

INSIDE TREC



Spring 2023

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Inside TREC is a seasonal newsletter distributed by the Marketing & Communications Department of UF/IFAS TREC via e-mail and on the UF/IFAS TREC [website](#).

You may forward any questions or comments about this periodical to Monique Scoggin, mis6664@ufl.edu.

From the Desk of the Director

Well, we are at the start of another hurricane season. Although it seems like an oxymoron to have the words “good” and “hurricane” in the same sentence, the “good news” about this hurricane season is that NOAA forecasters with the Climate Prediction Center are predicting that the 2023 season is expected to be less active than recent years. Specifically, they are forecasting a range of 12 to 17 named storms, of which 5 to 9 could become hurricanes with winds of 74 mph or higher, and 1 to 4 with a chance of becoming major hurricanes with winds of 111 mph or higher.

While we at UF/IFAS TREC believe in scientific and technological advancements in hurricane modeling, which allows NOAA to make such predictions and the improved accuracy with which storms are tracked, we are not taking anything for granted as we know too well that it only takes one hurricane to upend everything. Etched in our mind is destruction to tropical fruit crops among others caused by recent hurricanes and tropical storms (1992, 1994, 2004, 2005, and 2017) that resulted in losses in the hundreds of millions of dollars. As such, we have put into practice the recommendations based on research conducted at our Center and elsewhere to protect our tropical and subtropical fruit collections, which are an integral part of the mission of UF/IFAS’ research, teaching, and extension programs.

continued on page 2

From the Desk of the Director (continued)

Included in our collection, which spans 40 plus acres, are close to 200 different cultivars of mangoes; 80 cultivars of tropical avocados; 19 cultivars of Mamey sapote; and 21 cultivars of Carambolas, Lychees, Longans, Loquat, Sapodilla, Guava, Wax Jambu, Jack fruit, Annona, Canistel, Velvet apples, to name a few. Trees in our collection are a partial source of propagation material for many of the fine nurseries in south Florida that provide commercial and urban residents with tropical fruit trees. Our collections are also part of the educational programs offered by educators, from primary school through graduate training programs, and other professional programs. The TREC collection is used in the extension education and outreach programs of the University of Florida and are viewed, studied, and used for training and educating commercial clientele, interested professionals, and urban residents with an interest in tropical fruit trees. In addition, plant material from our collections is used by applied and basic researchers throughout the U.S. and the world in their research investigations. As such, it behooves us to do all we can to ready our groves/orchards to minimize some of the damage that usually accompanies such natural disasters. For instance, it has been shown repeatedly that one of the most beneficial pre-hurricane cultural practices to reduce tree damage and toppling is a regular pruning program (topping, hedging and skirting) to control tree size. But this is only one such practice that can be implemented.

Dr. Jonathan Crane, our tropical fruit horticulturist, and his colleagues have written extensively on such topics, providing a slew of information to help minimize damage and speed recovery after a tropical storm or hurricane. In one of his articles, he and his colleagues outlined both pre- and post-hurricane practices that can be adopted by commercial tropical fruit producers to safeguard their livelihood ([HS287](#)). Such advice is not only targeted to commercial producers, but also to homeowners to minimize the damage done to their favorite backyard trees ([HS 1066](#)).

While it is virtually impossible to prevent such natural disasters, proper planning and preparation can certainly help to minimize the damage. Fingers crossed that the 2023 season will be a quiet one, with the named “hurricanes” having no noticeable ‘eyes’—everyone stay safe.



Edward 'Gilly' A. Evans

UF's Core Value Connection



Stewardship

In this issue, Dr. Evans' message reflects the **Stewardship** that runs rampant throughout the Institute of Food and Agricultural Sciences (IFAS). In preparing the prized collection of subtropical and tropical groves at the Tropical Research & Education Center for hurricane season, the faculty and staff are fulfilling the mission of conservation and preservation. As Dr. Evans frequently reminds us: “we did not inherit this planet from our ancestors, but borrowed it from future generations.”

To learn more about the UF Core Values, click [here](#).

Research Report



In this installment of TREC's Research Report, you'll learn about [Dr. Ashley R. Smyth](#), an Assistant Professor in the UF/IFAS Soil, Water, and Ecosystem Sciences Department and her research.

UF/IFAS is committed to fostering integrated team science to address challenges faced by Florida and the world. To promote and grow emerging agricultural enterprises, the UF/IFAS Deans for Research and Extension partnered with the Senior Vice President of Agriculture and Natural Resources to provide [Support for Emerging Enterprise Development Integration Teams \(SEEDIT\)](#). Dr. Smyth is leading a SEEDIT to look at the possibility of establishing seaweed as a viable industry for aquaculture farmers in the State.

Why seaweed? The idea is that seaweed has many uses and environmental benefits. Seaweed could serve as an alternative crop for shellfish aquaculture farmers whose operations can be shut down due to red-tide. In addition to being an alternative for shellfish farmers, the cultivation of seaweeds can improve water quality. Seaweeds store nutrients like nitrogen in their tissue, which is removed from the waterway at harvest. Since seaweed would remove nitrogen from waterways, it is possible that seaweed farmers could be paid for the environmental benefits of their operations.

Another potential use of seaweeds could be the production of a "climate smart" animal agriculture. Since certain seaweeds have compounds that, when ingested, may help cattle produce less methane, there may be potential for a greener cattle industry. Selling the seaweed to local cattle ranchers may be a new market for seaweeds produced in Florida's waterways, if they have this compound.

With the proper incentives, seaweed could increase profitability for the shellfish industry while addressing nutrient pollution and reducing the greenhouse gas emissions of the livestock industry. For now, this research is still in the early phases, but one day we will report back to you about whether seaweed is a new aquaculture industry for Florida and if Florida seaweeds make for climate smart cattle.

TREC IN FOCUS

Graduate Student

In this edition of TREC's graduate student *In Focus* series, we're zooming in on Aline de Santos Camargo, a Ph.D. candidate in Dr. Bruce Schaffer's Ecophysiology of Subtropical and Tropical Horticultural Crops Lab. In this video, Aline discusses her research, "Understanding priming and stress memory to improve water use efficiency in peanut."

The ultimate goal of Dr. Schaffer's lab is to develop strategies to prevent or alleviate the negative impact that stress can cause on plant growth and yield. Specifically Aline is interested in the application of stress priming to enhance peanut drought stress tolerance. By applying water deficit and chemical priming and assessing plant responses using whole plant and single leaf measurements of important physiological traits, Aline hopes she



You can find this and other graduate student videos on our YouTube channel.



can provide a framework that will enable increased water availability for growing crops in the future and improving yield for plants under stress. [Click here to watch the video.](#)

In this edition of TREC's PostDoc Exposé(d), we feature Dr. Leder-Gañán Betancur, a post doctoral researcher in Dr. Romina Gazis' Plant Pathology lab.

PostDoc Exposé(d)

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

A: I am originally from Colombia, where I grew up in a rural area. My family has been in the small coffee farm business for several generations. I completed my Bachelor's in Agronomy and my Master's degree in Plant Pathology at Universidad de Caldas in Colombia, where I investigated the causes of diseases in tropical fruit crops. I came to the USA



in 2016 to pursue my Ph.D. in Plant Pathology at Washington State University - Tree Fruit Research & Extension Center (WSU-TFREC), supported by a Fulbright Scholarship, where I studied and developed tools to optimize the control of diseases in conventionally grown apples in the U.S. Pacific Northwest region. At TFREC, I became interested in strengthening my extension skills, which are critical for bringing essential and practical information to different groups, including agricultural producers, consumers, and young people. Soon after I completed my Ph.D., I learned about a postdoc position at UF/IFAS TREC in Dr. Romina Gazis' lab that

TREC EXTENDED



Teresa Olczyk has been with the UF/IFAS Miami-Dade County Extension Office since 1995, becoming the Director in 2010. She provides leadership for close to 40 Extension faculty and staff helping them to deliver relevant research-based educational information to the residents, government entities, and businesses of the county. Some of her additional responsibilities include educating Miami-Dade County government administration and elected officials about the role and responsibilities of the Extension Service in Florida and in Miami-Dade County.

Advisory Board

ICYMI

UF/IFAS TREC Advisory Board member, Erik Tietig, is now a double Gator! To learn more about Erik and his most recent accomplishment, read [this article](#).



A: (continued)

fits into my primary research and extension interests. I did not hesitate when I saw the opportunity at TREC and applied immediately. I am glad I was selected for this position, where I am evaluating environmentally friendly and sustainable disease management tools for Florida's mango and avocado producers.

Q: What is something unique to your role or project here that you have not encountered before?

A: Not related to the research project I am involved with but to the research group I am working with at TREC: the TREC Plant Diagnostic Clinic. The facilities, the team, and the service it offers are something unique that I never had the chance to experience before. Usually, I like to stop by the clinic and learn about disease symptoms, the diagnosis process, and the skills it requires to serve the South Florida agricultural growers, homeowners and landscape services.

Q: What is the hardest aspect of your position?

A: It is knowing that I would have to leave TREC at some point to continue the next step in my professional career. It has been a wonderful and professionally enriching experience to be part of the team at the Tropical Plant Pathology Research Lab and the TREC community.

Student Awards

On April 20, the University of Florida's Office of Student Activities and Involvement held their Involvement Awards Ceremony recognizing the incredible work being done by Student Organizations across campus. The [South Florida Graduate Student Organization \(So Flo GSO\)](#) received the award for Excellence in Health and Wellness through an Event for their Sports Day. The Award recognizes a student organization that promotes mental health, physical health, and overall well-being for its student membership or within the campus community through education, access to resources, and/or internal initiatives. Members of the So Flo GSO include: President, **Aline de Camargo Santos**, Vice President, **Prerna Sabharwal**, Treasurer, **Christ Mane Belizaire**, Event Coordinator, **Marcello De Giosa**, and Advisor, **Dr. Ashley Smyth**.



Aline de Camargo Santos, a Ph.D. candidate in Dr. Bruce Schaffer's lab, received the 2023 Innovator's Travel Award from PP Systems. Aline will use the funds to attend the 2023 annual meeting of the American Society for Horticultural Sciences in Orlando, Florida.

Jesse Potts, a Ph.D. student in Dr. **Xingbo Wu's** Plant Breeding lab, received a \$1,000 NSF Workshop scholarship. The funds will facilitate his participation in the prestigious 2023 NSF-sponsored Fundamentals and Practice of Agrobacterium-mediated Plant Transformation Workshop taking place this summer in Madison, Wisconsin.

Upcoming (Extension) Events

June	
14	Pitaya Growers Economic Forum—UF/FAS Extension Miami-Dade County
21	Workshop on Essential Oils with Dr. Crane

July	
19 - 20	Plant Science Council visit

Faculty & Staff Awards

The University of Florida Superior Accomplishment Award recognizes staff members who contribute outstanding and meritorious service, efficiency and/or economy, or to the quality of life provided to students and employees. Dr. Geoffrey Meru nominated his Biological Scientist, **Yuqing Fu**, for the award at the TREC level. Yuqing's recognition here at TREC advanced her to the IFAS-level awards where she won again to compete with staff members from across the entire University. Yuqing won the award at the University level which also included \$2000 and a plaque. Thanks Dr. Meru for nominating Yuqing and to everyone who provided support letters for her nomination.



Save the Date:

November 4

August

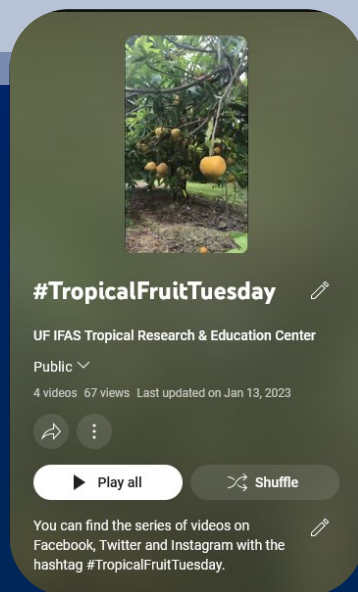
7	Industrial Hemp Program Info Meeting: Hemp harvest & processing
10 - 11	BMP Summit & Hemp Field Day at PSREU



EDIS Publications

- Blare, T., Abdool-Ghany, A. A., Solo-Gabriele, H. M., y Gonzalez, E.** 2023. Costos estimados de la producción de compost de sargazo: FE1130, 3/2023. DOI: <https://doi.org/10.32473/edis-FE1130-2023>
- Blare, T., Ballen, F. H., Haley, N., Contreras, V., Crane, J. H., Carrillo, D., y Gonzalez, E.** 2023. Estimación del costo y la rentabilidad de la producción de lichi (*Litchi chinensis*) en el centro y sur de Florida: FE1131, 3/2023. DOI: <https://doi.org/10.32473/edis-FE1131-2023>
- Blare, T., Contreras, V., Ballen, F. H., Anderson, J. D., Crane, J. H., and Haley, N.** 2023. Cost estimates of producing purple passion fruit in south Florida: FE1129, 3/2023. *EDIS* 2023. DOI: <https://doi.org/10.32473/edis-FE1129-2023>
- Blare, T., Contreras, V., Ballen, F. H., Anderson, J. D., Crane, J. H., and Haley, N.** 2023. Estimación de costos de producción de maracuya morada en sur de Florida: FE1134, 4/2023. *EDIS* 2023. DOI: <https://doi.org/10.32473/edis-FE1134-2023>
- De Favari Tardivo, C., Meru, G., Scoggin, M., Balerdi, C. F., Vasquez, L., Olczyk, T.** Producción de flores comestibles en la Florida: HS1460, 4/2023. DOI: <https://doi.org/10.32473/edis-hs1460-2023>
- Meru, G., Fu, Y., Leyva, D., Sarnoski, P. Yagiz, Y., Scoggin, M., Balerdi, C. F., Vasquez, L., Olczyk, T.** (2023). Beneficios para la salud de la semilla y perfil nutricional de 35 cultivares de calabaza: HS1461, 4/2023. DOI: <https://doi.org/10.32473/edis-hs1461-2023>
- Meru, G., Fu, Y., Scoggin, M., Balerdi, C. F., Vasquez, L. y Olczyk, T.** (2023). Rendimiento y desempeño hortícola de semillas desnudas de calabaza en el sur de Florida: HS1323S. DOI: <https://doi.org/10.32473/edis-HS1463-2023>
- Revynti, A. M., Vargas, G., Crane, J. H., Wasielewski, J., Kendra, P. E., y Carrillo, D.** (2023). El Ácaro de la Eriosis del Lichi, *Aceria litchi* (Keifer) (Acari: Eriophyidae): IN1401. DOI: <https://doi.org/10.32473/edis-IN1401-2023>
- Revynti, A. M., Vargas, G., Velazquez Hernandez, Y., Kendra, P. E., Carrillo, D., Mannion, C. M.** (2023). El Picudo del Botón del Hibisco (*Anthonomus testaceosquamosus* Linell, Coleoptera: Curculionidae): IN1400, 4/2023. DOI: <https://doi.org/10.32473/edis-IN1400-2023>

FOLLOW



Research Publications

- Adeleye, V. O., Seal, D. R., Liburd, O. O., Martini, X., & Meru, G. (2023). Integrated approach using insecticides in combination with reflective plastic mulch for the management of pepper weevil, *Anthonomus eugenii* (Coleoptera: Curculionidae). *Environmental Entomology*, nvad033. DOI: <https://doi.org/10.1093/ee/nvad033>
- Berihun, M. L., Tsunekawa, A., Haregeweyn, N., Tsubo, M., Fenta, A. A., Ebabu, K., Bayabil, H. K., Dile, Y. (2023). Predicting runoff and sediment responses to climate-resilient land use and management scenarios. *Environmental Science and Pollution Research* 2023. DOI: <http://dx.doi.org/10.1007/s11356-023-27452-w>
- Chagas, P. C., Crane, J., Chagas, E. A., Vendrame, W., Costa, B. N. S., Ruben Neto, A., Moura, E. A. (2023). Artificial pollination and use of growth regulators in atemoya 'Gefner' fruits. *Bio-science Journal*, 2023, 39(e39040). DOI: <https://doi.org/10.14393/BJ-v39n0a2023-65135>
- Fu, G., Liu, H., Li, Y., Liu, B., Zhang, S., Ji, X. (2023). Evaluation of the biocontrol potential of a natural extract from *Paecilomyces variotii* against *Meloidogyne incognita* in cucumber. *Plant and Soil* 2023. DOI: <http://dx.doi.org/10.1007/s11104-023-05982-z>
- Kendra, P., Montgomery, W. S., Tabanca, N., Schnell, E. Q., Vazquez, A., Menocal, O., Carrillo, D., Cloonan, K. R. (2023). Piperitone (p-Menth-1-En-3-One): A new repellent for tea shot hole borer (Coleoptera: Curculionidae) in Florida avocado groves. *Biomolecules* 13(4): 656. DOI: <http://dx.doi.org/10.3390/biom13040656>
- Moreno, S. R., Yazdanpanah, M., Huang, T., Sims, C. A., Chase, C., Meru, G., Simonne, A., MacIntosh, A. J. (2023). Comparative analysis of qualitative attributes for selection of calabaza genotypes in the southeast United States. *Horticulturae*, 2023, 9(3), 409. DOI: <https://doi.org/10.3390/horticulturae9030409>
- Nunes, J. A., Souza, E., Locks Guimaraes, R. M., Grangeiro Nunes, C. C. C., Alves dos Santos, M., Schaffer, B. (2023). Effect of controlled traffic on maintaining physical soil quality in sugarcane fields under different crop management systems. *Archives of Agronomy and Soil Science*. DOI: <http://dx.doi.org/10.1080/03650340.2023.2217746>
- Rehner, S. A., Gazis, R., Doyle, V. P., Dos Santos Vieira, W. A., Campos, P. M., and Shao, J. (2023). Genome resources for the *Colletotrichum gloeosporioides* Species Complex: 13 tree endophytes from the neotropics and paleotropics. *American Society for Microbiology*. DOI: <https://doi.org/10.1128/mra.01040-22>
- Shin, S. Her, Y. G., Munoz-Carpena, R., Khare, Y. P. (2023). Multi-parameter approaches for improved ensemble prediction accuracy in hydrology and water quality modeling. *Journal of Hydrology*, 2023 129458. DOI: <https://doi.org/10.1016/j.jhydrol.2023.129458>
- Shin, S. Her, Y. G., Munoz-Carpena, R., Yu, X., Martinez, C. J., Singh, A. (2023). Climate change impacts on water quantity and quality of a watershed-lake system using a spatially integrated modeling framework in the Kissimmee River—Lake Okeechobee system. *Journal of Hydrology: Regional Studies* 47 (101408). DOI: <http://dx.doi.org/10.1016/j.ejrh.2023.101408>
- Soares, J. M., Karlsen-Ayala, E., Salvador-Montoya, C. A., Gazis, R. (2023). Two novel endophytic *Tolypocladium* species identified from native pines in south Florida. *Fungal Systematics and Evolution*. DOI: <https://doi.org/10.3114/fuse.2023.11.04>

FIND US ON SOCIAL!

ICYMI — These are just some of the highlights from the beginning of the Spring semester at UF/IFAS TREC. To stay up to date on all of TREC's news and events, follow us on all platforms at [UFTropical](#) or bookmark the *TREC in the News* page on our [website](#).

