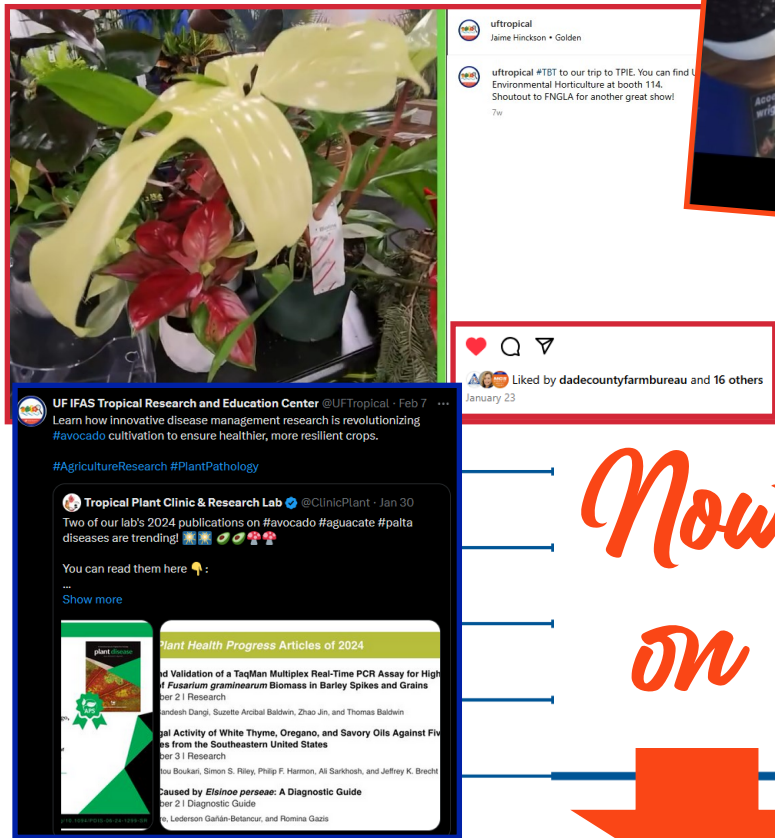
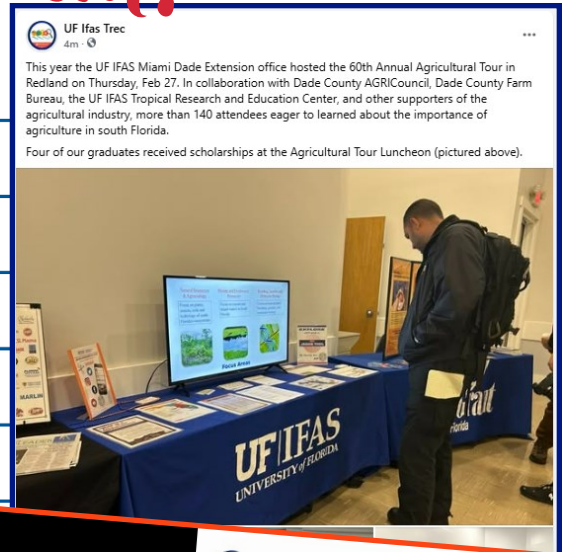
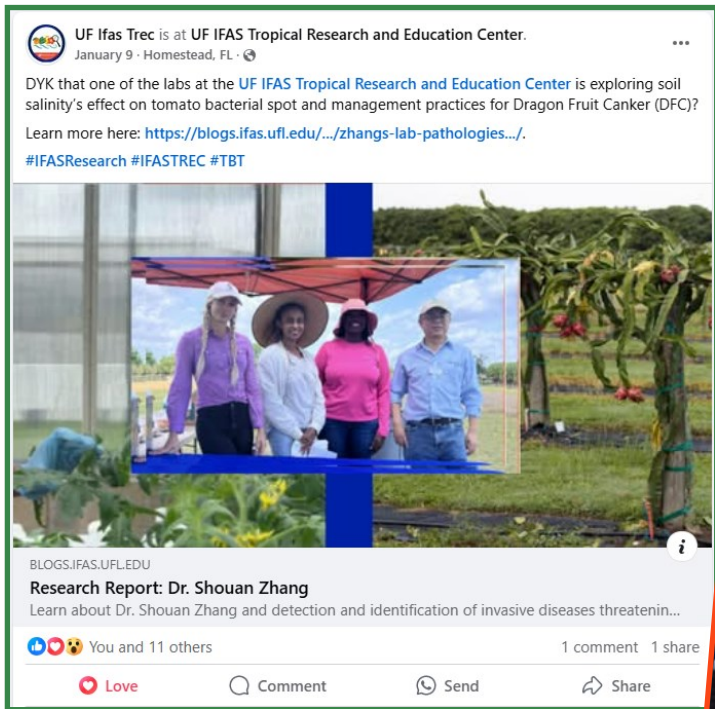
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1 & 2	Title: Phytophagous and predacious mites of agricultural importance
7	Hurricanes, flooding, drought



# Research Publications

- Ataide, L., Velazquez, Y., Reyes-Arauz, I., Villamarin, P., Canon, M., & Revynthi, A. (2025). Potential of dip treatments to disinfest cuttings of the invasive Thrips parvispinus (Thysanoptera: Thripidae). *Journal of Economic Entomology*, toae265. DOI: <http://dx.doi.org/10.1093/jee/toae265>
- Ayika, M., Bansal, K., Chakrabarti, S., Gazis, R., & Dhillon, B. (2024). Lasiodiplodia throbromae causes rachis blight on coconut palms (*Cocos nucifera* L.). *Plant Disease*, 1094. DOI: <https://doi.org/10.1094/PDIS-09-24-1925-PDN>
- Chen, S., Michael, V. N., Brewer, S., Chambers, A., & Wu, X. (2025). BSA-seq. and transcriptome analyses reveal candidate gene associated with petiole color in papaya (*Carica papaya* L.). *Ornamental Plant Research*, 5, e002. DOI: <https://doi.org/10.48130/opr-0024-0032>
- De Giosa, M., De Lillo, E., Tassi, A. D., Revynthi, A. M., de Andrade D. J., Ochoa, R., Yang, X., & Carrillo, D. (2024). *Eriophyes pouteriae* sp. nov., a new mite species infecting *Pouteria sapota*. *Insects*, 15(12), 972. DOI: <https://doi.org/10.3390/insects15120972>
- Demessie, S. F., Dile, Y. T., Bedadi, B., Gashaw, T., Bayabil, H. K., & Sintayehu, D. W. (2025). Assessing and projecting land use land cover changes using machine learning and artificial neural network models in Guder watershed, Ethiopia. *Environmental Challenges*, 101074. DOI: <https://doi.org/10.1016/j.envc.2024.101074>
- Dutra, P. S. S., Huang, Y., De Paula Lelis, T., Gazis, R., Crane, J. H., & Zhang, S. (2025). *In vitro* sensitivity and field effectiveness of synthetic and plant-based fungicides against dragon fruit canker caused by *neoscytalidium dimidiatum*. *Crop Protection*, 107111. DOI: <https://doi.org/10.1016/j.cropro.2025.107111>
- Kanchupati, N. M., Seal, D. R., Schaffer, B., & Liburd, O. E. (2025). A strategic approach to reduce pepper weevil damage to jalanpeno pepper plants with conventional and biorational insecticides. *Agronomy* 15(1), 131. DOI: <https://doi.org/10.3390/agronomy15010131>
- Luckew, A., Sari, N., Pandey, S., McAvoy, T., Simmons, A. M., Meru, G., & McGregor, C. (2025). Watermelon germplasm with resistance to whitefly-transmitted viruses. *HortScience*, 60(2), 245-253. DOI: <https://doi.org/10.21273/HORTSCI18262-24>
- Navia-Urrutia, M., Sendoya-Corrales, C. A., Espindola-Barquera, M. C., Barrientos-Priego, A. F., Ochoa-Ascencio, S., Crane, J. H., & Gazis, R. (2025). Searching for Laurel Wilt resistance in avocados of Mexican and Mexican-Guatemalan Ancestry. *Plant Disease*, DOI: <https://doi.org/10.1094/PDIS-06-24-1299-SR>
- Roda, A., Nachman, G., Scheiner, K. & Carrillo, D. (2024). Density and distribution of the flat mite (*Brevipalpus yothersi*) (*Acari: Tenuipalpidae*) on four *Hibiscus* varieties: Do leaves tell the full story?. *Experimental and Applied Acarology*, 94(9). DOI: <https://doi.org/10.1007/s10493-024-00970-z>
- Serrano, T., Brym, Z. T., Monserrate, L. A., Her, Y. G., Stanford, J., Bhadha, J. H., Singh, H., Sharma, L. K., Upadhyaya, Y. R., Griffin, W. D., Shellenberger, H. T. (2025). Nitrogen fertilizer effects on hemp biomass production detected by drone-based spectral imaging. *HortScience*, 60(3), 353-361. DOI: <https://doi.org/10.21273/HORTSCI18264-24>
- Sirmans, S., Avery, P. B., Cicero, J., Hunter, W., Cave, R. D., & Carrillo, D. (2025). Persistence of three biopesticides containing entomopathogenic fungi under tree canopy conditions in Florida, USA. *Biocontrol Science and Technology*, 35 (1–13). DOI: <https://doi.org/10.1080/09583157.2024.2433534>
- Weber, S., Lugo-Duque, M. A., & Gazis, R. (2025). First report of postharvest fruit rot on passion fruit (*Passiflora edulis*) caused by *Lasiodiplodia theobromae* in the U.S.A. (2025). *Plant Disease*. DOI: <https://doi.org/10.1094/PDIS-09-24-1968-PDN>

*Let's get Tropical!*



Now  
on

