



# Shades of Green

Agriculture and Natural Resources

E-Newsletter

March 2025



# A Note from Athens-Clarke County Agriculture & Natural Resources

Hello readers!

The season is warming up and client questions are rolling in! See newsletter for features on CMS PAR garden, ACC Bee Team, articles and events and kickoff of the next season at the Athens Farmer's Market beginning in March and Marigold Market in April.

If you have questions about soil or water testing, starting your garden, pest and disease issues, plant ID, turfgrass, or any of our programs and offerings, don't hesitate to stop by the office or reach out by email to [lney@uga.edu](mailto:lney@uga.edu) (Ag Agent), [vlc74120@uga.edu](mailto:vlc74120@uga.edu) (Ag Educator) or by phone at 706-613- 3640.

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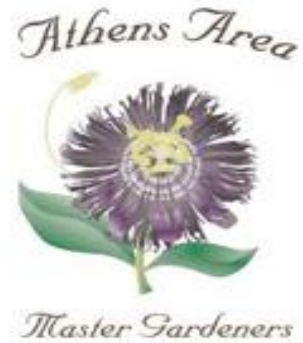


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Athens-Clarke County





## Clarke Middle School Plant-a-Row for the Hungry



The Clarke Middle School Plant-a-Row (PAR) garden began in 2001 with a group of Athens Master Gardener Volunteers working at a garden on a local farm. The garden has since transitioned to Chase Elementary, then Clarke Middle School courtyard, and now is getting a fresh start at the remodeled Clarke Middle School. The goals of PAR at CMS are to promote knowledge of vegetable gardening for students and volunteers and provide fresh fruit and vegetables for area food banks.



New location for the garden planned for 2025

# MG Project Highlight



## Honey Bee Team

ACC Extension Office

Master Gardeners and members of the Eastern Piedmont Beekeeper's Association (EPBA) team up to maintain 4 hives owned by Clarke County Extension. These hives are used for public education surrounding beekeeping through various demonstrations and workshops. The Athens Area Honey Bee Festival is held annually where the hives are opened to the public. The festival also features craft projects for kids, honey vendors, and live music.



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# Ultrasounds could help process edible flowers as food ingredients

Sydney Barrilleaux, UGA Today

Many of the flowers lining store shelves for Valentine's Day have been gifted at romantic dinners. But what happens to the flowers that went unsold?

A new study from the University of Georgia explores how flowers can be repurposed as food ingredients, offering a more sustainable way to use blooms that might otherwise be discarded.

"Rose flowers are still going to be rose flowers on Valentine's Day. But we are looking at what happens the day after Valentine's Day to those flowers," said Anand Mohan, associate professor in UGA's College of Agriculture and Environmental Sciences. "We don't have to throw away all the flowers that we use for decorative purposes."

Ultrasound technology has long been used for food processing. It helps improve quality and extend the shelf life of foods such as proteins sourced from plants and other food ingredients. Not only could these technologies be used for processing edible flowers, but also for extracting vitamins, proteins and other bioactive compounds that can affect our bodies.

Because of these uses, researchers said, decorative flowers don't have to be thrown away.

"We take those flowers, we cut them out, we make a beautiful bouquet, we give it to someone, and then after a day or two that flower's story is over," said Mohan,

whose lab is in the UGA department of food science and technology. "We are the ones who love those flowers after they have been used."

## Ultrasounds can process flowers faster with less damage

Using edible flowers in foods can be challenging. Flowers have a high moisture content, so they're hard to transport or store without spoiling. To help extend the shelf life of flowers, especially seasonal ones, researchers are looking to ultrasound technologies.

Ultrasounds work by generating waves that, in turn, generate heat. This helps dry out and preserve flowers without a major drop in color quality. Other methods, including natural or hot air drying,



(Illustration by Kaiya Plagenhoef/UGA)

# Ultrasounds could help process edible flowers as food ingredients

Sydney Barrilleaux, UGA Today

can take longer and lower the quality of processed flowers.

Ultrasound technology could also aid in extracting useful substances from flowers that can be added to foods.

“We are trying to use edible flowers as a source of protein, food colorant and vitamins,” said Mohan. “The idea was to use ultrasound technology to make it easier for us to extract those compounds from the flower.”

## Edible flowers could be an easy source of vitamins, natural colors

When Mohan began his research, the original goal was to find new ways to extend the shelf life of beef; his lab found that roses contain an antioxidant that could keep beef fresh for longer. But flowers can be used for a wide range of foods, according to researchers.

“We didn’t see flowers that way — that one particular product can offer that many dimensions,” said Mohan. “There is a wonderful untapped source of food ingredients that can become mainstream for the food industry and for human beings.”

Certain edible flowers also contain vitamins and minerals that are essential for human health. Broccoli flowers, for example, contain protein that may be added to foods such as cereals. Their color also makes them an appealing source of natural food dyes.

And with an abundance of flowers in nature, researchers say they could be a sustainable, multipurpose source of food ingredients.

Students, too, have been finding their own uses for flowers. Mohan described one that made a wrap out of hibiscus.

“Everything that my lab does is because of my wonderful students. It is because of their hard work that we have progressed so far,” said Mohan. “I give them a huge credit and a pat on their back for their work.”

The study was published in the Journal of Food Process Engineering and supported by a Georgia Beef Commission grant. Co-authors include Fidele Benimana, Kentaro Kawata, Fanbin Kong and Anupam Roy.



(Illustration by Kaiya Plagenhoef/UGA)



# Honey Bees and Beekeeping

UGA Extension Bulletin  
1045

Honey bees (*Apis mellifera* L.) are one of the most well-known, popular and economically beneficial insects. For thousands of years, man has plundered honey bee colonies to get honey, bee larvae and beeswax. In recent decades, bee plundering has given way to bee management. Now, honey bees are commonly kept in artificial hives throughout the United States, and a large and sophisticated beekeeping industry provides valuable honey, beeswax and pollination services. A large section of the industry, well represented in Georgia, is devoted to mass-producing queens and bees for sale to other beekeepers. Although many people make a living from bees, most beekeepers are hobbyists who have only a few hives and who simply enjoy working with these fascinating insects.

## Honey Bee Biology

Honey bees, like ants, termites and some wasps, are social insects. Unlike ants and wasps, bees are vegetarians; their protein comes from pollen and their carbohydrate comes from honey, which they make from nectar. Social insects live together in groups, cooperate in foraging tasks and the care of young, and have different types, or "castes," of individuals. There are three castes of honey bees:

**Workers** - Reproductively underdeveloped females that do all the work of the colony. A colony may have 2,000 to 60,000 workers.

**Queen** - A fully fertile female specialized for producing eggs. When a queen dies or is lost, workers select a few young worker larvae and feed them a special food called "royal jelly." These special larvae develop into queens. The only difference between workers and queens is the quality of the larval diet. There is usually only one queen per colony. The queen also affects the colony by producing chemicals called "pheromones" that regulate the behavior of other bees.

**Drones** - Male bees. A colony may have 0 to 500 drones during spring and summer. Drones fly from the hive and mate in the air with queens from other colonies.

The queen lays all her eggs in hexagonal beeswax cells built by workers. Developing young honey bees (called "brood") go through through four stages: the egg, the larva (plural "larvae"), the inactive pupa (plural "pupae") and the young adult. The castes have different development times. Newly emerged workers begin working almost immediately. As they age, workers do the following tasks, in this sequence: clean cells, circulate air with their wings, feed larvae, practice flying, receive pollen and nectar from foragers, guard hive entrance and forage. Unlike colonies of social wasps and bumble bees,

# Honey Bees and Beekeeping

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honey bee colonies live year after year. Therefore, most activity in a bee colony is aimed at surviving the next winter.

During winter, bees cluster in a tight ball. In January, the queen starts laying eggs in the center of the nest. Because stored honey and pollen are used to feed these larvae, colony stores may fall dangerously low in late winter when brood production has started but plants are not yet producing nectar or pollen. When spring "nectar flows" begin, bee populations grow rapidly. By April and May, many colonies are crowded with bees, and these congested colonies may split and form new colonies by a process called "swarming." A crowded colony rears several daughter queens, then the original mother queen flies away from the colony, accompanied by up to 60 percent of the workers. These bees cluster on some object such as a tree branch while scout bees search for a more permanent nest site - usually a hollow tree or wall void. Within 24 hours the swarm relocates to the new nest. One of the daughter queens that was left behind inherits the original colony. After the swarming season, bees concentrate on storing honey and pollen for winter. By late summer, a colony has a core of brood below insulating layers of honey, pollen and a honey-pollen mix. In autumn, bees concentrate in the lower half of their nest, and during winter they move upward slowly to eat the honey and pollen.

## Races of Honey Bees

Honey bees are Old World insects that were introduced into North and South America by European settlers. The most well-known races of honey bees in the New World are:

Italian bees, *Apis mellifera ligustica* - Originally from Italy, this is by far the most popular honey bee. Italian bees are yellow in color, relatively gentle, overwinter well and build up quickly in spring. They are easily provoked to rob weaker neighboring colonies and sometimes exhaust honey stores rapidly in winter.

Carniolan bees, *Apis mellifera carnica* - These bees originated in the Austrian Alps, northern Yugoslavia and the Danube valley. Gray/brown in color, they are extremely gentle, conserve winter food stores well and build up quickly in spring. Carniolan bees construct new comb slowly and swarm frequently.





# Honey Bees and Beekeeping

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Caucasian bees, *Apis mellifera caucasica* - These bees originated in the Caucasus mountains between the Black and Caspian Seas. They are lead-gray in color, very gentle and swarm infrequently. Caucasian bees overwinter poorly, build up slowly in spring, are susceptible to Nosema disease and gum up their hives with propolis (tree resins and beeswax).

German black bees, *Apis mellifera mellifera* - Originally from throughout northern Europe, this was the first honey bee brought to the New World. They are brown/black in color and overwinter well. German black bees are nervous, aggressive and build up slowly in spring.

Africanized honey bee, *Apis mellifera scutellata* and its hybrids - These honey bees originated throughout east Africa. In the 1950s, this race was imported to Brazil and began migrating northward. Compared to European races, this bee and its hybrids are extremely defensive, have smaller nests and swarm more frequently. Africanized honey bees colonized certain regions of the United States in the 1990s.

## Preparing to Keep Bees

Honey bees can be kept almost anywhere there are flowering plants that produce nectar and pollen. Choose a site for bee hives that is discrete, sheltered from winds and partially shaded. Avoid low spots in a yard where cold, damp

air accumulates in winter. Your county Extension agent can give you names of local beekeepers and bee organizations that are sources of help and information. Be considerate of non-beekeeping neighbors. Place hives so that bee flight paths do not cross sidewalks, playgrounds or other public areas. In dry weather, bees may collect water at neighbors' swimming pools or water spigots. Avoid this by giving your bees a water source in your yard such as a container with floating wood or styrofoam chips. The floating objects prevent bees from drowning.

## Beekeeping Equipment

One new hive with bees and basic equipment costs about \$150. Hive parts are cut to standard dimensions that mimic the space bees naturally leave between their combs. Always reproduce these dimensions exactly if you make your own bee hives. You will need the following equipment.

Bee hive; made up of: • Bottom board • Frames and foundation • Hive body or brood chamber • Queen excluder • Honey supers • Inner cover • Outer cover

Smoker; Hive Tool; Veil and gloves ; Feeders

To see full publication, visit [https://secure.caes.uga.edu/extension/publications/files/pdf/B%201045\\_5.PDF](https://secure.caes.uga.edu/extension/publications/files/pdf/B%201045_5.PDF)



Blueberries budding out



Seed Starting



# What's Happening at the ACC Extension Office?



Workday for native landscape



Planting Sugar Snap Peas with WBL Intern

# Local March Events

## **Marigold Mingle**

**Saturday, April 19th, 2025**

**Doors open at 6 pm, music at 7 pm**

**Marigold Auditorium for Arts & Culture**

**Winterville, GA**

An evening of music & merriment to benefit the Marigold Collective

All ages! free parking! \$25 in advance / \$30 day of

Limited VIP packages available

[Marigoldcollectivewinterville.com](http://Marigoldcollectivewinterville.com)

## **Flight of the Fireflies Lantern Parade**

**Saturday, March 8th 2025**

**Dudley Park, 1145 E Broad St, Athens GA  
6 PM**

Participants will enjoy live music, fantastical performers and large-scale illuminated art works. On the night of the Flight of the Fireflies lantern parade, each access point to Dudley Park is staffed with friendly volunteers to help guests find their way. This parade is open to the entire Athens community, individuals, families, school, neighborhood groups, and organizations are all encouraged to participate. DIY lanterns are encouraged! The parade route takes approximately 30 minutes to walk— for more information please call 706-548-1865.

## **Native Plant Symposium**

**Wednesday, March 5th 2025**

**9 AM—3:30 PM**

**State Botanical Garden of Georgia, Terrace Room, \$65; Lunch Included**

Growing and protective native plants are important for many reasons; they celebrate our state and region, they are well suited to our region's growing conditions and they are the foundation of the complex ecosystem that supports insects, birds, reptiles, amphibians and mammals. Join us for this year's Native Plant Symposium to explore the beauty of native plants.

## **Athens Area Master Gardener**

### **Association Spring Plant Sale**

**Saturday, April 26th, 2025**

**8 AM—1 PM**

**ACC Extension Office, 275 Cleveland RD  
Bogart GA 30622**

Come out to enjoy a selection of annuals, perennials, shrubs/trees, vegetable starts and houseplants selected by Athens Master Gardeners. Proceeds go to project budgets and local scholarship funds.

## **Georgia Questival**

**Sunday, March 16th 2025**

**1 PM —5 PM**

**State Botanical Garden, Children's Garden**

\$5 per individual, \$20 per family and children two and under are free

Join the SBGG staff, students, volunteers and local partners for our spring family festival, Georgia Questival. Exhibitors and vendors will be stationed throughout the Alice H. Richard's Children's Garden and Visitor's Center, leading adventurous activities showcasing Georgia's natural history.

## **Diamond Hill Farm Stand**

### **Athentic Brewing Company**

**March 27th 2025**

**4 PM—6 PM Every Thursday**

Come to Authentic for your CSA pick-up, along with some extra produce and flowers they'll sell to the general public. 4-6 pm every Thursday on our patio,

Diamond Hill Farm is a small-scale farm located on the outskirts of Athens, GA. They are passionate about growing flavorful, nutritious food and top-quality flowers in sustainable practices for the land, farmers and community. See <https://athenticbrewing.com/event/diamond-hill-farm-stand-3/2025-03-27/>

# Athens Farmer's Market Main Season

## Saturdays, March-December 2025



**SATURDAY AT  
BISHOP  
PARK**

**YEAR  
ROUND!**

### **Bishop Park**

#### **Main Season**

Saturdays // 8am to noon // March - December

#### **Winter Season**

Saturdays // 9am to 1pm // January - February

**WEDNESDAY AT  
CREATURE  
COMFORTS**

**MARCH TO  
NOVEMBER**

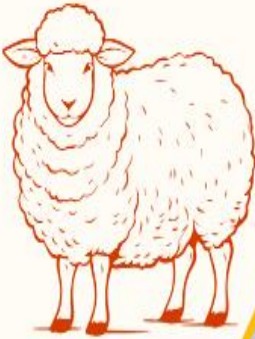
### **Creature Comforts**

Wednesdays // 5pm to 8pm // March - November



# MARIGOLD FARMERS MARKET

9am - 1pm | April - December  
Pittard Park, Winterville  
115 Parkview Road



## 2025 Vendor Applications Now Open!

# marigold mingle

an evening of music & merriment to benefit the Marigold Collective!  
**Saturday April 19, 2025**  
 Marigold Auditorium For Arts & Culture | Winterville, Georgia

*Cicada Rhythm*  
*Wet Meadows*  
*Athens Cowboy Choir*



doors @6p music @7p  
 all ages! free parking!  
 \$25 in advance / \$30 day of  
 limited VIP packages available  
[marigoldcollectivewinterville.com](http://marigoldcollectivewinterville.com)




Join us on Saturday, April 19 for an unforgettable evening of music, munchies, & merriment to benefit the Marigold Collective - featuring the far out frequencies and seasonal sounds of Cicada Rhythm, Wet Meadows, and Athens Cowboy Choir- plus fabulous florals, farm to fork fare and special sips!

Ticket & concession sales directly promote food sovereignty through our nutrition & educational programming, and farmer cooperative!

Limited VIP packages include admission & priority seating at the concert, two drink tickets, light refreshments, and a behind-the-scenes tour of the Winterville Cultural Center Galleries & Marigold Auditorium led by Mayor Dodd Ferrelle!

[link to the tickets](#)

## SHOP GARDEN STARTS GROWN LOCALLY BY YOUR FAVORITE FARMERS!



MOLLYPOP FARMS



**PICK UP SATURDAY 4/5 @ MARIGOLD FARMERS MARKET!**



All plants are grown by local farmers who are vendors at Marigold Market and can be picked up on the first Saturday market on April 5th from 9 am—1 pm.

See <https://marigold-market.localline.ca/plantshop>

To order fresh produce/bread/groceries online to pick up at the Monday Market, visit [link for online orders](#)



**City of Winterville - Blood Drive**

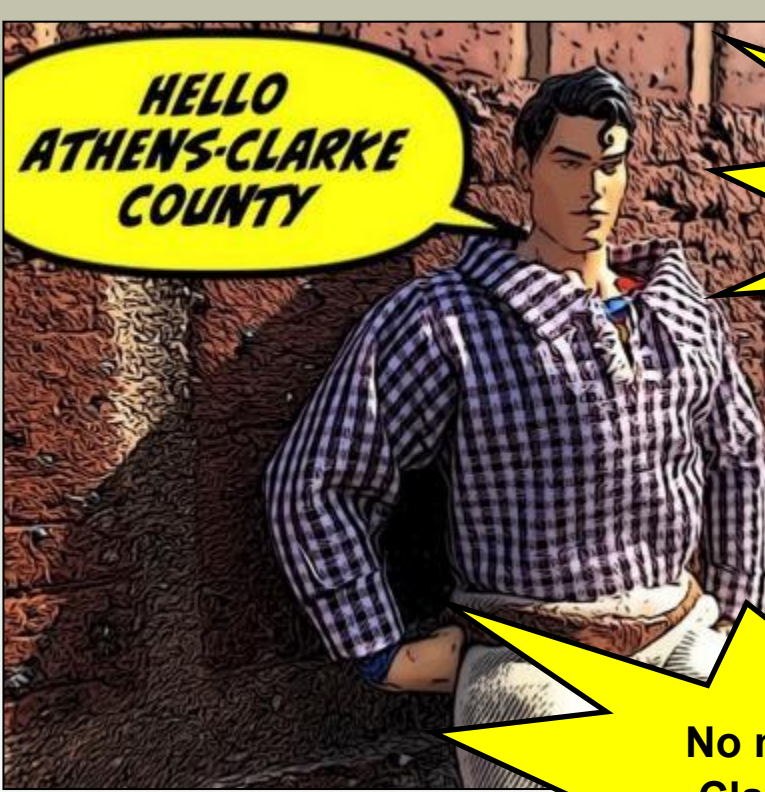
**Monday, March 10th**  
**11:00 AM – 3:00 PM**

Train Depot - Event Room  
 101 Marigold Lane  
 Winterville, GA 30683

♥ Give in March for a \$10 Gift Card by email & successful donations get A1C testing.




Schedule your appointment today!



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](#)

[Georgia Turf](#)

[Free Online Webinars](#)

[Pest Management  
Handbook](#)

[Pesticide Applicator  
Info](#)

[Georgia Certified Plant  
Professional](#)

[Bugwood— Pest Images](#)

[UGA Center for Urban  
Agriculture](#)

[Extension Publications](#)

[OnlineLandscape Alerts](#)

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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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