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

Content Editor and Team Leader  
**Lucy Bradley, Ph.D.**  
 NC State University  
 Campus Box 7609  
 Raleigh, NC 27695-7609

Managing Editor  
**Ben Grandon**

Regional Editor, Coastal  
**Matt Jones**

Regional Editor, Piedmont  
**Joanna Radford**

Regional Editor, Mountains  
**Donna Teasley**

Statewide Editor  
**Katy Shook**

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## Know Before You Grow

Landscaping is a major undertaking for homeowners, especially when they choose to do it themselves. It can be a great learning experience and a source of pride when the job is done and the gardener can stand back and say, "Look at what I've done." But landscaping can also turn into an overwhelming task with not-so-great results.

There is a simple phrase that I've used when speaking to gardeners who want to take on a new project: Know before you grow. If gardeners take the time to find out about the plants they want to use before installing them in the landscape, many problems could be prevented.

What type of information is important? The plant hardiness zone is one key to a plant's survival in a specific location. A plant that is labeled for the mild temperatures of USDA zone 8 or 9 simply won't make it through a winter in zone 6 or 7. Light and water requirements are also crucial.

Azalea lacebug problems would be virtually nonexistent if azaleas were planted in the shade instead of the sun. It is also important to remember that heat hardiness is just as important as cold hardiness.

Become familiar with the culture of the shrubs and trees to be planted. Look at insect and disease problems, and make a decision beforehand



Simple landscape plantings with attractive spacing can be just as attractive as complex arrangements. ©JR P, Flickr, CC By-NC-4.0

about the amount of potential pesticide applications you are prepared to make. Is the landscape going to be a formal one where lots of pruning is involved? Think about this: Would you rather be pruning or fishing on Saturday? Are you financially able to pay a landscape maintenance company to do the work, or are you the designated pruner for the family? These are all things that should be planned for when considering a new landscape.

A landscape planting can be amazingly low maintenance when well-researched plans are implemented carefully. Remember that simple is good and can be even more attractive than complex plantings. Learn to read tags and to use proper spacing. This saves many hours of future pruning.

Many gardeners think that they can make a plant into something that it is not. Such a gardener may win for a couple of years, but eventually that plant is going to fulfill its growth potential, whether that is growing in front of a window or out over a walkway.

The *NC Extension Gardener Handbook* includes a chapter on landscape design that offers lots of good advice on planning a landscape: **content. ces.ncsu.edu/extension-gardener-handbook.**

A landscape is an endlessly changing thing, as it should be. It doesn't have to be perfect to be pleasing, but always remember my favorite piece of advice: Know before you grow.

—Donna Teasley



A formal landscape can involve lots of pruning to keep plants symmetrical and in scale with other landscape elements. ©Roy Ostling, Flickr, CC By-NC-ND-2.0,

## Extension Showcase

### Junior Master Gardeners attend summer camp

The summer of 2017 marked the 2nd Annual Cumberland County 4-H Junior Master Gardener (JMG) Camp. Over the course of this five-week camp, students met at the Cape Fear Botanical Gardens each Friday to experience nature-based learning. For many of these children, this was their first time building a garden trellis for peas, chasing butterflies with a net, picking figs off the tree, and catching tadpoles in a stream. The camp was an effective, fun, and engaging way to learn about the natural world for all involved.

On July 14, 37 students were recognized by Cumberland County Cooperative Extension as Certified Junior Master Gardeners. When asked about their favorite activity, the most common reply from the campers was, "EVERYTHING!" Thank you to all of our Extension Master Gardener Volunteers, parent volunteers, and of course, the JMG campers for your hard work and dedication. See you next year!

To learn more about the Cumberland County Junior Master Gardener program, please visit our website at [cumberland.ces.ncsu.edu/](http://cumberland.ces.ncsu.edu/) For more information and resources about youth gardening from NC State Extension, visit [gardening.ces.ncsu.edu/youth/](http://gardening.ces.ncsu.edu/youth/).

—Jason Weathington



[extensiongardener.ncsu.edu](http://extensiongardener.ncsu.edu)

©Cumberland County JMG program

## Smart Gardening: Gardening in sandy and acidic soils



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"Love the place you live" is a great adage when you have the perfect gardening conditions. But when you live in an area with sandy and acidic soils, the love becomes a little more challenging. Some simple steps can be taken to improve garden soils, or you can select species already well-adapted to these soil conditions. Sandy soils have larger soil particles and larger pore spaces between particles relative to other soil types. This promotes rapid drainage. Water soaks in rapidly and goes deeper than in other soils, and also evaporates more quickly. Therefore, water plants grown in sandy soil more frequently. Watering deeply provides moisture to support deep root growth, increasing plants' ability to survive drought conditions.

While sandy soils allow vegetables to develop potentially extensive root systems, they may not provide enough nutrients for optimal production. Water draining through sandy soils takes soluble nutrients away with it. In addition, sandy soils tend to be acidic (low pH), which can diminish the availability of certain plant nutrients. Taking a soil sample every two years and following the recommended applications of lime (to raise pH) and fertilizers will help mitigate nutrient deficiencies. Adding organic matter (such as compost) will improve the ability of sandy soils to retain both water and nutrients. For more information on composting, visit the NC State Extension composting portal: [composting.ces.ncsu.edu/home-composting/](http://composting.ces.ncsu.edu/home-composting/). Sandy soil also becomes hot near the surface. Consider applying 2 to 4 inches of mulch to moderate soil temperature, reduce weeds, and add organic matter. Rather than modify the soil, you can select plants well-adapted to well-drained and/or acidic soils. Azaleas, rhododendrons, blueberries, and hollies thrive in acidic soils. For a list of additional trees and shrubs, see this article from Virginia Tech: [pubs.ext.vt.edu/430/430-027/430-027.html](http://pubs.ext.vt.edu/430/430-027/430-027.html).

—Shannon Newton

## Food Production: Enjoy the rewards of garlic

Garlic is a popular herb that can be used for culinary and medicinal purposes. There are two main types of garlic: softneck and hardneck. Softneck is the type typically available in grocery stores because it stores well and has excellent flavor. Garlic is planted in November through December in eastern North Carolina. Plant cloves pointed side up, 1-inch to 2-inches deep and 2- to 6-inches apart. Cloves must be planted early enough for a root system to develop before winter. Buy cloves for planting from a garden center or online. Garlic purchased from grocery stores may sprout poorly. The plants will grow rapidly as spring temperatures rise. For the largest bulb possible, break off flower stalks. These young, unopened flower buds, called scapes, are edible and often used in salads. If you plan to store some bulbs for planting the following year, leave them whole and wait to break apart into individual cloves until just prior to planting.



Harvest garlic when the tops begin to discolor and dry. ©Julia Newton,

Harvest garlic when the tops begin to discolor and dry, around early June. Bulbs unsuitable for storage (small or deformed ones) can be peeled and eaten fresh. When properly cured, garlic keeps well under a wide range of temperatures. Optimum storage conditions are 32°F to 35°F with 60 to 70 percent humidity. Other storage options for garlic include freezing, in wine (dry white or dry red), or in vinegar (including wine vinegar). Try adding spices to the wine-and-garlic mixture by using peppercorns, chili flakes, cumin, or bay leaves. Garlic can also be roasted. Storage life can be up to three to five months depending on the storage option. For detailed storage information, refer to this University of California Davis publication: [ucfoodsafety.ucdavis.edu/files/250352.pdf](http://ucfoodsafety.ucdavis.edu/files/250352.pdf).

—Cyndi Lauderdale

## Pest Alert: Pecan weevils

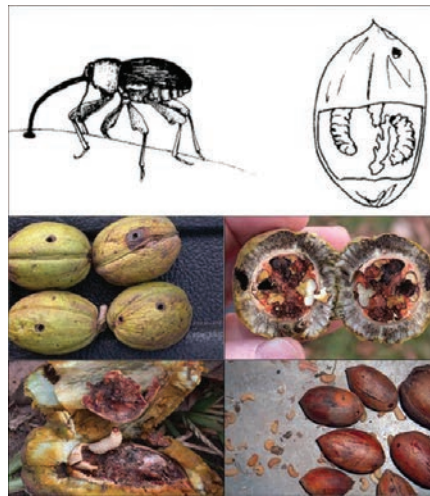
Pecan weevils are reddish-brown beetles with long, slender snouts and thin legs. They attack the growing nuts on pecan trees and can quickly destroy a developing crop. Proper scouting methods coupled with timely pesticide applications can help prevent pecan weevils from destroying your crop this season.

Pecan weevils emerge from the soil after the first significant rainfall in August and continue to attack pecans through September. An easy way to monitor for pecan weevils is to tie a burlap cloth around the trunks of trees in layers. Check the burlap flap daily for weevil activity. You will be able to see the adult pecan weevils climbing up the burlap cloth towards the developing pecans. It is also a good practice to monitor pecans that fall from the tree and discard any with damage.

Once detected, pecan weevils can be controlled by spraying liquid applications of carbaryl on the ground underneath trees out to the dripline, as well as up the trunks of pecan trees as far as you can reach.

Repeat applications every seven days through mid to late September. Dust forms of carbaryl are not as effective as liquid sprays for controlling pecan weevil, and there are no effective organic methods for control. For more information about pecan cultivation, refer to *Growing Pecans in North Carolina* (AG-81): [content.ces.ncsu.edu/growing-pecans-in-north-carolina](http://content.ces.ncsu.edu/growing-pecans-in-north-carolina).

—Brad Hardison



Pecan weevils puncture developing nuts, and their larvae damage the kernels.  
©NC State University (M. Parker, K. Sorenson, J. Brock. 2016. *Growing Pecans in North Carolina*. Raleigh: NC State Extension.)

## Lawns: Turf quality from the ground up

Perhaps the greatest opportunity to improve overall turf quality exists at the end of summer. Core aeration and potassium (K) application can have a tremendous influence on the overall health of your lawn.

A major factor in fertilizer uptake is having a healthy root system. Compacted soils create three major problems: restricted root growth, reduced oxygen supply, and decreased nutrient absorption. Compaction can occur from excessive foot traffic and movement of heavy equipment. Core aeration, the process of removing small cores of soil in a lawn, can help alleviate soil compaction. You can aerate small areas of your lawn with a spading fork or a more specialized sod-coring tool. Renting a power-driven core aerator is more practical and efficient for larger areas. The plugs of soil removed from coring can be left on the surface of the lawn.

Core aeration pairs well with a potassium application in September. Potassium's role in plant growth goes far beyond root development. Potassium also increases resilience against disease, provides much of the osmotic pull that draws water into plant roots, and improves the rate of photosynthesis. NC State Extension recommends an application of 1.6 pounds of muriate of potash (0-0-60) or 2 pounds of potassium sulfate (0-0-50) per 1,000 square feet in September.

It is important to apply these fertilizers while soil temperatures are still above 80°F to maximize potassium uptake. Taking soil samples every two years will help provide a more precise baseline of the nutrient content and acidity of the soils in which your turf is growing. Properly fertilized lawns are more resistant to pests, diseases, and abiotic disorders.

For more information about turf fertilization programs, visit [turffiles.ncsu.edu/publications](http://turffiles.ncsu.edu/publications), where you can find lawn maintenance calendars for all major warm-season turfgrass species.

—Jason Weathington

## Tips & Tasks

### Turn leaves into plant food

Nothing upsets my early-onset grumpiness each fall more than when I see curb sides lined with plastic bags crammed with leaves destined for landfills.

Mulched leaves, when added to gardens, provide essential minerals to soil and increase soil moisture retention. Using leaves in this way provides many other benefits as well, not to mention diversion of "green waste" from our landfills.

- Mulch fallen leaves with a mower and bagger attachment. An initial pass *sans* bagger, followed by a second pass with bagger, will ensure that leaves are finely chopped and ready to add directly to garden beds or compost bin. There are also reasonably priced leaf mulchers available.
- Apply 3 inches to 6 inches of mulched leaves to garden and vegetable beds, being careful not to completely cover exposed root crowns.
- Mulching leaves on turfgrass is a fantastic way to get lawns ready for winter. Aside from the benefit of organic material, some reports indicate a reduction in the occurrence of winter weeds after three years of mulching leaves onto lawns.
- Avoid using leaves or clippings that may have recently been treated with herbicides.

—Sam Marshall

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## Helping You Grow

### Tools for curious gardeners

Gardeners are naturally inquisitive about the flowers, trees, and berries they can grow. Curiosity helps us select plants appropriate for our landscapes. An interest in plants can eventually stretch far beyond the botanical. You may start to notice the butterflies and bees flying in the garden, perhaps even the different birds eating dried seed heads. Before you know it, you're on your way to becoming a bona fide naturalist.

A naturalist studies the natural world, including birds, insects, trees, mushrooms, and other living species. The key to being a good naturalist is to fully observe the world around you. Luckily, there are some amazing tools to assist you, including apps that can be downloaded onto your phone.

Peterson Field Guides ([petersonguides.com](http://petersonguides.com)) and the National Audubon Society guides ([audubon.org/national-audubon-society-field-guides](http://audubon.org/national-audubon-society-field-guides)) are two excellent resources that cover a range of plants, birds, and insects.

Another excellent tool is iNaturalist, which allows people to post photos of their field observations at specific locations: [inaturalist.org](http://inaturalist.org). On a recent trip to Maine, I was able to learn about some of the plants I saw blooming by referencing photos on iNaturalist. We have so many things to watch and learn about in this world, and these tools can assist in building your identification skills.

—Meghan Baker

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## Plant Watch: You can't beat kale



'Toscano' kale is full of flavor and texture.  
©Jeana Myers

Kale (*Brassica oleracea*) is a very hardy, super-nutritious, and delicious group of vegetable greens we can grow easily in our NC gardens. You can plant seeds in late summer or seedling transplants in September or October. Once the plants are established and growing, you can enjoy them through the winter in salads, soups, smoothies, or stir-fries. The stiff curly-leaved kale variety with blue-green leaves is commonly found in garden centers. A couple of other excellent varieties to try are 'Red Russian' kale, which has bright purple-red stems and leaf veins and a smoother leaf, and 'Toscano' kale, also known as dinosaur or lacinato kale. 'Toscano' kale is slightly less cold hardy than the others, but its crumply-textured and lance-shaped leaves are tender and flavorful. If you don't get them planted this fall, you can put seedlings in next spring and enjoy kale until hot weather arrives.

—Jeana Myers

## Incredible Edibles: Wild world of broccoli

Broccoli has been cultivated in some form for the past 8,000 years. It originated on the chalky bluffs of England and has been bred from an ancient relative of cabbage to create the vegetable we all know and love today. Broccoli gained its popularity here in the United States in the early 1900s when scientists discovered that it was loaded with vitamins and nutrients at a much higher rate than its blanched cousin—the cauliflower. Today, broccoli is recognized as an extremely healthy vegetable that is rich in vitamins A and C as well as various anticarcinogens (anticancer compounds). Whether eaten raw or cooked, broccoli can provide benefits to human health, many of which are still being discovered. Broccoli is also easy to grow in the home garden. With a growing season of roughly 90 days, broccoli is ideal for planting in the early spring or early fall. Broccoli that matures during colder evenings will have higher sugar levels and tighter heads. Starting from transplants will allow your plants to grow quickly and provide all of the broccoli you and your family need throughout the year.

—Ben Grandon

## Sustainability: Beyond lawns—grasses for your garden

While homeowners are familiar with turfgrasses for lawns, gardeners should consider adding ornamental grasses to their yards. Many native grasses are available that offer benefits to pollinators and wildlife. Not only will the grasses add height and winter interest to your garden; their seeds will provide food and their foliage offers shelter for birds and other wildlife. Once established, grasses can tolerate heat and drought. Many gardeners find that ornamental grasses are easy to care for, with little pressure from insects and diseases. Most ornamental grasses simply need to be cut back in the winter or very early spring. After cutting back grasses, gardeners can add the dried foliage to the compost pile. A variety of grasses are available to gardeners to fit various garden spaces. Taller grasses, including many cultivars of switchgrass (*Panicum virgatum*), can be used to create screens. Smaller varieties, such as 'Little Bunny' fountain grass (*Pennisetum alopecuroides*), add texture to garden beds. Grasses offer color throughout the seasons, from green spring foliage to fall color. Switchgrass 'Shenandoah' offers purple fall color, while big bluestem (*Andropogon gerardii*) and little bluestem (*Schizachyrium scoparium*) add shades of blue. As you visit gardens this fall, take note of the variety of ornamental grasses in North Carolina and consider adding a few to your garden.



*Pennisetum alopecuroides* adds texture to a garden. ©Leslie Peck

—Leslie Peck