



Shades of Green

Athens-Clarke County Agriculture and Natural Resources E-Newsletter

November 2021



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A note from Athens-Clarke County Agriculture & Natural Resources

Hello readers and happy November! This is our last edition of Shades of Green for the year. We have enjoyed providing you all with timely articles, events and information to satisfy your interest in gardening, farming, homesteading, etc. We hope you have enjoyed this year's content and are looking forward to what we plan to share with you next year!

Our last [Green Thumb Lecture](#) for the year will also occur this month. It will cover the topic of shade gardening. [Click here](#) to register or [view the flyer](#) later in this issue. We are beginning to plan the coming 2022 schedule of Green Thumb Lectures and look forward to announcing them in the beginning of 2022.

Our deadline to apply for the [2022 Master Gardener Course](#) ends this month! [Check out the flyer](#) for the course later in this issue. Let us know if you have any questions about the program or applying.

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

Take care,

Athens-Clarke County Agriculture and Natural Resources



Your black walnut tree is out to get you

By Kim Coder

When you look into your garden or backyard, be careful not to ignore your black walnut (*Juglans nigra*) tree. Lurking inside its leaves, fruits and roots is a pesticide made to control competition.

Black walnuts are valuable as shade and timber trees. They produce delectable nuts, too. But if your black walnut overhangs your garden, your tree may be out to get you.

Toxic ooze

The fruit, leaves and roots of black walnut trees contain a chemical, juglone, that can have a devastating impact on the roots of other plants. In humans, ingesting even a small amount of pure juglone can cause a serious poisoning effect.

Inside the tree, juglone is a clear liquid — called prejuglone — that's nontoxic. If the tree cells which contain this prejuglone are damaged, cut or injured, it is immediately oxidized into its toxic form of juglone.

You can observe this by cutting into the husk of a small walnut. The cut area quickly changes from green to dark brown as it is exposed to the air, and the clear prejuglone is rapidly oxidized to dark, reddish-brown juglone.

Insects, diseases and mechanical injury can cause prejuglone to be oxidized into its toxic form. Over time, juglone naturally leaks out of walnut roots, leaves and buds into the soil, acting as a protective chemical and herbicide for the walnut tree.

While the highest concentrations of juglone, by far, are found in black walnut parts, many other members of the walnut family contain it too — English walnut, butternut, pecan and the rest of the hickories all have small amounts.

The fruit husks contain the highest concentrations in any species. One of juglone's many purposes is to prevent pests from attacking new

seeds and the embryos they carry, and walnut fruit carry their own pesticide with them.

The effects of juglone

Some people and animals are susceptible to juglone damage. Consuming too many leaves or using walnut sawdust for bedding can cause a number of problems with animals. Some people are especially sensitive to juglone, and even sawdust from cutting walnut lumber can coat skin and



(Photo by Franklin Bonner, USFS, ret., Bugwood.org)

produce a red welt where it lands. Juglone is a strong respiratory toxin and small amounts will damage other living creatures.

In the soil, juglone will damage many living things, including plant roots. Once it's released into the soil, small amounts can damage and kill the roots of neighboring plants. Beneath the tree, this walnut chemical severely damages annual plants, garden vegetables, fruit trees and some broadleaf perennials. Most grasses seem immune. If it leaks back onto a walnut root, however, it is quickly made nontoxic again and stored. Wherever walnut roots travel, they change the soil they move through by adding juglone.

Protecting your landscape

For very susceptible plants, like tomatoes, potatoes and peppers, even

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It is Time for the Fall Migration

By Willie O. Chance III

I wish I had a camera. It was one of those "Kodak moments." Elizabeth, my oldest daughter, was lying outside on the ground. Resting is what she called it. I called it getting dirty all over.

We had been feeding the birds in the driveway. Rebecca, my youngest daughter, and I put out some more seed. Here they came again--a small flock of some brown and black migratory birds. They made a quick stop from their travels south to eat the seeds. They worked quickly. You could even hear the "click, clicking" of their bills as they fed.

Since Elizabeth was laying on the ground nearby, the birds settled close to her without fear. She raised her head and began to enjoy her front row seat.

I alerted Rebecca to the bird's return. Earlier they had poured in so quickly and smoothly it looked like the flock was fluid. It seemed to rain birds. Now Rebecca wanted to get close like her big sister. So she had to do it. She walked up as close as she dared without scaring off the birds. Then she crawled the rest of the way. Once she was as close as sister she was content. They lay on the ground next to each other and listened to and watched the birds until a passing car caused the flock to flee.

As the seasons change, it is fun to relax and

watch the changes. Birds migrate, leaves change color, and summer gives way to fall, which yields to winter. Cooler temperatures and shorter days send signals to plants and animals to prepare for winter. Unfortunately sometimes, their plans for winter interfere with our plans.

For example, consider wasps, hornets, and yellow jackets. They leave their nests in the fall. Most of the family dies off leaving only fertilized females. These look for a warm spot to spend the winter. Sometimes this may be our home.

These insects are called social insects because they live in groups. They build nests and raise young. They aggressively defend their homes. This is why we get stung when we approach their nests. They are protecting their babies. They are especially aggressive in the fall. After the first frost though, when the rest of the colony has died, the fertilized females become less hostile. The cold makes them sluggish and they will probably not even sting. If found inside, they should be easy to deal with. Dr. Beverly Sparks, University of Georgia entomologist, suggests sucking them up with a vacuum or spraying them with an insecticide containing a pyrethroid. One of the quick knockdown sprays should work well.

Another insect invader is not a real pest, just an annoyance. Lady bugs are also looking for a winter home. Try not to kill

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Your black walnut tree is out to get you (continued...)

walnut mulch can be damaging. Be sure to age or compost leaves, twigs, fruit husks and wood chips from walnut trees before adding them to a garden or landscape.

An oxidation and aging process converts all the prejuglone into toxic juglone. Further aging and oxidation, under moist conditions, will break juglone apart into nontoxic components. Grind down black walnut stumps or remove them. Take away any chips or sawdust for composting.

Some trees, such as red maple, willow and apple, won't perform well on sites recently occupied

by black walnut roots. Many plants won't grow well around living black walnuts or where trees have recently lived. Other plants can not survive under the walnut canopy of leaves. One full growing season, though, is usually enough to eliminate most of the juglone from healthy soil.

So, if you think your walnuts are out to get you — they can be if you're not careful.

(Kim Coder is a forester with the University of Georgia Warnell School of Forestry and Natural Resources)

It is Time for the Fall Migration (continued...)

them. They eat many harmful insects. Just sweep them up and release them outside.

Not all unwelcome guests are insects. Some may be other arthropods. Arthropods (meaning "jointed foot") include many hard-shell, multi-legged creepy crawlies besides insects. One of these is the millipede.

You can tell millipedes are not insects. They have too many legs. All true insects have six legs. Millipedes have four per body segment. And they have lots of body segments. They are also called "million legs"--though they don't have that many. Millipedes are long, worm-like, slow moving and curl up when disturbed. They eat decaying organic matter (leaves, etc.) and will not harm anything. They are an annoyance though when they get in a house. Many of them have come inside lately. It may be due to the rain we have had.

If you must kill them, spray or dust Sevin in a six-foot wide band around the house, or pull mulch back from the house and treat this area. The idea is to kill enough of them to lessen the numbers getting inside.

Other pests entering the house can be slowed


down by using a perimeter spray around the house. Like for millipedes, treat a band around the house six foot wide and a few feet up on the house. Spray Dursban, Demon, Diazinon or others. This will help keep out roaches, spiders, and other pests.

Of course the best way to keep pests out is to close the door on them. Seal cracks with caulking, weatherstrip around doors and windows and fix broken screens. There is no way to keep pests out of houses with holes in them.

As cool weather arrives enjoy the change of seasons, but don't let pests make your house their winter resort. For help with these or other fall and winter home and garden chores, call your friends at the University of Georgia Extension Service.

(Willie Chance is a past Agriculture and Natural Resources Agent in Houston County, Georgia)

**Please note: pesticide recommendations may not be up to date or applicable to your state. Check with your local county Extension office for pesticide current recommendations and regulations. Always follow the label before applying pesticides.*



Cover crops provide habitat for predator insects that may help control pests

By Maria M. Lameiras

Both traditional and organic producers are increasing their use of [cover crops](#) for a variety of reasons — to control erosion, choke out weeds, improve soil health and enhance water availability. Now research by University of Georgia scientists is examining which cover crops may also provide important habitat for predatory insects that could help control disease- and damage-causing pests in cotton.

Cover crops are usually planted after a primary crop has been harvested to provide benefits over the winter. In the UGA [College of Agricultural and Environmental Sciences](#) study, cover crops were left in place during the growing season when cotton was planted in test fields to compare predator insect populations to those in traditionally tilled fields.

In 2017 and 2018, UGA entomologist Jason Schmidt and his research team found that — compared to cotton not grown with cover crops — crimson clover and rye cover crops planted in cotton fields increased the presence of beneficial predator insects during the early part of the growing season. The full results of the study were recently published in the journal [Ecosphere](#). More details on yield and production value were pub-

lished in a companion paper in the journal [Biological Control](#).

While cotton crops without cover crops still attracted some predatory insects, the use of cover crops resulted in a seven- to ten-fold increase in the number and diversity of ground-dwelling predatory insect populations in the early season compared to cotton grown without a cover crop, particularly when a rye cover crop was used.

This increase in ground-dwelling predators in rye and crimson clover treatments continued into the mid-season. As the season progressed and cotton vegetation grew, the late-season predatory insect communities became similar in plots both with and without cover crops. While counts of predators provide a measure of changes in populations and communities, we don't really know what these predators are doing there or whether the predators are providing services, like pest control, to cotton producers, Schmidt said.

[Biodiversity and the cotton food web](#)

Schmidt's team used [molecular gut content analysis](#) (MGCA) to determine what pests and other prey predators were feeding on to determine roles in the cotton food web, as shown in the [published study](#). Schmidt used a combination of PCR (polymerase chain [Continued on page 7](#))

Cover crops provide habitat for predator insects that may help control pests (continued...)

reaction) and sequencing technologies such as Illumina MiSeq to screen for prey DNA remains in the guts of predators.

They found that, while the biodiversity of the cotton ecosystem increased with the use of cover crops — particularly [Lycosidae](#), [Linyphiidae](#), and [Gnaphosidae](#) spiders, as well as [Staphylinidae](#) beetles — compared to cotton grown without a cover crop, the predatory insects ate a variety of non-pest prey.

Small arthropods called [Collembola](#) and flies made up a considerable amount of their diet and likely helped sustain their populations. MGCA also showed that predators fed on pests like aphids and spider mites, which aren't usually a problem in cotton, but can be, which provided support for efforts to conserve and boost populations of these predators to control some pests that don't cause significant economic damage, Schmidt said. Other key pests such as [stink bugs](#), [thrips](#) and [whiteflies](#) were rarely found in their guts.

"We were interested in whether the habitat formed by the leftover plant material from these cover crops was going to improve the beneficial insect populations in these fields and what those additional predator insects are doing while they're in there," Schmidt said. "This was an assessment or estimate of the types of interactions going on in those different scenarios of either using a cover crop or not, or using one type of cover crop over another, and whether that had any influence over altering food webs with habitat."

The study primarily focused on how cover crops influenced the predator insect communities. It also explored whether those altered communities deliver different pest control services measured by changes in the interaction between species. To boil it down, who's eating what?

"We wanted to see what kinds of predators were

out there and what they were feeding on," Schmidt said. "There's a motion of change going on where growers are thinking more about using natural systems instead of just using pesticides. Producers must use all tools available to make a profit, so if they can promote beneficial insects in the system to aid in pest control, fewer inputs are needed and that should lead to reduced costs of production."

As the residue from cover crops deteriorates over the growing season, insect populations in the fields change and the early season benefits of cover cropping do not appear to last through harvest.

"There are early-season benefits of cover crops when cotton plants are small. The cover crop residue forms a complex habitat matrix with cotton seedlings popping out of it and there are insect predators in there that can defend those young plants from pests," Schmidt said. "It's interesting that the habitat doesn't maintain these communities throughout the season. It is the first part of the season when you have habitat differences between the different cover crops because there is more cover crop present than cotton seedlings. Later in the season, you see similar communities. So, even though there's a little bit of habitat on the ground from those cover crops, it doesn't seem to matter in terms of the overall community in the system when cotton plants become the primary habitat available."

Reducing pesticides and preserving beneficial insects

The research could lead to a decrease in the use of agricultural pesticides to control pest insects and to preserve beneficial insects.

"We have the evidence that common predatory insects are eating a lot of aphids and, even though cotton does not commonly have problems with aphids, sometimes

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Cover crops provide habitat for predator insects that may help control pests (continued...)

growers do have problems with aphids. One reason is the lack of predatory insects to help control aphid population growth,” Schmidt said.

Overusing pesticides in cotton can cause aphid populations to increase, but the major nuisance pests of cotton are thrips, stink bugs and whiteflies, Schmidt added. While researchers did not find that the predatory insects ate large numbers of thrips and stink bugs, more research is needed to learn whether the more robust predator communities supported by cover cropping could provide whitefly control, as whiteflies were not observed in the test fields during the study.

“We are seeking to understand species interactions in production and natural systems. In most ecological systems we see patterns and we have no idea whether the species interactions are driving that pattern or what species are interacting

and what species roles are in these systems,” Schmidt said. “That’s our ultimate goal, understanding the functioning of diversity and the beneficial roles species play in production systems and best harvest these services for production systems, like cotton.”

Schmidt is planning continued research incorporating recent developments in mixes of cover crops to increase ecological diversity and potentially reduce the use of agricultural pesticides.

This work was supported, in part, by a U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) multistate Hatch Project, the Georgia Cotton Commission and Cotton Incorporated.

(Maria M. Lameiras is a managing editor with the University of Georgia College of Agricultural and Environmental Sciences)



Athens-Clarke County Extension

Virtual Green Thumb Lectures

2021 Free Monthly Gardening Class Series



November: Shade Gardening

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

- Understanding the concepts of shade gardening
- The best shade plants in our region
- Landscaping tips

Gardeners of all experience levels are welcome.

WHEN:

Wednesday, Nov. 10 · 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 November 9 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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equal opportunity and affirmative action.*



Local “Green” Events

Rock House Creamery Farm & Garden Tour

When: November 8 from 10:00 am - 11:30 am

Immerse yourself in the world of Rock House Creamery and Garden with a farm tour.

Attendees will meet beautiful dairy cows, learn about the creamline milk process from cow to bottle and sample milk and cheese curds.

Following the dairy tour, there will be a visit to the extensive vegetable gardens of The Garden at Broughton where attendees will learn about the many aspects of the garden: what's grown, who works there and the diverse career paths that lead to agricultural work.

\$12. www.rockhousecreamery.com

For more information, visit the [event website](#).

Lunch & Learn: Carnivorous Plants (Virtual)

When: November 12 from 12pm-1pm

For more details, visit the [event website](#).

Contact to register & obtain the meeting link at uge3039@uga.edu

Lincoln County Equine Veterinary Workshop

Join Lincoln County UGA Extension, experts from the UGA College of Veterinary Medicine, and Helios Equine Rehabilitation Center for a day of continuing education.

When: November 18

For more details and how to register, visit the [event website](#).

Lunch & Learn: Pruning Basics

When: December 10 from 12pm-1pm

For more details, visit the [event website](#).

Contact to register & obtain the meeting link at uge3039@uga.edu

Sandy Creek Nature Center

Free outdoor nature programs for families! Visit [their website](#) to learn more and find out how to register.

The State Botanical Garden of Georgia 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.

Georgia Farm Bureau® Farm Passport

- The Farm Passport is your guide to finding and visiting farms throughout Georgia. You and your family can explore the state, support local farms, and eat fresh food while learning where it comes from!
- You can download a printable copy of the passport or find a location to pick one up, as well as find out more information here:

<https://www.gfb.org/education-and-outreach/passport.cms>



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: [@AthensFarmersMarket](#)

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 at Pittard Park. Visit [their website](#) for more information.

Find out more on Facebook:

[@marigoldmarketwinterville](#)

Instagram: [@marigoldmarketwinterville](#)

Would you like to become an Athens Area Master Gardener?

Established in 1990, the Athens Area Master Gardener Program provides novice and seasoned gardeners with an intensive educational experience in horticulture principles, practices and pest management. Classes are taught by UGA faculty and other subject area experts.

After completing the educational component of the program, participants perform 50 hours of volunteer service in their community before the end of the calendar year. Master Gardener Extension Volunteers answer gardening questions at the ACC Extension office, staff informational booths at farmers markets and local events, conduct plant clinics, help with Plant a Row for the Hungry gardens, assist curators at the State Botanical Garden of Georgia, teach Junior Master Gardener programs at local schools and more.

Question? Contact Laura Ney at Iney@uga.edu



Athens-Clarke
County 2022 Master
Gardener Extension
Volunteer Program

Dates

Tuesday and Thursday
mornings, January 6 —
April 7, 2022

Time

8:45am-11:30am

Location

Athens-Clarke County
Extension Office
275 Cleveland Road
Bogart, GA 30622

Cost

\$250

To apply

Contact ACC Extension
at (706) 613-3640 or
email Iney@uga.edu



**APPLICATIONS
ARE DUE
NOVEMBER 12,
2021**



Course topics include:

- Botany & Plant Physiology
- Soils & Plant Nutrition
- Entomology
- Plant Pathology & Disease Control
- Landscape Design
- Vegetable Gardening
- Fruit Gardening
- Herb Gardening
- Organic Gardening
- Annuals, Perennials & Bulbs
- Plant Propagation
- Composting
- Weed Science
- Integrated Pest Management

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UNIVERSITY OF GEORGIA
EXTENSION
Athens-Clarke County

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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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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Horticulture
Production & IPM
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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:



Contact us:

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Bogart, GA 30622
Phone: (706) 613-3640
Email: Iney@uga.edu

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