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https://ifas.ufl.edu/covid19-information-updates/As of today,

December 4, 2020 GCREC remains closed to the public. Our research continues with a limited number of essential staff, and we are so grateful for their continued dedication. For information contact Christine Cooley <u>ccooley@ufl.edu</u>. Administrative staff is on site every day, so please call if you need assistance 813-419-6670.



Faculty Profile – 20 Questions with Dr. Vance Whitaker, Associate Professor for our Strawberry Breeding Program

This feature is to let you all know alittle more about our amazing faculty. So let's get started with some fun and revelvant answers from Dr. Whitaker.

Where were you born and what led you to Florida? I was born in Greensboro, NC and grew up in the small town of Oak Ridge. I came to Florida for my current job.

When did you first feel inspired to work in a science field? When as a kid in 4-H I did a lot of plant science experiments. I also grew pumpkins and sold them on the side of the road. Agriculture and science were both in my blood from a very early age.

What was your first paying job? I worked for a golf course cleaning range balls, sweeping, mopping, and any other dirty jobs that needed to be done. Thankfully they let me play for free because I was making less than \$5/hr!

What's your perfect pizza? Pepperoni and pineapple

When you were a kid, what did you want to be when you grew up? I always thought I would do something practical, like engineering or farming. I was mostly right!

When you're not working on your research, what do you enjoy doing? I serve as a pastor for my church, on a volunteer basis. I counsel and teach the Bible and do whatever else is needed to take care of the people. My wife Terri and my kids are also heavily involved, so it's something our whole family does together.

What's your go-to breakfast food? I love French toast.

Mountains or beach? Beach! I'm a Floridian now!



What are you most proud of? Probably that Terri became my wife about 16 years ago. I definitely "married up".

A hobby we might not know about? I play guitar. I usually play acoustic, but I have an electric now as well.

If you could back five years in your life, what advice would you give yourself? Think carefully about what things in life are distractions and what things are worthwhile in the long-term.

What is your main research focus right now? Within strawberry breeding, my main focus is always on developing the next best variety. But within that we are focusing a lot right now on understanding what makes a strawberry taste good, in terms of the specific aroma compounds and how we can increase or decrease them in the breeding process.

What is the best part about working at GCREC? The people.

What do you believe is the greatest challenge facing Florida agriculture today? The biggest challenge is foreign imports and how they have changed the market. Being competitive in a global economy is not just about harvesting the right quality at the right time, but also comes down to many other factor including labor availability and politics. It's a complicated problem.

How do you deal with negative emotions or stress? Mainly I try to be less self-focused.

PC or Mac? PC

What would you name the autobiography of your life? That's a tough one . . . maybe "Strawberries Will Save the World".

What is the most significant development you see coming out of your research area in the coming years? I hope that white strawberries, or "pineberries" as the industry is starting to call them, will become the fifth berry in the berry category, along with red strawberries, raspberries, blackberries and blueberries. For red strawberries, I believe quality will continue to go up. In other words, I think and hope our varieties will continue to taste better and better and last longer in your refrigerator.

If you could give just one piece of advice to GCREC students, what would it be? Integrity in your research is vital. Never cut corners or misrepresent your work in even the slightest way.

What is something you learned in the last week? I learned that Zhanao Deng's sterile lantana varieties bloom a lot in early October. I planted a few in my yard this summer, and they are looking very nice right now. Consider planting some of your own if you haven't already! I also learned last week that "kale" was a slang term for cash in the gangster era.



Candidate disease resistance and susceptibility genes identified for powdery mildew resistance in gerbera daisy

Zhanao Deng and Krishna Bhattarai, GCREC Environmental Horticulture

Gerbera daisy is among the top five most important flowers in the global floricultural trade. It is predominantly grown as cut flower and increasingly as garden, bedding, patio and indoor

plants. Powdery mildew is the most common and devastating disease in gerbera. The pathogen infects gerbera flowers, leaves and other plant parts, rapidly developing unsightly white powdery matt on the plant surfaces. Development and use of resistant varieties are considered to be a cost-effective, environmentally friendly strategy to control powdery mildew in gerbera and other

plants. In this study, we screened gerbera breeding lines, selected those with contrasting resistance phenotypes to powdery mildew, and sequenced millions of gene transcripts in gerbera leaves. We revealed genome-wide gene expression differences in gerbera in response to powdery mildew pathogen infection and identified 36 disease resistance gene transcripts and four disease susceptibility gene transcripts associated with gerbera resistance or susceptibility to powdery mildew. These gene transcripts can be



highly valuable genomic resources for developing molecular markers to aid rapid screening of gerbera breeding populations for powdery mildew resistance and development of multiple series of new resistance gerbera varieties. Some of the gene transcripts may serve as candidate genes for genetic mapping and molecular cloning of resistance gene(s) controlling the strong resistance in University of Florida-bred gerbera varieties. The susceptibility gene transcripts were expressed or highly expressed only in the powdery mildew-susceptible gerbera lines. These gene transcripts may help us gain a better understanding of the roles of *MLO* genes in gerbera, and they may provide targets for genome editing and gene knocking out for improving gerbera resistance to powdery mildew.



GCREC Food and Toy Drive Starts this Week

Each Holiday Season the faculty and staff always do what we can to help those less fortunate, and this year more people than ever are in need. Our donations benefit Metropolitan Ministries in the Tampa Bay Area. They are requesting cereal, yams, soup, gift cards, teen girl and boy gifts for Christmas (age 13-17) are the most-needed items right now. Canned meats, canned vegetables, canned fruits, rice, pasta, canned or boxed potatoes, stuffing, gravy, and dessert mixes are also in high demand. We also collect cash and with these funds, they will purchase turkeys and hams for those families in need. For this year we're collecting toys to get kids moving – sporting equipment like basketballs, footballs, etc. hula hoops, jump ropes, you get the idea. We'll keep you updated on our efforts. For those of you who are interested in donating cash, Fox 13 News in Tampa is matching all donations of \$13 or more. Follow this link and click the Donate Now button. <u>https://www.metromin.org/</u>



GCREC Faculty Staff and Students bring in the Donations for Honduras Hurricane Relief Effort

Led in part by David Moreira, GCREC Nematology grad student, a U-Haul truck delivered all our donations along with donations from the main campus, USF, Univ. of Tampa, and points in between. We are so grateful to all of you who took the time to pick up items to help those in need. **Health News FACT CHECKED** Experts say if 95 percent of people wore a face mask, it could save nearly 130,000 lives between now and March 1. They add that mask wearing could help businesses stay open as COVID-19 cases are reduced. The Centers for Disease Control and Prevention (CDC) now says wearing a mask also protects you, not just the people around you. In an updated scientific brief released last week, the CDC says it has confirmed seven studies that show wearing a mask also protects the person wearing it. And the report says by wearing a mask, you can help protect the economy, too. The CDC says a data analysis shows that just a 15 percent increase in mask wearing could prevent the need for lockdowns and help reduce economic losses up to \$1 trillion. A new study published in the journal Aerosol Science and Technology suggests that a simple cloth mask can be quite effective. UCLA researchers reported that a cough could send particles more than 6 feet away without any face covering. But a two-layer cloth mask reduced cough particles by 77 percent. It's SCIENCE and you can't deny the facts and history of this virus as we have all witnessed the effects over the past 7 months. Be Safe, Be Smart – Wear a Mask!

Grad Student Update - Hello from Babu Panthi!

Received an email from an old friend recently – Babu Panthi, former grad student in Dr. Sriyanka Lahiri's lab. He sent this photo and update along with an infographic on "chilli thrips management in strawberry" noted below and was recently presented at the annual meeting of entomology. Check out these stunning images of Corvallis, Oregon where he is doing postdoctoral research at Oregon State University. It is so beautiful there, mountains, fall colors! During his postdoc, he will be studying two lepidopteran pests to develop their management options in grass seed crops grown in Oregon.



Biology and management of chilli thrips in strawberry

Babu Panthi panthibabu@ufl.edu 765-430-6864 FLORIDA

OCCURRENCE IN FIELDS

Adult chilli thrips immigrate in to strawberry fields from nearby crops or vegetation starting as early as overhead irrigation is terminated. Feeding injury symptoms: Bronzed and darkened leaves.

MOVE SLOWLY BETWEEN PLANTS

TOLERANCE

PLANTS TOLERATE SLIGHT FEEDING INJURY

Plants compensated for a 10-30% injury caused by initial two adults or larvae per trifoliate when treated with Insecticides Thus, insecticide applications can be delayed for two weeks if the chilli thrips population is below an action threshold of two adults or larvae per trifoliate.

CONTROL DECISION

SAMPLE NEWEST LEAVES AND COUNT THRIPS

To make a decision, collect min. of 4 and max. of 27 sampling units (one sampling unit = 10 strawberry trifoliates). If total thrips counts > upper limit: treat, if between upper and lower limit: continue sampling, and if < lower limit: do not treat and resample in two weeks.

Sequential Sampling Plan			
	Sampling units	Lower limit	Upper limit
	4	6	154
	5	17	183
	26	331	540
	27	540	540

MANAGEMENT WITH INSECTICIDES

FOLLOW THE LABEL AND ROTATE INSECTICIDES

Spinetoram is the most effective. Flupyradifurone, acetamiprid, and cyantraniliprole are fairly effective.







Recent GCREC Pubs and Videos

Dr. Shinsuke Agehara, Virtual Hop Yard Tour https://youtube.com/playlist?list=PL4qrjj3jZ6i57aJHMbAgccdHDleJ4TZ4f

Agehara, S., S. Lin, and L. Kang. 2020. Strawberry production and markets in Taiwan: Challenges, trends, and outlook. International Journal of Fruit Science. doi: 10.1080/15538362.2020.1851340

Maity, A., M. Khayyat, F. Azarmi-Atajam, S. Agehara, and A. Sarkhosh. 2020. Soil and nutrition, p. 285-319. In: A. Sarkhosh, A.M. Yavari, and Z. Zamani (eds.). The pomegranate: Botany, production and uses. CABI, Oxfordshire, UK.

Bhattarai, K., A. Conesa, S. Xiao, N.A. Peres, D.G. Clark, S. Parajuli and Z. Deng. 2020. Sequencing and analysis of gerbera daisy leaf transcriptomes reveal disease resistance and susceptibility genes differentially expressed and associated with powdery mildew resistance. BMC Plant Biology 20:539 (<u>https://bmcplantbiol.biomedcentral.com/articles/10.1186/s12870-020-02742-4</u>).

EDIS Pubs from Dr. Natalia Peres' Lab:

https://edis.ifas.ufl.edu/pp357

https://edis.ifas.ufl.edu/pp359

And now for some giggles...

