

# Everglades Research and Education Center Summer Newsletter

2022





# EREC Summer Newsletter 2022

## A Word from our Director: Dr. Samira Daroub



The first part of 2022 has been very productive for EREC full of change. We had two faculty retirements: Dr. Ron Cherry from Entomology after 39 years of service and Dr. Richard Raid after over 35 years of service. Both had distinguished careers with impactful contributions to the Center and the Everglades Agricultural Area (EAA) community. Dr. Cherry and Dr. Raid were granted Emeritus Professor status, and we look forward to seeing them visit and stay connected.

We have two NEW faculty joining the EREC! Dr. Katia Viana Xavier Assistant Professor in Plant Pathology started Feb 2021 and is featured in this newsletter. Dr. De-Fen Mou has just accepted our offer to Join EREC as an Assistant Professor in Entomology and will start January 1, 2023. We are very excited to have both as long-term faculty members at the EREC!

With generous donations from Dr. Richard Raid's program, the EAA growers' community, Dr. Ron Cherry's program, and UF IFAS, we had the groundbreaking of the Pavilion during Dr. Raid's retirement party. The event was attended by over 120 people from the growers' community and Palm Beach high school personnel who worked closely with Dr. Raid with his middle school Gardner program and the Barn owl program. The event was also attended by Dr. Jeanna Mastrodicasa, UF IFAS VP office, Dr. Rose Loria, Plant Pathology Chairperson, Dr. Jerry Fankhauser, UF IFAS Dean of research office, and UF IFAS facilities personnel. The Pavilion is much needed for the many extension and community events we host at the Center. WE thank everyone for their continued support!

**We are very excited to announce the Date for the CENTENNIAL Celebration of EREC: February 10, 2023!**  
**Please mark your calendars and more information to follow.**

I hope you enjoy reading about the various events at the EREC, and the accomplishments of our faculty, staff and students. Congratulations to all the students who have finished their degree this Spring! We are very proud of you and your accomplishments!



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## Everglades REC: Student and Post Doc Updates

### New Members of the EREC



Dr. Pamela Aracena Santos is a Postdoctoral Associate at the Everglades Research and Education Center at the University of Florida. She received her Ph.D. in Soil Science and Plant Nutrition from Selcuk University in Turkey. Her current research focuses on evaluating differences in phosphorus (P) reduction of Everglades Agricultural Area (EAA) farm basins with similar best management practices (BMPs); specifically, determining differences in performance in select farms in the EAA by evaluating the impact of soil chemistry and historical land use on P concentration and loads on these farms.

Carolina Tieppo Camarozano is a M.S. student at the Everglades Research and Educational Center at the University of Florida. Originally from Brazil, she received her Bachelor's degree in Biological Sciences from the University of São Paulo. During which she had the opportunity to come to the EREC in an internship program (2019) with Dr. Julien Beuzelin, to work with corn silk flies. She kept the interest in working with Insect Pest Management and is now part of the UF Entomology department. Her research is focused on the management of the rice stink bugs complex, in the aim to find better solutions for growers, and on the study of their natural enemies in the Everglades Agricultural Area.



Larissa Pereira Lima is a M.S student in Entomology at the Everglades Research and Education Center of the University of Florida. She is originally from Brazil and received her bachelor's degree in Agronomic Engineering from the University of Sao Paulo. For 5 years she worked on integrated pest management for sugarcane and fruits crops. Now, under the supervision of Dr. Julien Beuzelin, her research is focused on understanding corn silk fly distribution in a diversity of habitats, advancing knowledge of these important pests for sweet corn growers in southern Florida.



## Everglades REC: Awards

Congratulations to Dr. Hardev Sandhu for being recognized at the 2022 FAES Research Awards Ceremony as a 2021 UF/IFAS Large Grant Leadership Award!



Congratulations to Dr. Hardev Sandhu on being recognized by UF-IFAS as a million dollar awardee! Special thanks to the Florida Sugar Cane League for their continued support to the sugarcane breeding program!



Congratulations to Jose Ruiz and Anthony Burke for the IFAS Superior Accomplishment Awards! Thank you for all you do at the Everglades REC!



Congratulations to Dr. Samira Daroub for becoming an SSSA Fellow!



Samira Daroub, 2021 SSSA Fellow

Lots of things excite me about my career. Teaching and mentoring students is on top of my list. Having students move on to successful careers gives me enormous satisfaction. Collaboration with other scientists and working on challenging projects is invigorating and exciting. It is exciting for me to be at a research center and work with many growers to find practical solutions for emerging issues. Working in academia gives me freedom to explore new areas of discovery and interact with scientists from all over the world.



# Everglades REC: Student Updates

M.S. Student Lis Rodrigues-Porto

Congratulations to Lis Porto on successfully presenting her M.S. exit seminar on: Resistance To Downy Mildew (*Bremia lactucae*) And To Other Threatening Diseases In Lettuce. Lis has been working with Dr. German Sandoya in the lettuce breeding program. Lis Rodrigues has joined as a Research Support Specialist at a private company and soon will return to UF to work at the GCREC.

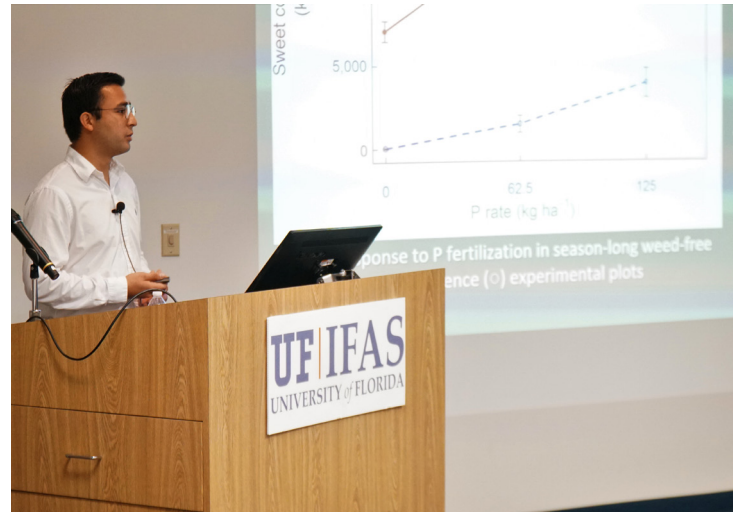
To learn more about the research Lis conducted at the EREC, [click this link: https://www.youtube.com/watch?v=j37iWCvtiIo](https://www.youtube.com/watch?v=j37iWCvtiIo)



M.S. Student Alex Rodriguez

Congratulations to Alex Rodriguez on completing his Master's Exit Seminar! Alex presented his research on Integrated Weed Management Systems for Sweet Corn in Organic Soils. Alex's advisor at the EREC was Dr. Calvin Odero.

Alex will be pursuing his PhD. in the fall at the Gulf Coast Research and Education Center.





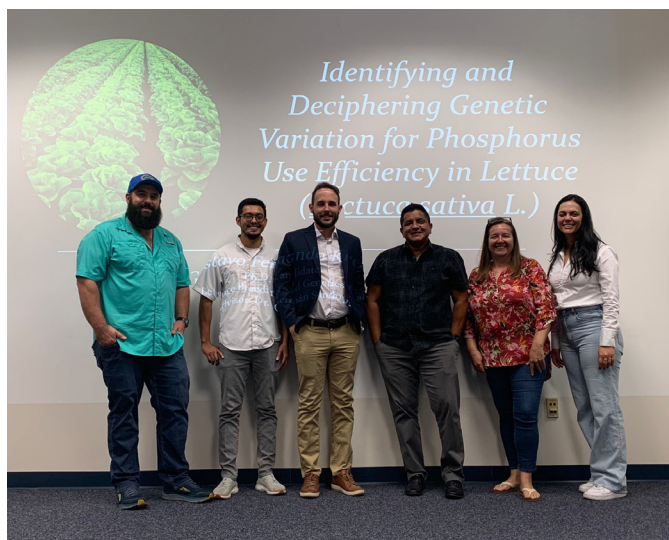
# Everglades REC: Student Updates

PhD. Student Gustavo Kreutz

PhD. Student Saroop Sandhu

Congratulations to Gustavo Kreutz for presenting his PhD. exit seminar! Gustavo's seminar was titled: Identifying and Deciphering Genetic Variation for Phosphorus Use Efficiency in Lettuce. Gustavo has been working in the UF/IFAS Lettuce Breeding Program at EREC under the supervision of Dr. Germán Sandoya and was co-advised by Dr. Jango Bhadha. Gustavo will be graduating on August 5th.

Gustavo, in collaboration with the EREC, created a short video detailing the research he conducted. To view the video, click this link: <https://www.youtube.com/watch?v=Aa4q5Kdj1Xg>



Congratulations to EREC Ph.D student, Saroop Sandhu for successfully defending his dissertation on industrial hemp research! Saroop's advisor at the EREC was Dr. Hardev Sandhu.

Saroop is now working as a Research Coordinator at the Tropical Research and Education Center in Homestead.





# Everglades REC: Student Updates

PhD. Student Shabnam Sadeghibaniani

2022-2023 Student Officers

Congratulations to Shabnam Sadeghibaniani on passing her qualifying exams! Shabnam's advisor at the EREC is Dr. Mabry McCray.

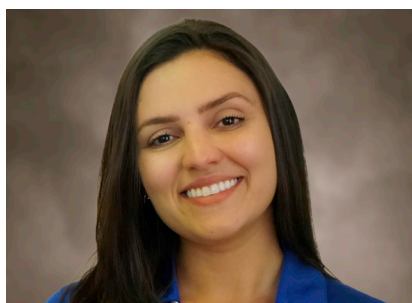
To learn more about Shabnam's research, [click this link: https://www.youtube.com/watch?v=BnMWQUn7zKA](https://www.youtube.com/watch?v=BnMWQUn7zKA)



Congratulations to the new Everglades REC student officers for 2022-2023!



President:  
Hima Varsha Madala



Vice President:  
Larissa Pereira Lima



Event Coordinator:  
Carolina Tieppo



Secretary:  
Noel Manirakiza



Treasurer:  
Xue Bai



## Everglades REC Welcomes a New Faculty Member

Dr. Katia Xavier:  
ASSISTANT PROFESSOR PLANT PATHOLOGY

Dr. Xavier's research program focuses on the development of integrated strategies to help growers effectively manage diseases on vegetables, sugarcane, rice, and commercial sod produced in the Everglades Agricultural Area (EAA). Work toward this goal includes characterizing the roles of genetic variability of pathogen populations and of environmental factors in disease development, along with identification of sources of host resistance and effective chemical/biological application schedules. Her research program includes studies of pathogen identification to monitor the crops grown in the region for early detection of emerging pathogens.

Her Extension program focuses on current and future needs and concerns of growers. Thus, she works closely with extension agents, crop consultants, and stakeholders to identify their most pressing needs. The ultimate goal of her Extension program is to disseminate research findings and knowledge related to integrated disease management to a diverse clientele including growers, crop consultants and industry representatives in the EAA. Opportunities for grower education include disease identification, the importance of proper fungicide rotations and timing, crop rotation, residue management, and epidemiological factors contributing to disease development.





## Everglades REC: Faculty Updates

### Dr. Hardev Sandhu

- In 2022 FAES annual award ceremony, Dr. Sandhu received the ‘Large Grant Leadership Award’. This award was presented to recognize the faculty who received large grants (>\$1 million) in 2021.
- Dr. Sandhu’s Ph.D. student, Saroop Sandhu graduated in Spring 2022. Saroop’s research was focused on evaluating industrial hemp as a potential crop for organic soils in southern Florida.
- In the annual sugarcane variety committee meeting in June 2022, Dr. Sandhu and his collaborators (USDA-ARS, Florida Sugar Cane League) released three new cultivars (CP 15-1407, CP 15-2258 and CP 15-2516) to be cultivated on organic soils.
- Dr. Sandhu used his Faculty Enhancement Opportunity (FEO) award to visit the University of Southern Queensland (USQ), Toowoomba, Australia in May 2022. The overall goal was “Enhancing skills in precision agriculture and novel technologies in sugarcane production systems” by visiting precision agriculture labs and field in USQ and the surrounding area.
- Dr. Sandhu conducted the ‘Sugarcane Research Focus Group Meeting’ in June 2022 to update the Florida sugarcane industry about current research projects conducted at the EREC, and also to receive feedback from the industry about future research priorities.



Dr. Sandhu at the Bundaberg Sugar Farm in Australia



Sugarcane Field Day



## Everglades REC: Faculty Updates

Dr. German Sandoya

Members of the UF/ IFAS Lettuce Breeding Program participated at the Florida State of Horticultural Society (FSHS) annual meeting held in Sarasota, Florida in early June. Germán Sandoya presented work on identifying lettuce accessions that show resistance to common diseases that affect leafy vegetable growers at the EAA. Gustavo Kreutz (Ph. D. candidate) introduced his work on Phosphorus Use Efficiency on hydroponic grown lettuce. Jesse Murray (Ph. D. student) presented his research on Vitamins in lettuce. Byron Manzanero presented a poster in germplasm available at the UF/IFAS lettuce breeding program.

Congratulations to Hannah Mather (pictured below) for receiving third place in the FSHS Oral Competition. Hannah's research is related to identify heat tolerance in lettuce for Florida production.

Congratulations to Lis Rodrigues and Gustavo Kreutz for their successful thesis and dissertation defense. Lis Rodrigues said goodbye to the lettuce breeding program and joined as Research Support Specialist at a private company and soon will return to UF to work at the GCREC. Gustavo Kreutz will continue his career in the private industry after his graduation. We also said "goodbyes" to Luisa and Abraham, OPS personnel who moved to other career paths.

In the Fall Semester of 2022, we will have one new member in our team. Jairo Arcos Jaramillo will join us from Colombia. Jairo conducted his Master studies at CIAT (The International Center for Tropical Agriculture) and he will continue his Ph. D. in lettuce breeding and genetics.

In January and April, the Lettuce Breeding Lab hosted a tour from The Wisconsin Dairy Association and the Broward County Master Gardeners (23 students). The class shared information about the breeding efforts and methods performed at the EREC.



Hannah Mather (middle of group)



From left to right: Hannah Mather, Lis Porto, Jesse Murray, Dr. German Sandoya, Byron Manzanero, Gustavo Kreutz.



## Everglades REC: Faculty Updates

### Dr. German Sandoya (cont.)

So far in 2022, the team published several research and extension publications. EDIS are available at <https://edis.ifas.ufl.edu/> online and statewide distribution through UF/IFAS Extension County Offices and Research and Education Centers.

- Examining phosphorus use efficiency across different lettuce (*Lactuca sativa* L.) accessions | SpringerLink
- Lettuce (*Lactuca sativa* L.) germplasm resistant to bacterial leaf spot caused by race 1 of *Xanthomonas hortorum* pv. *vitians* (Brown 1918) Morinière et al. 2020 | SpringerLink
- <https://apsjournals.apsnet.org/doi/10.1094/PDIS-09-21-2087-RE>

Publication In Spanish:

- HS1422s/HS1433: La Producción de Lechuga en Sistemas Hidropónicos a Pequeña Escala (ufl.edu)

#### 2021 FSHS Proceedings - 6/16/22

- Lettuce Downy Mildew Differential Cultivars Are Resistant to Other Important Diseases Page 137. Lis Natali R. Porto, Richard N. Raid, and Germán V. Sandoya-Miranda
- Screening Broad-spectrum Herbicides to Identify Lettuce Lines with Tolerance. Page 142. Shailaja Vemula, Calvin Odero, Germán Sandoya, Gregory MacDonald, Hardev Sandhu, and Ramdas Kanissery
- Soil Management Strategies to Reduce Fusarium Wilt of Lettuce in the Organic Soils of the Everglades Agricultural Area. Page 143. Jesse Murray, Richard Raid, and Germán Sandoya
- Lettuce Cultivated in Hydroponics Responds to Less Phosphorus Inputs. Page 148 Gustavo F. Kreutz, Jehangir Bhadha, and Germán V. Sandoya
- Toward Improvement of Lettuce for Vitamin C in Protected Agriculture. Page 149. Germán Sandoya, Amarat (Amy) Simonne, Abdul Bais Kadli, Robert (Bob) Hochmuth, Wanda Laughlin, Alexandor McMillan, and Morgan Morrow
- Investigating the Dynamic Transcript Level Changes of Senescenceassociated Genes in Lettuce during Postharvest Storage. Page 184. Yogesh Ahlawat, Catherine Belisle, Germán Sandoya, Steven Sargent, and Tie Liu





# Everglades REC: Faculty Updates

## Dr. Julian Beuzelin

The Entomology Program led by Dr. Beuzelin has addressed insect ecology and management for sweet corn, leafy vegetables, sugarcane, and rice.

Corn silk flies are the most damaging insect pests of sweet corn. Sampling of commercial farms conducted by MS student Larissa Pereira Lima and Intern Mariana Monteiro de Souza Barros showed that corn silk fly adults are abundant in sugarcane fields and weedy habitats adjacent to sweet corn fields. Larissa has shown that all habitats should be considered for corn silk fly management. Corn silk fly research also evaluated the efficacy of mineral insecticides alone and in combination with pyrethroids. However, results were not conclusive.

A weevil has emerged as a new pest of celery and parsley in southern Florida. Research in collaboration with Palm Beach County Extension Agent Anna Mészáros has focused on the identification of the insect, study of population dynamics, and evaluation of insecticide options. The weevil was identified as *Listronotus sparsus*. Sampling on commercial farms and at EREC revealed that the weevil was widespread and infested celery within weeks of transplanting. Effective registered insecticide options are limited. However, one non-registered insect growth regulator, novaluron, showed promising results.

Wireworms, which are click beetle larvae feeding on belowground parts of sugarcane plants, should be managed by flooding fields during the summer before planting or by applying an insecticide at planting. Two novel insecticides, Platinum and Nurizma, are expected to be granted registration in the next two years. Field and laboratory experiments were conducted to further understand how these insecticides affect wireworms and protect sugarcane plants. Results suggest that the two insecticides represent reduced-risk pest management options for our sugarcane industry.

Stink bugs are the only insects requiring management in Florida rice, which is grown in rotation with sugarcane and vegetables in the EAA. MS Student Carolina Tieppo Camarozano has initiated an on-farm study to identify stink bug natural enemies to determine whether a management strategy relying more on biological control would benefit conventional and organic production. Carolina has already collected parasitic wasps and flies attacking stink bug eggs and adults, respectively.

Dr. Beuzelin, his two graduate students, and Ms. Mészáros presented their results at the meeting of the Entomological Society of America Southeastern Branch in San Juan, PR, the Florida State Horticultural Society in Sarasota, FL, the Florida Entomological Society in Gainesville, FL, and the American Society of Sugar Cane Technologists in Bonita Springs, FL.





## Everglades REC: Faculty Updates

Robert Beiriger, Biological Scientist III

Robert Beiriger, the EREC's field corn breeder, is currently monitoring two sweet corn trials. One trial is with Starke Ayres, the largest independent vegetable seed company in South Africa, supplying both the commercial and consumer markets (trial pictured below in Figure 1). The other trial involves seed disease resistance for Crookham and Clifton seed company (trial picture below in Figure 2).

On May 26th, Mr. Beiriger attended the combined silage field day at the Plant Science Research and Education unit, in Citra, Florida. The event was hosted by the UF/IFAS Forage Team, in partnership with the University of Georgia Extension. Mr. Beiriger presented two field corn hybrids at the event: IR 289R and FM19. The Non-GMO, highly disease resistant and highly digestible hybrids have grown well in previous trials.

To learn more about Mr. Beiriger's research, **you can watch a short video with the following link:** <https://www.youtube.com/watch?v=6NaLOndZA00>



Figure 1



Figure 2



# Everglades REC: Extension Updates

## Anna Meszaros

A productive year for UF/IFAS Palm Beach County Commercial Vegetable Extension: Recap of the 2021/2022 vegetable production season meetings:

By Anna Mészáros, UF/IFAS Palm Beach County Commercial Vegetable Extension Agent II

In collaboration with UF/IFAS EREC faculty, Palm Beach County Commercial vegetable extension offered multiple workshops and meetings for stakeholders, including growers, crop consultants, industry representatives, professional organizations, contract researchers, UF/IFAS specialists, students, and extension agents.

A sweet corn management workshop held in October 2021, provided information on weed, disease, and insect management. Participants learned about the UF/IFAS sweet corn breeding program, as well as natural, non-GMO insect resistance in sweet and field corn. FDACS-DPI gave an update on the Cooperative Agricultural Pest Survey (CAPS) for sweet corn. Following the meeting attendees visited sweet corn research plots

An information exchange meeting was held with leafy vegetable stakeholders in February 2022 to assess the current situation of an emerging weevil pest of celery and parsley in the Everglades Agricultural Area (EAA) and discuss management research plans for this pest. Dr. Julien Beuzelin and myself took the lead on this unique research and extension project. Growers representing over 1,600 acres of celery and parsley production in the EAA along with major crop consultants attended the meeting. The meeting was followed by visiting celery research plots.

In March 2022, a group of UF graduate students attending Dr. Billy Crow's IPM class visited the center. Faculty members talked about the EAA and research conducted at the education center. Students had a chance to visit Duda Farms, the largest celery and radish producer in South Florida.

After a two-year break, the Lettuce Advisory Committee met in spring of 2022. The committee was originally formed in 1973, when the lettuce seed certification rule was implemented to control the lettuce mosaic virus (LMV). The virus had a devastating impact on the lettuce industry, but thanks to the effectiveness of the seed certification program, Florida has had only one LMV outbreak since. Today, the control of LMV depends primarily on using virus-free lettuce seed and on maintaining a period of lettuce-free cultivation in the area. This program remains a great example of a collaboration among lettuce stakeholders. The meeting was very well attended, UF/IFAS EREC specialists covered all aspects of lettuce crop management. Dr. Richard Raid, plant pathologist, gave his last public presentation before retirement. We thanked him for his exceptional dedication and years of hard work. Collaborations between the lettuce breeding program, led by Dr. Germán Sandoya, and the plant pathology program will continue with the newly hired plant pathologist, Dr. Katia Xavier. The next lettuce advisory committee meeting will be held in the fall. All interested in lettuce production are welcome to attend.





## Everglades REC: Extension Updates

### Anna Meszaros (cont.)

In May 2022, the first Florida Snap Bean Conference was held at the EREC Conference Center in collaboration with UF/IFAS Hendry County Extension. The first session of the conference focused on weed, disease, and insect management, whereas the second session emphasized the importance of irrigation, soil fertility, and nutrient management. Dr. Thomas Obreza, Sr. Associate Dean of Extension, introduced the BMP topic by giving a talk on the renaissance of the UF/IFAS soil fertility and nutrient management research. He also participated in the BMP research conversation led by Craig Frey, commercial vegetable extension agent. This roundtable discussion was specifically organized for snap bean growers and farm managers to discuss on-farm research funded by the Florida legislature for the purpose of studying the appropriate rate for applying fertilizer on tomatoes, potatoes, citrus, corn, and green beans. Over 70 people attended the event. A delicious ribeye steak lunch was prepared by the Hendry County Cattlemen's Association.

Educating stakeholders about invasive species having potential impact on Florida Agriculture is a major part of the Palm Beach County commercial vegetable extension program. In June 2022, over 50 participants attended the Florida First Detector Workshop co-organized with Dr. Amanda Hodges (FL First Detector Coordinator and Director of the Doctor of Plant Medicine Program at UF). Florida First Detector is a multiagency educational effort focused on enhancing the early detection of exotic, invasive pests that threaten agriculture, the nursery industry, and natural areas. The workshop focused on identification and management of pests of concern for sugarcane, rice, and leafy vegetables. We discussed first detections from different perspectives and actions following first detections. Possibilities of crop insurance and quarantine endorsements for impacted growers were also mentioned.

For all meetings and workshop Pesticide Applicator and CCA CEUs were provided to the participants.

I am looking forward to another productive growing season. Do not hesitate to contact me with any vegetable production related questions, including pest identification and management. You can find me in the Extension Office of the EREC Admin Building during the vegetable growing season or you can reach me via my email at [ameszaros@ufl.edu](mailto:ameszaros@ufl.edu). Follow me on Twitter @UF\_PBC\_VegFruit.





# Everglades REC: Retirement Updates

Dr. Ronald Cherry

Dr. Richard Raid

Congratulations to Dr. Ronald Cherry on his retirement! Dr. Cherry worked as an Entomologist at the Everglades REC for 39 years. He is an author of 160 refereed publications and/or book chapters.



Congratulations to Dr. Richard Raid on his retirement! Dr. Raid worked at the Everglades REC for 35 years as a plant pathologist. He is also responsible for the barn owl program at the University of Florida.





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[erec.ifas.ufl.edu](http://erec.ifas.ufl.edu)

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[UF IFAS EREC](#)

Thank you for reading the 2022 EREC Summer  
Newsletter!

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