



Shades of Green

Athens-Clarke County Agriculture and Natural Resources E-Newsletter

April 2022



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A note from Athens-Clarke County Agriculture & Natural Resources

Hello readers and happy April! In this edition of Shades of Green we jump right into Spring. We enjoy providing you all with timely articles, events and information to satisfy your interest in gardening, farming, homesteading, etc. We hope you enjoy this month's content and we look forward to sharing more with you this year!

Upcoming 2022 Green Thumb Lectures

Wednesday **April 13th**, Flowering Bulbs

Wednesday **May 11th**, Composting

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

Take care,
Athens-Clarke County Agriculture and Natural Resources



Protect Backyard Flocks from Avian Influenza

By Carly Alyse Mirabile for CAES News

According to the [Centers for Disease Control and Prevention](#), new outbreaks of avian influenza (flu) have been detected in U.S. aquatic birds, commercial poultry and backyard flocks since January. Although avian influenza is not a threat to human health or food safety in Georgia, avian flu presents a risk to all poultry operations, from hobbyist flocks to the state's \$22.8 billion commercial industry.

The key to preventing the spread of the disease is [biosecurity](#). Often heard but frequently misunderstood, biosecurity refers a set practices that all poultry owners should know and implement to protect their poultry flocks from disease.

Birds that are raised under pastured or free-range management systems need added attention due to birds' increased exposure to environmental disease sources. Symptoms of avian flu can be found at preventai.uga.edu.

[What is biosecurity?](#)

Biosecurity is the practice of minimizing the spread of disease into a flock of birds or, in the event of disease occurrence, preventing the spread of disease-causing organisms off the premises. This is accomplished through practical, common-sense prevention measures.

Common routes of infection

- Exposure to diseased birds, either wild or from purchased stocks of questionable origin
- Introduction of healthy birds who have recovered from disease but are now pathogen carriers
- Shoes and clothing of visitors or caretakers who have been in contact with other birds
- Use of borrowed equipment that is contaminated with disease organisms

Rodents, insects and free-flying birds gaining access to feed sources

Of all the possible breakdowns in biosecurity, the

introduction of new birds into an existing flock and contaminated foot traffic pose the greatest risks to bird health. Properly managing these two factors should be a top priority for poultry owners.

[Know the Warning Signs of Avian Flu](#)

Of all the possible breakdowns in biosecurity, the



introduction of new birds into an existing flock and contaminated foot traffic pose the greatest risks to bird health.

Early detection is important to prevent the spread of disease. Look for changes in eating, drinking, behavioral habits, and for signs and sounds of respiratory distress.

- Sudden increase in bird deaths
- Sneezing, coughing and nasal discharge
- Lack of energy and poor appetite
- A drop in egg production or an increase in soft - or thin-shelled eggs
- Swelling around the eyes, neck and head
- Purple discoloration of the wattles, combs and legs
- Tremors, drooping wings or twisting of the head and neck

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Disease prevention practices

Because of the destructive potential that a contagious poultry disease could have on the commercial industry and small flocks alike, poultry owners are encouraged to adopt the following:

- Prevent wild birds, particularly waterfowl, from mingling with the flock. This may require penning poultry during times of heightened concern for the spread of avian influenza.
- Avoid contact with other birds and flocks, particularly birds with questionable origin, such as auctions and live bird markets.

Purchase new stock from reputable dealers, preferably those that participate in the [National Poultry Improvement Plan](#). New birds represent a greater risk to biosecurity because their disease status is often unknown. These birds may have an infection or become susceptible to an infection that is already present in birds that appear healthy in the existing flock.

- Quarantine all new birds away from the existing flock for at least three weeks. This will help identify birds recently exposed to disease, although it will not identify those that have previously been sick and have recovered and continue to shed pathogens. Sick birds that survive such viral disease become carriers of the virus and can infect unexposed birds.

- Wear dedicated footwear that can be sanitized after every visit when attending to birds. Disinfectant footbaths may help to decrease the dose of organisms on footwear that can be tracked into poultry enclosures.

Do not share equipment, tools or poultry supplies with neighbors or other bird owners. If you do bring these items home, clean and disinfect them before they reach your birds.

If your birds are sick or dying, call your local [University of Georgia Cooperative Extension office](#) or the [Georgia Poultry Laboratory Network](#) located in Gainesville. Experts in these offices can use a disease diagnostic questionnaire to help identify the severity and level of concern over the symptoms your birds are experiencing.

During this time of heightened concern over the threat of avian influenza, vigilance is warranted for backyard poultry keepers and commercial growers alike.

To report a case or ask questions, contact the avian influenza hotline at the Georgia Department of Agriculture by calling 770-766-6850.

For more on avian influenza, visit

preventai.uga.edu



Research in Plant Genomics is answering Big Biological Questions

By Jill Hamilton for CAES News

Robin [Buell joined the University of Georgia](#) faculty in fall 2021, there's been a flurry of activity in [her lab](#). Buell and her researchers



Robin Buell, whose research focuses on plant genomics and bioinformatics, working in a plant growth chamber. (Photo by Dorothy Kozlowski/UGA)

have nine projects underway in plant genomics — and Buell has already secured millions of dollars in federal funding. This complex, very exacting work — begun in 1999 when Buell began sequencing plant genomes — has led to wide-ranging breakthroughs across a variety of fields, including medicine, farming and energy production. Her research has laid the foundation to boost worldwide food supplies through improving crop yields and plant hardiness, increase the biofuel potential of bioenergy crops, and harness the inherent power of plants to product healing substances.

“At least a third of all pharmaceuticals either come from a plant or they're originally found in a plant and are now chemically synthesized,” said Buell. “Now we have all the tools so that we can figure out very quickly in relative time how the plant makes these compounds.”

Accelerating Research for Cancer Medication

Buell, who is the Georgia Research Alliance Eminent Scholar Chair in Crop Genomics in the [College of Agricultural and Environmental Sciences](#), has more than \$4 million in federal funding — contributing to the 65% increase in the National Institutes for Health and National Science Foundation expenditures at UGA over the past six years.

Right now, her lab is at work on Madagascar periwinkle, commonly known as vinca, a small ornamental plant. An extract from the plant is used to produce anti-cancer drugs and the process is currently extremely expensive. “Very little amounts of it are produced in the plant, and it's a very complex compound, so it can't be synthesized,” she said.

Buell and her team are on the cusp of finalizing exactly how that compound is made, a game-changing discovery that was 13 years in the making, a process she said would now take only about two years.

“Advances in technology now allow us to do biology with precision,” she said. “You can make plants environmentally sustainable, produce crops to address food and nutrition deficiencies in crops, and you can do it so much faster. What people once took 100 years to do, we can do to almost any crop in less than 10 years, if not five.”

Sequencing the Rice Genome

Buell is a true pioneer in the field of plant ge-

nomics. Back in 1999, Buell started her groundbreaking work on sequencing the rice genome as an investigator at The Institute for Genomic Research. “Other than the sequence of mouse ear cress, a model for genetic studies, there were no plant genome sequences,” said Buell, on the impetus for the research. “The thought was that half the people in the world get most of their calories from rice every day, and by having access to the genome, the DNA sequence, we could improve rice and breed it better.”

That work led to a stint at Michigan State University where she was a University Distinguished Faculty and MSU Foundation Professor of Plant Biology from 2007 until 2021. She worked on a wide variety of projects including understanding the genome of tepary bean, which is heat-, drought- and pest-resistant, to using genomics to increase the biofuel potential of switchgrass by improving the crop’s ability to survive winter.

Since arriving at UGA, Buell has kept up the pace. She’s already been [selected as the recipient of the prestigious 2022 McClintock Prize by the Maize Genetics Cooperation Advocacy Committee](#) for her groundbreaking work in plant genome structure, function and evolution. An expert in comparative genomics, bioinformatics and computational biology, Buell’s also sharing her research and collaborating with colleagues around the world. “Robin has the rare ability to translate state-of-the-art genomics technologies to answer hard biological and biochemical questions,” said Sarah O’Connor, director of the Department of Natural Product Biosynthesis at Max Planck Institute for Chemical Ecology in Germany.

O’Connor has been collaborating for 10 years with Buell long distance on *Catharanthus roseus*, a medicinal plant that makes the anti-cancer agent vinblastine. “We could not have elucidated the pathway without Robin. Robin and her group gave us access to high quality transcriptomic data at a very early stage, allowing us to be ‘ahead of the curve’ in this highly competitive field.” The two are currently working on more projects. “I think in the coming year we are going to have some very exciting stories to tell,” O’Connor said.

[Seeking Answers from Agriculture](#)

And Buell just received a new grant that’s she’s already putting to use.

“We’re trying to make tomatoes that can make some very high-value chemicals,” said Buell. “These chemicals — one is an antimicrobial and the other one is an anti-insecticidal, or mosquito-cide — cost a lot of money per kilogram, are hard to naturally extract from natural sources and you can’t chemically synthesize them,” said Buell. One of these compounds has traditionally come from trees, which only grow in certain parts of the world and take time to grow. “If you could just get a tomato fruit to make it, you can grow these anywhere anytime in a greenhouse,” said Buell.

Buell’s passion is fueled by finding these kinds of solutions. “I’m looking for interesting biological questions that my skills and expertise can answer that we couldn’t answer before,” she said.

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Research in Plant Genomics (continued...)

Buell's scientific curiosity extends to potential gene-editing efforts in staple crops. "What we're asking right now is 'How over the course of evolution did some plants have the ability to make a tuber and others didn't?'" Besides being an interesting intellectual exercise, the work could have big, real-world repercussions. Because tubers — the fat root part on plants like potatoes — are underground, they have an inherent ability to overwinter and stay protected from drought and other stresses. If Buell's team can figure out how this

happened evolutionarily, this knowledge could be used in re-engineering other plants.

UGA is fortunate to have Buell onboard and she is quite happy to be here. "I'm from Michigan, and I believe it's snowing there today," she laughed. But it's clear that it's not just lack of snow that brought her to UGA. "There are just so many opportunities here. They're making big investments in their research and it's clearly a university that has momentum."

Sweet Potatoes are More than Just a Side Dish By Josh Fuder for CAES News

One of the things I appreciate most about food gardening is the history, geography and culture that can be discovered through the plants we choose to cultivate. When I finished college, I spent three years as a Peace Corps volunteer on the small, remote island of Ambae in Vanuatu in the South Pacific. Their staple crops — taro, yams, cassava and starchy bananas — took some getting used to for me. But their "kumala," or sweet potato, was a welcome reminder of home.

The sweet potato (*Ipomoea batatas*), which is in the morning glory family of plants, is believed to have originated in Central or South America at least 5,000 years ago. Christopher Columbus observed native peoples in Central America and the Caribbean growing the crop and enjoyed them so much that he took some back to Europe on his fourth and final voyage.

The famous explorer Hernando de Soto noted Native Americans growing sweet potatoes in his records from the 1500s. Sweet potatoes were likely one of the first staples early colonists were introduced to in the Southern colonies. It is unlikely, however, that they were on the menu at Plymouth because they require a long, warm growing season that limits their growing range.

The presence of sweet potatoes in the South Pacific predates my time there, with some studies indicating cultivation as early as 1200 A.D. How they arrived there is truly one of the greatest mysteries in human history.

There is relative consensus among anthropologists that the migration of Austronesian peoples — which includes the three primary ethnic

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Sweet Potatoes are more than just a side dish (continued...)

groups of Micronesian, Melanesian and Polynesian — happened in an eastward direction. The expert navigators used outrigger-type sailing canoes and their mastery of currents, wind patterns and the stars to travel from Taiwan and Southeast Asia through the larger islands of Indonesia and New Guinea to the remote outposts of Hawaii, New Zealand and Easter Island.

If the people came from west to east, how did the sweet potato travel east to west from South America? This was what legendary Norwegian adventurer and ethnographer Thor Heyerdahl set out to prove with his Kon-Tiki expedition in 1947. Heyerdahl's theory is that Polynesia was populated via South America. He based this theory on Incan legends merged with a Dutch explorer's journal from the 1700s, the westward movement of the trade winds, and the presence of sweet potatoes throughout the Pacific. To prove his theory, Heyerdahl and five adventurers set off from Peru on a raft made from balsa wood and native materials and washed up on a reef in French Polynesia after 101 days and 4,300 nautical miles. Despite completing the voyage, his theory of Polynesian origin has been widely criticized and has not gained acceptance within the academic community. So the mystery of the Pacific sweet potato remains.

Incan legends and Norwegian adventurers aside, sweet potatoes are an easy-to-grow addition to Georgia gardens. I was a little adventurous in the garden this year and ignored the standard varieties like 'Beauregard' and 'Georgia Jet'. As reliable

and tasty as those varieties are, I was looking for more color and variety. Instead I grew 'Bonita', which has a light tan skin and white flesh and produces high yields of medium to large roots. 'Murasaki' is a purple-skinned, white-flesh variety that has a distinctive nutty flavor. I found 'Murasaki' interesting enough but will probably need to give it another year with better growing conditions before deciding its fate in future gardens. I tried a purple-skinned and -fleshed variety but with lower yields of long narrow roots. I will probably pass on it in the future. I also tried 'Burgundy', which has a nice, burgundy-colored skin and deep orange flesh similar to 'Beauregard'.

Maybe your discussions over the sweet potato side dishes this holiday season will solve the mystery of how the sweet potato made it to the Pacific. To learn more about growing sweet potatoes in a home garden, see University of Georgia Cooperative Extension Circular 1014, "Home Garden Sweet Potatoes," at www.extension.uga.edu/publications



Athens-Clarke County Extension
Virtual Green Thumb Lectures
2022 Free Monthly Gardening Class Series



April: Flowering Bulbs

Please join us online for an informative presentation by Cliff Brock, who will share his experience and photos from his garden in Hillsboro, Georgia. He will cover topics including:

- Bulbs to choose for Georgia– from heirlooms to the rare and unusual
- Which species/cultivars are best & how to grow them.

WHEN:

Wednesday, April 13th, 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 April 12th by visiting www.accgov.com/gardening

For questions:

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

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EXTENSION

Local April Events

Piedmont Tour of Gardens is
April 16th, 2022, 10am to 4pm.

The Master Gardeners Garden here at the Athens-Clarke County Extension will be featured in the tour!

[More information found at piedmontgardeners.org.](http://piedmontgardeners.org)

Clark County Farm Bureau has a \$1,000 scholarship to be given to any graduating senior planning to study in Agriculture or a related field at a College in Georgia.

[Fill out the application here](#)

All applications must be received by May 6, 2022. If you have any questions, please contact Katy Seagraves at 706-354-0801 or kseagraves@gfbco.org.

UGA Trial Gardens

Spring Plant Sale 2022 will be held on
April 9th, from 8 am to 12pm.

The [UGA Hort. Club Spring Plant Sale](#)

is **April 1-3** from 9 am-6 pm.

Also **April 8-10th** from 9 am to 6pm.

The **April Green Thumb Lecture** is
April 13th from 6 pm to 7:30 pm.

Featuring a discussion of
Flowering Bulbs, by Cliff Brock.

[Register here](#)

Plantapalooza 2022 is April 9th!

Join The State Botanical Garden of Georgia, The UGA Horticulture Club, & The UGA Trial Gardens for a Salebration of plants!

The **State Botanical Garden of Georgia Spring Plant Sale** is **April 8th-10th**

The **SBGG** has great local events occurring each month. Make sure to check out their [event calendar](#) or [discover education activities for home](#).

UGA Extension offices around the state are working hard at developing quality online presentations on various topics.

Visit the UGA Extension [event calendar](#) to see events happening local to our county as well as virtual opportunities.

The Athens Area Master Gardener's Association Plant Sale is

April 23rd from 8 am –1 pm.

Here at the

ACC Extension Office

275 Cleveland Rd. Bogart, GA.

Athens Farmers Market

@ Creature Comforts begins

Wednesday April 6th 5-8 pm

Upcoming in May 2022

May 1st is the

UGarden Plant Sale & Market

Check out this student run organization for some great plants and products produced by University of Georgia students.

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

The **Winterville Farmers Market** is taking place on Saturdays from 10am-2pm starting April 9th at Pittard Park. Visit [their website](#) for more information.

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

Instagram: [@marigoldmarketwinterville](#)

SPRING FLOWERING BULB SALE 2022

Athens Area Master Gardener Association

For descriptions and photos of the bulbs and the order form, please visit:
tinyurl.com/aamga2022bulbsale.

Order bulbs through April 30

*Sale proceeds support local community gardens and
UGA Horticultural Scholarships.*



**The Athens Area Master Garden Association Plant Sale is
April 23rd from 8 am to 1 pm.**

Our annual sale is a fantastic way to get plants, receive expert advice, and support our projects benefiting Athens-Clarke, Oconee counties and more. Master Gardeners will be available to answer your questions.

- Hundreds of plants mostly curated from master gardens' homes
- An assortment of Georgia Grown:
 - Native plants
 - Perennials
 - Vegetables
 - Trees
 - Shrubs
 - Ground cover
 - And more!
- Yard art, birdhouses, bat houses, garden pots, etc.
- AMAZING prices
- Cash Only

Athens Area



Master Gardeners

Location:

Athens-Clarke County

Extension Office

275 Cleveland Rd

Bogart, GA 30622



UNIVERSITY OF GEORGIA
EXTENSION
Athens-Clarke County

Make your garden greener & the landfill smaller

ATHENS-CLARKE COUNTY
SOLID WASTE DEPARTMENT



For more information:
accgov.com/compost
or accgov.com/charm

International Compost Awareness Week May 1 - 7, 2022

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	ACC Commercial Compost Facility Tours	Storytime @ ACC Library Garden Gnome @ State Bot Garden	Green Thumb Lecture Virtual	Sweet Pea Club @ State Bot Garden Compost Teen Activity @ ACC Library		Compost Bin Sale @ Markets Garden Gnome @ State Bot Garden



ALL WEEK:

Get Caught Composting

Post your best photos getting caught in the act of composting or using: #compost #fcompost #ICAW #cooltheclimate #caughtcompostinginGeorgia

Half Price Compost Sale

Athens-Clarke Landfill 5700 Lexington Rd
\$10/cubic yard - Limit of 5 yards per customer

Food Scraps Drop-off Program

Residents can bring food scraps & other compostable material for free composting.

Food Scraps Drop-off Locations

ACC Compost & Landfill
5700 Lexington Rd
Monday-Saturday
8 am-3 pm

Athens Farmers Market
Saturday
8 am- noon

CHaRM
1005 College Ave
carts available 24/7

Solid Waste Admin Office
725 Hancock Industrial Way
carts available 24/7

OTHER EVENTS:

ACC Commercial Composting Facility Tour

Monday, May 2nd- Register for times at accgov.com/icaw
5700 Lexington Rd, Winterville, GA 30683

Compost Storytime: ACC Library

Tuesday May 3rd 10:30 am
2025 Baxter St, Athens, GA 30606

Garden Gnome Compost Program: State Botanical Gardens

Tuesday May 3rd 1:30 pm to 3:30 pm AND Saturday May 7th from 9:30 am to 11:30 am
2450 S Milledge Ave, Athens, GA 30605

Green Thumb Lecture: Composting Basics with Suki Janssen, ACC Solid Waste

Wednesday May 4th from 6:00-7:30 p.m.
Virtual - Register at accgov.com/gardening

Sweet Pea Club: State Botanical Gardens

Thursday May 5th from 9 am to 10:30 am
Register at <https://botgarden.uga.edu/event/sweet-pea-club/all/> *Be sure to register for 5/3/2022
2450 S Milledge Ave, Athens, GA 30605

Edible Compost Teen Activity: ACC Library

Thursday May 5th 4 pm
2025 Baxter St, Athens, GA 30606

Compost Bin Sale: West Broad Farmers' Market & Marigold Market

Saturday, May 7
West Broad Market: 1573 West Broad Street Athens, GA, 30606, 9 AM to 1 PM
Marigold Market: 115 Parkview Rd., Winterville, GA 30683, 10 AM to 2 PM
Proceeds benefit Keep Athens-Clarke County Beautiful

Visit accgov.com/icaw for a full list of events



State Botanical Garden of Georgia
UNIVERSITY OF GEORGIA



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!

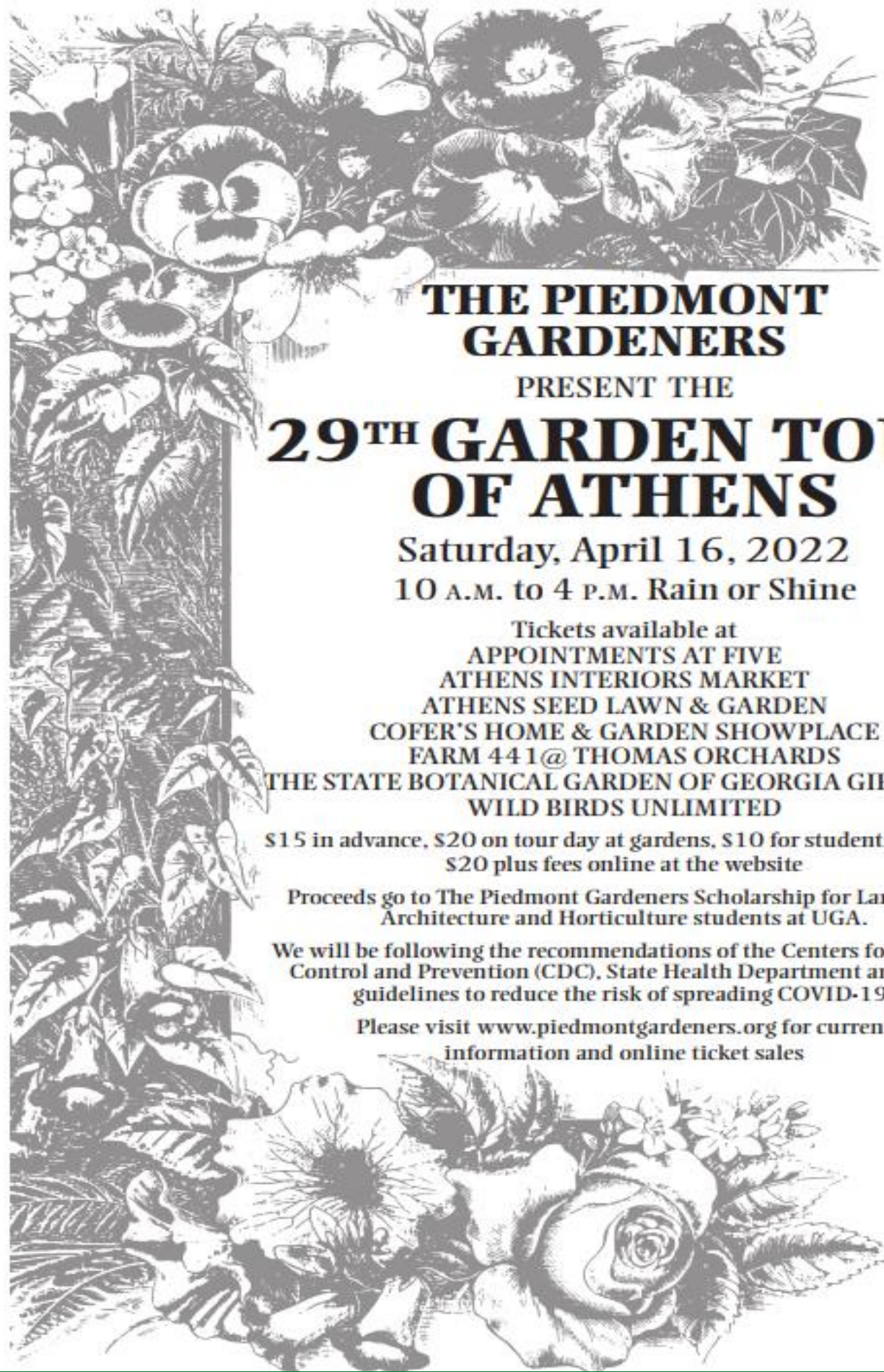


Virtual 4-H Programs can be viewed on the ACC 4-H website:

<https://tinyurl.com/acc4hvirtual>

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**THE PIEDMONT
GARDENERS**

PRESENT THE

**29TH GARDEN TOUR
OF ATHENS**

**Saturday, April 16, 2022
10 A.M. to 4 P.M. Rain or Shine**

Tickets available at
APPOINTMENTS AT FIVE
ATHENS INTERIORS MARKET
ATHENS SEED LAWN & GARDEN
COFER'S HOME & GARDEN SHOWPLACE
FARM 441 @ THOMAS ORCHARDS
THE STATE BOTANICAL GARDEN OF GEORGIA GIFT SHOP
WILD BIRDS UNLIMITED

\$15 in advance, \$20 on tour day at gardens, \$10 for students with ID,
\$20 plus fees online at the website

Proceeds go to The Piedmont Gardeners Scholarship for Landscape
Architecture and Horticulture students at UGA.

We will be following the recommendations of the Centers for Disease
Control and Prevention (CDC), State Health Department and local
guidelines to reduce the risk of spreading COVID-19.

Please visit www.piedmontgardeners.org for current
information and online ticket sales






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](#)

[Georgia Turf](#)

[Pest Management Handbook](#)

[Pesticide Applicator Info](#)

[Free Online Webinars](#)

[SE Ornamental Horticulture Production & IPM Blog](#)

[UGA Center for Urban Agriculture](#)

[Georgia Certified Plant Professional](#)

[Extension Publications](#)

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:



Contact us:

275 Cleveland Road
Bogart, GA 30622
Phone: (706) 613-3640
Email: lney@uga.edu
cmisseri@uga.edu

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