



Shades of Green

Athens-Clarke County Agriculture and Natural Resources E-Newsletter

May 2021

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A note from Athens-Clarke County Agriculture & Natural Resources

Hello readers! Hopefully this newsletter finds you all well. Spring is already flying by. We have some fun events and opportunities we are looking forward to sharing with you all this month. One that we find especially exciting is International Compost Awareness week (May 2-8, 2021). Make sure to check out the [“Stay in the Loop!”](#) page of this newsletter to find out how to get involved with the various events going on in Athens during this week (one including a local compost sale!!). Our [Green Thumb Lecture](#) for this month will be discussing composting and is in partnership with ACC Solid Waste Department in celebration of International Compost Awareness Week. Details and the link to register will be in the flyer later in this issue.

We will be having our [2021 Smoked Boston Butt Sale](#) just in time for your Memorial Day weekend plans! Ordering is available now until May 21. Make sure to check out the flyer later in this issue to see the new additional casseroles available to order as well. Have a great month of May!

We hope you enjoy this month's issue of “Shades of Green”.

Take care,

Athens-Clarke County Agriculture and Natural Resources



Billions of periodical cicadas and their songs set to fill the spring air

By Sean Montgomery

It has been 17 years since a set of billions of periodical cicadas emerged from their underground chambers and filled the air with boisterous buzzing and desperate mating calls. Brood X (pronounced ten), the largest emergence of the dozen periodical broods, makes its highly anticipated return just in time to shake up the spring in various regions spanning from northern Georgia all the way to Pennsylvania.

"The average person only gets about four or five opportunities during their entire lifetime to experience Brood X," said Nancy Hinkle, cicada enthusiast and professor of veterinary entomology at the University of Georgia College of Agricultural and Environmental Sciences. "It is just amazing that you have this large number of the same species of insect emerging at the same time."

However, most Georgians will have to travel north to experience the phenomenon.

"Tracking them down is going to be very challenging (for Georgians)," said Hinkle. "We are estimating that they are only going to emerge in about 10 counties and in the very northeastern part of the state. Even then, there may only be a few spots where they can really be noticed."

Safe and 'sound'

Although they arrive in large numbers throughout a short six-week span beginning in May, cicadas are harmless to humans and pets. In fact, one of the only dangers of encountering the species is overconsumption by animals.

"They don't bite, they don't sting and they're not poisonous," said Hinkle. "Even kids can catch and handle the clumsy flyers."

With warmer weather and more sunlight during the day, families in search of Brood X have a chance to get out in the woods and experience



this unique opportunity together — if they can stand the brood's loud noise.

Most of the seemingly endless vibrations and buzzing that fills the air comes from males serenading their potential mates with an echoing chorus that must be

louder than their competition. The females then echo back with clicking sounds generated from their wings.

Fortunately, most of these exchanges only take place during the day — making them less of a nuisance during more quiet hours.

Restarting the cycle

Cicadas live in underground burrows for 16-and-a-half years before emerging to breed, lay eggs and then die.

"The only time they are above ground is for about six weeks," said Hinkle. "They don't feed as adults, so they are only using the energy that they stored when they were underground."

While burrowing up from the soil, cicadas bring large concentrations of nutrients back to the surface, aiding plant growth and becoming food for various animal populations.

At first, the pale-colored cicada population arrives without wings before shedding thin exoskeletons that can be found latched onto trees and scattered throughout yards.

One of the most recognizable features of living cicadas is their dazzling red eyes.

"Annual cicadas are the ones that come out every year and the ones we see around here are greenish in color," said Joseph McHugh, a professor of entomology and curator at the **Georgia Museum of Natural History** at UGA. "But the periodical cicadas are black cicadas with red

[\(Continued on page 6\)](#)



UGA student investigates why modern tomatoes have lost their flavor

By Austin Clark

Why have tomatoes lost their flavor? Why do some dishes call for ketchup when cooking with tomatoes?

These are a couple of the questions that Qian Feng, a second-year University of Georgia College of Agricultural and Environmental Sciences doctoral candidate, seeks to answer through her research.

Feng, a member of **Professor Esther van der Knaap's plant biology lab** in the UGA Institute of Plant Breeding, Genetics and Genomics, grew up in China, the world's top producer of tomatoes. Many traditional Chinese dishes include tomatoes as a main ingredient, but Feng recognized a confusing trend.

"More often than not, my family had to add lots of extra condiments to bring the right 'tomato' flavor out," Feng explained.

Dissatisfied with the bland flavor profile, Feng began investigating the evolutionary history of the tomato in order to uncover any traits that could explain the loss in taste. She found that through selective breeding to increase the size and outer protective shell — in addition to breeding disease resistant varieties of tomatoes — farmers and producers created a less intense tasting and less nutritious tomato.

The key to measuring and increasing the taste of a tomato lies in its chemistry, more specifically

the amount and type of chemicals, or volatiles, present in the food.

"To link different volatiles to actual consumer preference, we cannot rely simply on the measured value. We need to have a taste panel so that the human perception of flavor can be taken into account," Feng stated.

Using research from Denise Tieman and Harry Klee at the University of Florida, who have spent years collecting volatile data along with taste panel evaluations from over 100 tomato varieties, Feng was able to map additional genes responsible for volatile production in order to offer a more complete picture of the biochemical pathways in tomatoes.

Although further research in the van der Knaap lab will not focus on selective breeding to increase the amount of identified volatiles in tomatoes, Feng hopes that her results can be used by other breeding labs and facilities to introduce the desirable genes into current or new tomato varieties.

This research was funded by the National Science Foundation grant IOS 1564366. For more information about research in the Institute of Plant Breeding, Genetics and Genomics, visit **plantbreeding.caes.uga.edu**.

(Austin Clark is a Georgia 4-H public relations associate)



Your lawn could help save the bees

By Maggie Narvil

Over the past few decades, pollinators have been in decline worldwide, which is concerning because 70% of crops used for human food depend on pollinators. Turfgrasses – used for most residential lawns – often take some of the blame for pollinator decline as they are known to be wind-pollinated and were thought not to serve as a pollinator food source, until now.

University of Georgia and U.S. Department of Agriculture researchers identified bees that were collecting pollen from the flowers of a turfgrass called centipede grass. The researchers have been looking for ways to reverse the decline of pollinator populations by examining centipede grass as a food source for pollinators, with hopes of normalizing low-maintenance, bee-friendly lawns. Their findings have been published in the **Journal of Entomological Science** and **Insects**.

The study was led by College of Agricultural and Environmental Sciences faculty Shimat Joseph and David Jespersen on the UGA Griffin campus alongside USDA researcher Karen Harris-Shultz in Tifton.

“Insect pollinators are frequently described in the media as needing help and homeowners may not realize that their lawns could help these insect pollinators. They also may be applying insecticides to their centipede grass lawns and may not realize they may be harming bee populations,” said Harris-Shultz, a USDA research geneticist.

The long-term goal of the study is to promote bee-friendly grasses. Some types of turfgrasses require large amounts of water and fertilizer, and homeowners often use insecticides and herbicides to control

insects and weeds, but centipede grass is low maintenance by comparison. It is used for lawns, parks and golf course roughs and is well-adapted to the sandy, acidic soils of the southeastern U.S. Now, researchers like Joseph and his team are realizing centipede grass is useful for much more.

“The knowledge that centipede grass lawns can be beneficial to pollinators is a complete change in thought about turfgrasses,” Harris-Shultz said.

“There is an environmental benefit to growing centipede grass as it does require minimal care. Additionally, by providing a food source to bees, these bees may pollinate other economically important crop plants.”

Evaluating pollinators

The study consisted of two parts: identifying which pollinators are present on centipede grass lawns and finding which of those pollinators are directly collecting pollen from the flowers.

In the first study, samples collected from mowed and unmowed lawns that had no prior exposure to insecticides in central and south Georgia consisted of 173 bees belonging to 13 genera.

This suggests that a diverse mixture of bees are residing on lawns.

The goal of the second study was to determine which pollinators are feeding on the flowers of centipede grass, Jespersen said. Centipede grass produces spike-like flowers from August through October. Eleven lawns were sampled in 30-minute intervals, and if a pollinator was observed collecting pollen from the flower, it was caught in a special trap and identified in the lab.

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Your lawn could help save the bees (continued...)

“We have found that 13 genera of bees are present in centipedegrass lawns and five genera of bees directly collect pollen from centipedegrass,” said Joseph, assistant professor in the **department of entomology**. “Here we show that a turfgrass — centipedegrass — serves as a source of pollen for sweat bees, bumblebees and honeybees.”

The results of the research imply that low-maintenance turfgrasses can be utilized as a valuable ecosystem habitat useful in critical bee conservation. Knowing that pollinators use centipedegrass flowers as food is the first step toward adopting non-disruptive lawn practices that encourage bee foraging.

“In the popular press, there’s this idea that turfgrasses are ecological deserts and do not provide any ecosystem services, so this research is interesting for showing that there are pollinator species that interact with turfgrass species,” said Jespersen, assistant professor in the **department of crop and soil sciences**.

Looking forward

Joseph, Harris-Shultz and Jespersen agree that expanding this research over time will negate misinformation about turfgrasses and eventually lead to the development of bee-friendly lawns.

The next step is determining how to enhance centipedegrass to make it even more useful for bees

while maintaining its low-input growing patterns. Many factors, such as coloration of the flowers, time of year and the ecology of the bee, should be considered, Joseph said.

“We have a couple of projects already planned,” Harris-Shultz said. “One is to use metabarcoding to identify all the insects in direct contact with centipedegrass flower heads. Another is examining if the ploidy (number of chromosomes) of centipedegrass impacts pollinators, or if certain genotypes are preferred.”

The importance of maintaining bee habitats has become undoubtably clear. Bees require nectar and pollen in order to continue to play their critical role in our ecosystem, supporting the growth of trees, flowers and other plants that serve as food and shelter for various creatures, including humans.

“Our research will help us to have lawns with improved benefits, which take into consideration ecological aspects beyond the aspects normally attributed to lawns,” Harris-Shultz said.

Funding for this research project was provided by the USDA-Agricultural Research Service. To learn more about CAES research, visit **caes.uga.edu/research**.

(Maggie Narvil is an agricultural communication student at the University of Georgia)

Billions of periodical cicadas and their songs set to fill the spring air (continued...)

eyes that have these very long life spans, and they are out of sight for most of their lives.”

Following the six-week period, all of the Brood X cicadas will have lived out their lifespan and set the next cycle in motion with the dispersion of eggs in tree branches. Shortly after, new nymphs will hatch, fall to the ground and burrow under the soil.

A piece of history

When the Brood X cicadas emerge, researchers and collectors at UGA’s Georgia Museum of Natural History plan to expand their collection of over 2.2 million arthropod specimens.

Members of the public are encouraged to share their captures with the museum for documentation and proper identification, creating a historic record of involvement in the **UGA Collection of Arthropods**.

To ensure proper credit and record keeping, information such as location and time are especially helpful. Insects can be captured, sun-dried and shipped to the museum in a small, sturdy box or photographs can be emailed to insects@uga.edu. The small window researchers and historians have to study the brood makes public contributions of even greater value.

For more information on periodical cicadas, see the **active map of U.S. broods**. Find more resources from the UGA Department of Entomology at **ent.uga.edu**. You can also **watch a video on Brood X** created by the University of Georgia’s College of Agriculture and Environmental Sciences.

(Sean Montgomery is a public relations coordinator for the University of Georgia College of Agricultural and Environmental Sciences)

Athens-Clarke County Extension
Virtual Green Thumb Lectures
2021 Free Monthly Gardening Class Series



May: Composting

Please join us online for an informative presentation on topics including:

- Basic concepts and importance of efficient composting
- Materials for composting
- Recommended structures and methods

Gardeners of all experience levels are welcome.

WHEN:

Wednesday, May 5 · 6:00-7:30 pm

WHERE:

ONLINE via Zoom.com

Specific link to join Zoom meeting will be sent to the email you register with.

TO REGISTER:

Registration is required. Please register by May 4 by visiting

www.accgov.com/gardening

For questions:

Contact Laura Ney, Extension Agent at
706-613-3640 or lney@uga.edu

*The University of Georgia is committed to principles of
equal opportunity and affirmative action.*



Stay in the loop! (local or online activities and events)

UGA Dougherty County Extension Spring Gardening and Lawn Maintenance Series Webinars

Tuesday, April 6: Home Vegetables

Tuesday, April 13: Floral Container Gardens

Tuesday, April 20: South GA Lawn Care

Tuesday, May 4: Landscape Herbs

From 6:00pm-7:00pm

To register, please visit [Spring Horticulture Series Registration 2021](#)

The UGA Honey Bee Lab upcoming 2021 Virtual UGA / Young Harris Beekeeping Institute

An educational event Thursday - Saturday, May 13 - 15, 2021 that meets the needs of everyone: experienced beekeeper or complete beginner. Please [visit their website](#) for updates soon on program and registration information.

International Compost Awareness Week events in Athens, Georgia

May 2-8, 2021

Celebrate by joining events going on throughout the week including tours, videos, stories for soils, and a compost sale! For more details visit the

[ICAW Athens Website](#)

Marigold Farmers Market Grand Opening in Winterville, Georgia

Saturday, May 8 from 10am-2pm

at Pittard Park

(115 Parkview Road, Winterville, GA 30683)

Live music by Mayor Dodd Ferrelle



accgov.com/h2grow

We take the guesswork out of creating a water-efficient garden with our **H2GrOw Water-Wise Native Collections.**

Professionally designed landscapes combine native perennials with an easy "plant by number" guide for installation. The gardens are perfect for residents looking to incorporate drought-tolerant plantings to replace turf or add color to your yard.

Pick up a H2GrOw Native Collection at Cofer's Home & Garden Showplace. Their plant experts can help you gather the specific plants for your chosen H2GrOw Collection. **Cofer's offers 20% off** the purchase of a complete H2GrOw collection in May. Look for additional \$10 coupon in your WaterSource newsletter.*

*Please see discount details at [accgov.com/h2grow](#)



Painted Piedmont

Water-Wise Native Collection



Sunny-side Selection

Water-Wise Native Collection



Shady Sanctuary

Native Collection

Visit Cofer's & ask about the H2GrOw Collections.



Local Farmers Markets



The **Athens Farmers Market** is taking place on Saturdays from 8am-12pm at Bishop Park. Make sure to visit [their website](#) for updates and details.

Find them on Facebook: [@AthensFarmers-Market](#)

Follow them on Instagram:
[@athensfarmersmarket](#)



West Broad Farmers Market

Online ordering with pick-up and delivery options are available on Saturdays.

Visit [their website](#) to find out how to order online.

Find them on Facebook:
[@WestBroadMarketGarden](#)

MARIGOLD



MARKET

Are you interested in the new **Winterville Farmers Market**? Online ordering with pick-up options available now.

Visit [their website](#) to order online.

Find out more on Facebook:
[@marigoldmarketwinterville](#)

Instagram: [@marigoldmarketwinterville](#)

**Order Now for
Memorial Day**

*Don't miss out!
Limited quantity
available!*



**\$35
8-9 lbs.**

to benefit the Demonstration & Training Garden
at the new ACC Extension Office

**To ORDER Your Smoked Butt, Sides
and Casseroles**

Call in your credit card order to ACC
Extension Office, 706-613-3640,
Monday - Friday, 8am - 5pm

OR

Mail a check, made out to
ACC Extension, to
ACC Extension Office
275 Cleveland Road, Bogart GA 30622

OR

Drop Box deposit Check and Order
Form in box located
on storage building wall behind ACC
Extension Office

**To PICK UP Your Smoked Butt, Sides
and Casserole**

Saturday, May 29 ONLY, and ONLY 10
a.m. to 1 p.m.
Parking Lot of **Saucehouse BBQ**
830 W. Broad St., Athens - one block
from Varsity

Orders must be
received no later than
Friday, May 21

**[Order Form on ACC Extension
website](#)**

Question? Call/Text/Email
*John Aitkens UGA Master
Gardener Extension Volunteer*
706-255-0998
aitkensj@gmail.com



*Athens Area
Master Gardeners*



Join Athens-Clarke County 4-H!



Students in 5th - 12th grades in Athens-Clarke County can sign up for 4-H now. The mission of Georgia 4-H is to assist youth in acquiring knowledge, developing life skills, and forming attitudes that will enable them to become self-directing, productive and contributing members of society. 4-H meetings will look different this year and are online. There is no charge to be a member or participate in a competition.

To start your 4-H Adventure e-mail the ACC 4-H Agent, Elizabeth Conway, at ebarber@uga.edu today!



Virtual 4-H Programs can be viewed on the ACC 4-H website:

<https://tinyurl.com/acc4hvirtual>

The University of Georgia is committed to the principles of equal opportunity and affirmative action.





Concerned about the state of your garden?

Are weeds taking over your landscape?

No need to fear, Clarke is here!



Follow @gardenwithclarke on Instagram and learn how to battle pests, identify weeds, build your soil and so much more as you garden alongside Clarke, Athens-Clarke County's super gardener!



gardenwithclarke
UGA Extension Athens-Clarke County



Helpful resources online:

[Find My Local
Extension Office](#)

[Bugwood— Pest
Images](#)

[Landscape Alerts
Online](#)

[Pest Management
Handbook](#)

[Georgia Turf](#)

[Free Online
Webinars](#)

[Pesticide Applicator
Info](#)

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Athens-Clarke County Extension Agriculture and Natural Resources

Mission Statement

The UGA Athens-Clarke County Extension's mission is to respond to the people's needs and interest in Agriculture, the Environment, Families, and 4-H/youth in Athens-Clarke County with unbiased, research-based education and information.

Visit us online:



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