

SPRING 2018

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Ask an Extension Master GardenerSM Volunteer

Extension Gardener provides timely, research-based horticultural information. We publish four issues per year. Send comments about *Extension Gardener* to:

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Water Quality and Home Lawn Care

North Carolinians care for about 1 million acres of home lawn. When a lawn gets more fertilizer than is needed or when fertilizers and pesticides accidentally get onto paved surfaces, the excess is likely to run off into the nearest stream or seep through the soil into the groundwater. To care for your lawn in ways that prevent and reduce contamination of our water resources, rely on these tips:

Establishing a Healthy Lawn

- Test the soil before you plant to find out the right amount of lime and fertilizer for your particular conditions.
- Cover seeded areas with mulch to aid establishment and reduce runoff and erosion.
- Water newly seeded areas lightly and frequently while the lawn is getting established. Do not water so much that runoff occurs.

Watering

- Water the grass—not the pavement or the driveway. Position sprinklers and automatic irrigation systems so that the water falls only on the lawn and not on paved surfaces.
- Do not water too much. Conserve water by carefully managing automatic irrigation systems. Install rain or soil moisture sensors to override the timer when necessary.

Fertilizing

- Apply the right amount of fertilizer at the right time of year to maintain a healthy lawn and reduce water pollution. See NC State Extension's **lawn maintenance calendars** for specific advice.
- Calibrate your spreader each time you use it to ensure a balanced pattern of coverage that applies the desired rate of fertilizer and lime.



Apply fertilizer and lime at the proper rate. ©NC State Communication Services. All rights reserved.

- Shut off the spreader when you cross paved surfaces or bare ground to avoid applying fertilizer to hard surfaces where stormwater will carry it away in the next rain. If fertilizer particles do land on a hard surface, sweep or blow them back onto the lawn.
- Leave clippings on the lawn to decompose and return their nutrients to the soil. This “grasscycling” can provide about 25 percent of the nutrients recommended for the lawn.

Managing Pests

- Identify the true cause of any problems and decide if you really need to take any action. Treat only those areas that have pest problems.
- Plan to treat the pest when it is most susceptible and the lawn is most tolerant. Follow label directions to apply the pesticide at the correct rate and time.
- Pay attention to the weather forecast. Do not apply pesticides when heavy rain is likely.
- Calibrate your sprayer to deliver the correct amount of pesticide.
- Mix liquid solutions and fill sprayers on grassy surfaces so no liquid spills on pavements or bare areas.
- Mix granular materials and fill applicators on smooth, impenetrable surfaces so you can clean up any spills.



Position sprinklers so water falls only on the lawn. ©NC State Communication Services. All rights reserved.

This information is adapted from an NC State Extension publication, *Water Quality and Home Lawn Care* (AG-626), which is available online: content.ces.ncsu.edu/water-quality-and-home-lawn-care.

Extension Showcase

Sampson County Ag Day

Every other year, the Sampson County Extension center hosts Ag Day to provide agricultural learning through entertainment, games, health screenings, livestock demonstrations, informational booths, and exhibits.

Agriculture is a \$1.3 billion industry in Sampson County, and the county leads the state in swine, turkey, sweet potato, and vegetable production.

More than 900 people attended Ag Day in 2016, and participants said that the event was a great way to learn about some of the programs offered by NC State Extension, as well as how agriculture affects everyone's life in Sampson County.

Sampson County Ag Day 2018 is free of charge, and will be held on April 21 from 10:00 AM to 3:00 PM at the Sampson County Extension Center.

You can find more information about this and other happenings in Sampson County at sampsoc.ces.ncsu.edu, or on Facebook at www.facebook.com/SampsonCES/.

—Brad Hardison

Sampson County Ag Day offers learning and fun for the entire family. ©Brad Hardison



extensiongardener.ncsu.edu

Smart Gardening: From the ground up

Garden preparation needs to start from the ground up. Follow these recommendations to keep your soil and garden in shape:

- **Cover the soil.** The two greatest causes of soil erosion in North Carolina are bare soils and improper soil preparation (improper tillage). Insufficient soil coverage allows wind, water, and other elements of nature to erode the soil. Soils covered year-round in cover crops, mulching materials, or desired plants like vegetables or ornamentals will be less susceptible to erosion problems.
- **Minimize soil disturbance.** While moderate soil tillage can create some short-term benefits, such as soil aeration and improved beneficial microbial growth, excessive tillage will decrease organic matter and pore space in the soil. Over the long term, repeated tillage can reduce populations of beneficial soil microbes because their food source, organic matter, is being depleted rapidly. No-till soils usually have cooler temperatures, more macropores, and more organic matter mixed throughout the topsoil than tilled soils.
- **Take care of soil microbes.** Soil microbes break down the chemical structures of organic matter as they consume it. Without the microbes' ability to break down chemical structures, the nutrients from organic matter will not be available for plants. Well-drained, aerated, and minimally-tilled soils provide a healthy environment for soil microbes. And of course, don't forget to provide these microbes with food: organic matter!
- **Practice crop rotation.** Crop rotation puts a different food source and increases the varieties of plants into the soil each year. This promotes a wider variety of soil organisms and prevents the buildup of pests and pathogens that attack individual crop families. If feasible, a garden should be on a three-year rotation of plant taxonomic families. In return, you should see higher yields and less crop loss due to pests and diseases.



*Garden success depends on soil.
©Lynda Richardson, USDA-NRCS*

Eric Derstine

Food Production: Muscadine musings



A well-maintained vine can produce 30 to 50 pounds of grapes a year. ©Mack Johnson

Native to the Southeast, muscadine grapes perform best in full sun and well-drained soil. Fruit set and production will suffer if the vines are shaded several hours each day during the growing season. Spring is a great time to plant muscadines. For the first two years after planting, the vines should be watered regularly during dry periods. Established vines are drought-tolerant and usually obtain adequate water from the soil even during dry periods. Water requirements are highest from bud-break until flowering. Place the trellis before planting. The vine consists of the trunk, permanent arms (cordons), and fruiting spurs. Periodically tie the young cordons to the trellis wire until each cordon is 10 feet long.

To hasten cordon development, pinch back the lateral shoots. Once the trunk's framework is established and the cordons have developed to full length, allow fruiting spurs to develop every 4 to 6 inches. Prune annually to maintain this framework, keep new fruiting wood, and prevent vines from becoming tangled and unproductive. Prune the lateral shoots produced during the previous summer to retain two to four buds. Bleeding at wounds may occur, but has not been shown to harm the vine. These spurs will produce new fruit-bearing shoots the following season. Soil test for accurate fertilizer recommendations and spread two-thirds of the recommended amount in a 60 square foot area around the trunk in mid-March, followed by the remaining third in May to June for established vines. For newly planted vines, place fertilizer in an 18-inch circle around the trunk two weeks after planting. Continue monthly until July.

— Mack Johnson

Pest Alert: Tobacco thrips spread TSWV

Tomato spotted wilt virus (TSWV) can be a major disease of tomatoes and other solanaceous crops in the Southeast. The virus causes small brown flecks to appear on leaves, progressing to general bronzing of leaves, plant wilting, stunted growth, and ultimately death. Tomato fruit infected with the virus exhibit conspicuous yellow or brown concentric rings on the surface. TSWV is spread by several species of thrips, but primarily tobacco thrips (*Frankliniella fusca*) in April and May.

Thrips (order Thysanoptera) derive their name from the distinctive (at least under magnification) fringed wings found on adults. Adults are tiny: just a few millimeters in the largest species. The larval stages of these insects feed inside plant tissue, at which point they become infected vectors of TSWV. Prepupa and pupa do not feed, but wings develop during these stages. Female tobacco thrips can lay unfertilized eggs, but those eggs only produce males. Mated females produce male and female offspring. Thrips have unusual, asymmetric mouth parts consisting of one large mandible that pierces plant tissues and smaller maxillae that partially digest and imbibe contents from ruptured plant cells. Thrips are difficult to control. By the time they are discovered or when symptoms appear, they have already fed and infected their hosts. Thrips can overwinter in cool-season and grassy weeds. Commercial growers rely on models and tools developed by Extension faculty in several states to monitor and manage potential thrips outbreaks. To combat tomato spotted wilt virus spread by thrips, home gardeners should grow resistant varieties of tomatoes (such as 'Crista', 'Bella Rosa', 'Top Gun', 'Talladega' and others), and remove any infested plants. If you suspect disease or pest problems, contact your local Extension center and Extension Master GardenerSM Volunteers in your county to assist with diagnosis and management options.



Tiny thrips can cause big problems.
©Robert M. McPherson, University of Georgia, Bugwood.org.

— Matt Jones

Lawns: Spring weed control

It is important to remember that Mother Nature pushes to add diversity to monocultural landscapes. If you desire a uniform, weedfree stand of turfgrass, be aware of when and where weeds arrive. The month of February has been especially warm and has given cool-season weeds an optimal environment in which to thrive. Unfortunately, controlling cool-season weeds at this point can be challenging as they are already well-established and ideal spraying days can be few and far between. Additionally, soil temperatures are beginning to reach the 55-to-60°F range in eastern North Carolina, which means early germination of two common grassy weeds: crabgrass and goosegrass. These weeds can be difficult to control with a postemergent herbicide once established in your lawn. For this reason, we recommend applying a preemergent herbicide to prevent these weeds from breaking the soil surface. Optimum control is achieved with a consistent application of a dinitroaniline herbicide (proflam, pendimethalin, oryzalin), dithiopyr (Dimension) or indaziflam (Specticle). Be sure to read the label carefully to determine application rates and watering requirements of the product you choose.

If you have weak areas of thin turf in your lawn, a better approach may be to use split applications of either an atrazine or simazine. That is, to apply a half rate in early March and again six to eight weeks later to suppress crabgrass and goosegrass without causing root clubbing the way dinitroaniline herbicides potentially can. By reducing competition from crabgrass and goosegrass this spring, your lawn will be able to thrive and form a dense cover, which is the greatest deterrent for unwanted weeds. Properly timed fertilizer applications and spot spraying of a few stubborn weeds will help achieve a desired result for the 2018 growing season. For more information about fertilizer rates and timing, visit content.ces.ncsu.edu/catalog/series/227/.

—Jason Weathington

Tips & Tasks

Crape myrtle pruning

On warm late-winter days, gardeners are anxious to get out in the garden and prune. We prune to keep plants healthy, increase flowering, improve aesthetics, and to keep plants in bounds.

The best time to prune is late winter to early spring because callus growth is maximized, which means quicker healing from wounds.

One plant that is often pruned extensively each year is the crape myrtle. I am not sure why this continues to happen. It surely is not to keep the plant healthy or for aesthetics. Maybe gardeners believe they need to keep the plant in bounds or that pruning will increase flowering. Have you ever noticed what actually happens?

Many spindly branches appear that break with the weight of the flowers or in wind. In extreme cold winters, the tree may die if pruned improperly. There really is no need to prune to keep crape myrtles in bounds. Crape myrtles have thousands of cultivars to choose from, including ground covers and trees that grow to 30 feet or taller.

Crape myrtles should be pruned only to remove any diseased, dead, crossing, rubbing, inward-growing, or damaged branches. Be sure to make proper pruning cuts by pruning the limb right above the branch collar. So instead of pruning your crape myrtles this year, sit back and wait for summer flowering.

—Cyndii Lauderdale



Crape myrtles come in many sizes and colors.
©Famartin, CC-BY-SA-3.0, Wikimedia Commons

Helping You Grow

For Gardening Help, Ask an Extension Master GardenerSM Volunteer

Extension Master GardenerSM Volunteers (EMGVs) are local citizens who volunteer their time and expertise to support their county Extension centers. EMGVs receive intensive training on a wide range of gardening topics and are prepared to answer your gardening questions with research-based, nonbiased information from the land-grant university system.

There is an NC State Extension Master GardenerSM program in almost every NC county. Contact your local NC Cooperative Extension center to talk to an EMGV and get advice on such gardening problems and questions as these:

- What is wrong with my plants, and what can I do about it?
- When should I plant?
- What is this weed?
- What is this insect that I found on my plant?
- When should I prune?

When you contact your county Extension center, be prepared to provide enough information for an EMGV to help you. For example, if you have an insect, plant, or weed that needs to be identified, bring a sample to the Extension center or email several clear, focused, and close-up pictures.

To talk with an EMGV in your county, visit ces.ncsu.edu/local-county-center and find your county Extension center.

—Charlotte Glen

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Plant Watch: Carolina SweetheartTM redbud



©Mountain Horticultural Crops Research & Extension Center, NC State University

Bring in the spring with this new redbud (*Cercis canadensis* 'NCCC1' PPAF). This recent release is like "nothing else on the planet," says Professor Tom Ranney of NC State, who developed the cultivar in cooperation with the NC Nursery & Landscape Association. Blooming in early to midspring with bright pink blooms, the foliage emerges in a carnival of colors—starting off purple and developing into variegations of white, green, and hot pink. As spring gives way to summer, the leaves turn fully green. Bean-like pods are on display in the fall. When mature, this redbud will reach 20 to 30 feet tall and have a 25-to-30-foot umbrella-like spread. It does best in zones 6 to 9 with full sun to part shade.

Looking for a WOW factor for your landscape? The Carolina SweetheartTM redbud will provide it.

—Kira Chaloupka

Incredible Edibles: Florence fennel

Florence fennel (*Foeniculum vulgare* var. *azoricum*) is a great multi-use plant that is both a vegetable and an herb. The thickened, bulb-like base can be boiled, roasted, used raw, or sautéed like a vegetable, and the foliage can be used like an herb. Both parts have a distinct anise-like flavor and aroma. Florence fennel does well in most parts of North Carolina, with spring planting dates for the NC piedmont and coastal plain between March and April and a late summer planting in July and August. In the NC mountains, plant in the spring between April and May. This warm-season annual does best from seed and shouldn't be confused with fennel (*Foeniculum vulgare*), which is a perennial herb that is often used as an ornamental and pollinator plant.

—Hanna Smith



Florence fennel. ©Quinn Dombrowski, CC BY-SA 2.0



Beneficial insects feed on pest organisms. ©John Flannery, CC BY-ND 2.0

Sustainability: Beneficial insects

Often when we see an insect, especially if it's on one of our plants, we automatically assume that it is going to eat our entire plant and we will be left with little or nothing to show for all our hard work. Although there are some "bad" bugs out there, most insects (about 99 percent) are either harmless or are actually beneficial. These good guys, such as lady beetles, assassin bugs, and wasps,

are considered natural enemies to pest insects. By feeding on pests, these natural enemies can provide a natural approach to pest control. If we create environments that encourage populations of these beneficial insects, then we have a leg up on the bad guys. This practice reduces the amount of insecticides that we must use to keep our plants healthy and is one step in **integrated pest management (IPM)**. Along with other techniques that are part of IPM, we can use beneficials to manage pests in an economically viable and environmentally sound way. Chemicals from insecticides can leak into and pollute water resources, especially when not applied properly. Insecticides can be costly as well. Another part of IPM is knowing the "economic threshold," the amount of damage or insects present that you can tolerate before preventive measures must be taken, such as using chemicals. Encouraging beneficial insects in your garden can help keep pests in check and keep them below the economic threshold.

—Hanna Smith