

FALL 2018

## COASTAL NEWS

Arthritis and gardening

Strawberries

Herbs gone spiral

Diamondback moths

Embracing dormant lawns

Plant peonies now

## STATE NEWS

Fall color: The last big hurrah

Butternut squash

Kohlrabi

Herbicide residue

Need tree work done?

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

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## Fall Color: The Last Big Hurrah

What does a gardener look for when planning a landscape? Flowers, texture, growth habit, and size (let's hope), growing needs such as sun or shade, deciduous or evergreen plants, and many other characteristics. But many gardeners never consider the fall characteristics of the trees and shrubs they plant. Everyone wants that "wow" look for the spring with hopes that the landscape will continue to be pleasing as the growing season progresses. But by the time fall arrives, gardeners are very often tired of the challenges of the summer and don't give much thought to what a great fall landscape might look like. It's a shame because fall is the last big hurrah of the growing season.

Many great plants are readily available with fall attributes that are truly amazing. A perfectly nice and respectable tree or shrub can all of a sudden become the star of the show when fall arrives. Look at the beautyberry (*Callicarpa americana*), a nice-looking shrub but sort of ordinary until those massive clusters of bright-purple berries appear. Then everyone wants to know what it is and where you got it—the greatest compliment for a gardener! There are as many different viburnums as there are aphids on a rosebud. And aside from their fragrant flowers in the spring, many viburnums take a second bow when fall rolls around. Their fall foliage is striking and bold—an absolute asset to the fall landscape. Many of our maples are fall stars also, as are chokeberry, Virginia sweetspire, oakleaf hydrangea, smoketree, sweet autumn clematis, and fothergilla.



Beautyberry (*Callicarpa americana*).  
©Forest and Kim Star, CC BY2.0



Ginkgo tree (*Ginkgo biloba*). ©Maxmaria, CC BY-NC-ND-2.0.



Oakleaf hydrangea (*Hydrangea quercifolia*). ©K M, CC BY-2.0.

Many perennials also wait for the fall to do their best. Let's not forget the gazillion heucheras that have become garden staples with their brightly colored leaves. Russian sage, many of the rudbeckias, lavender, butterfly bush, hardy ferns, perennial sages, cosmos, hardy mums, and countless others give the fall garden a second chance, reveling in the cooler temperatures and gentler rains.

But, perhaps, the king (or queen) of all the fall showoffs is the ginkgo tree (*Ginkgo biloba*). The ginkgo is a massive tree growing up to 80 feet high with brilliant, golden-yellow leaves and not necessarily suited to all home landscapes. But with the introduction of the 'Goldspire' ginkgo, with its columnar growth habit and a mature height of 16 feet with a 5-to-6-foot spread, most anyone can now have a ginkgo in their fall collection.

There are many more plants that will add fall beauty and interest to the home landscape. With a little research the gardener can put some fireworks in the garden before winter arrives.

## Extension Showcase

### Herbs gone spiral at the Pitt County Arboretum

The Pitt County Extension Master Gardener Volunteers<sup>SM</sup> (EMGVs) are proud to have completed their latest addition to the Pitt County Arboretum: the Herbs Gone Spiral demonstration garden.

Herbs Gone Spiral maximizes efficiency by hosting several herb plantings in a small space while adding to the aesthetic value of the arboretum with a hardscape.

Basil, curry, hyssop, oregano, parsley, and thyme are all herbs you'll find growing here.

The structure is composed of flagstone arranged in a spiral reaching 2½-feet tall. The media in the spiral is composed of compost and topsoil.

The top of the spiral provides a microclimate for plants that prefer full sun and well-drained soils, while the bottom of the spiral is well-suited for plants that prefer partial shade and higher soil moisture.

Thanks to the hard work of the Pitt County EMGVs, this garden received the 2018 NC EMGVA Madeline Collier Landscape Garden Design Competition Award.

Come and see it for yourself the next time you're in Greenville!

—Eric Derstine

©Eric Derstine



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## Smart Gardening: Arthritis and gardening



*Raised beds are one of many strategies used by gardeners with arthritis.*  
©Kathleen Moore, CC BY-2.0

Those of us who love life in the garden know what enjoyment it brings. Although the garden may beckon as strongly as ever, the tasks involved—such as pulling weeds, pushing wheelbarrows, digging planting holes, moving heavy pots—become cause for concern. After all, the pages of the calendar turn in one direction for us all. But the idea of giving up gardening, our “happy place,” is unthinkable for most of us soil soldiers. However, many of us with arthritis pain or limits still enjoy this popular pastime. Gardening is also great for maintaining range of motion, bone density and strength, joint flexibility, and overall quality of life. With a little education, the right tools, and some out-of-the-box thinking, you can tailor your designs and develop sensible plans that retain the activities you love.

Work smarter, not harder, in the garden by preplanning your garden and activities. The type, size, and location of the garden matters, and so does plant selection. Rather than ground-level plots, consider raised beds, containers, or tower gardening. Next,

select the right gardening tools to help minimize pain and stress. Reduce the physical impact on the back, knees, shoulders, arms, wrists, and hands. Ergonomic tools have features designed to keep your body in a natural, neutral, comfortable position. Fit the tool to the user with regard to the tool's weight, handle size and shape, overall length, and gripping surface. Then prepare your body for the gardening activities, and set the stage to manage arthritis discomfort while you're in the garden. Garden early, wear the right gear, hydrate, be aware of your posture, stretch often, and take breaks. Remember that gardening is good therapy, plus you get tomatoes! Read more about arthritis basics; gardening pre-planning, tools, and accessories; and small-scale fruit and vegetable production at [agrability.org/resources/arthritis/](http://agrability.org/resources/arthritis/).

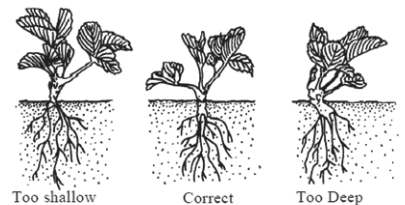
—Minda Daughtry

## Food Production: Strawberries

Strawberries are an excellent addition to the home garden and are chock full of vitamins and minerals. One cup of strawberries provides over 130 percent of the recommended daily allowance of vitamin C at a mere 55 calories. Strawberries also contain measurable quantities of ellagic acid, which has inhibiting effects on chemically induced cancer in laboratory studies. Strawberries perform well in gardens, raised beds, and containers.

Strawberries thrive in sandy-loam, well-drained soils with a pH between 5.5 and 6.0. Other soil textures can be amended by adding organic matter, such as leaves, chopped straw, compost, or composted manure to grow strawberries. After amending the soil, choose disease-free certified plants from a reliable nursery for transplanting. Popular varieties for North Carolina include 'Atlas', 'Titan', 'Earlibelle', 'Chandler', and my favorite, 'Sweet Charlie'. Avoid everbearing cultivars that are marketed to produce two crops per year. They do not perform well in the heat and humidity of eastern North Carolina. Strawberries can be planted any time from October to March in eastern North Carolina. Place the plants in the soil so the roots are spread out and facing downward. Cover the roots with soil until the crown is just above the soil surface and water in. One of the most common reasons for strawberry failure is planting too deep, which causes crown rot. Spring frosts will normally not harm new strawberry plants whereas blossoms are injured at temperatures below 31°F. Blossoms can be protected from frost by covering plants with 2 to 3 inches of straw and old cloth or row covers during late winter and early spring. For more information on growing strawberries, refer to the NC State Extension publication *Strawberries in the Home Garden* and visit the NC State Strawberry Growers Portal: [strawberries.ces.ncsu.edu/](http://strawberries.ces.ncsu.edu/).

—Brad Hardison



*Strawberries perform well when planted at the proper depth..* ©NC State Extension



## Pest Alert: Diamondback moths

Cruciferous crops, including broccoli, cabbage, collards, and kale, are delectable to both people (at least adults) and several caterpillar species. The diamondback moth (*Plutella xylostella*) is among the more common and potentially destructive pests of crucifers. As their name suggests, adult moths feature a cream-colored band that resembles a series of diamonds down the center of their slender, brown-gray wings.



*Diamond moth larvae feed on leaves and can cause significant damage. ©Merle Shepard, Gerald R. Carner, and P.A.C Ooi, Insects and their Natural Enemies Associated with Vegetables and Soybean in Southeast Asia, Bugwood.org*

Females lay eggs near the junction of leaf veins and on the upper surfaces of leaves. Their green larvae are smaller than other cruciferous pest caterpillars, and are distinguished by a pair of hind prolegs that protrude like a 'v' on their rear ends. Unlike similar-looking cabbage loopers (*Trichoplusia ni*), which move like inchworms, diamondback moth caterpillars writhe violently when disturbed and rappel off plants on strands of silk to escape enemies. Larvae pupate in cocoons on lower, outer leaves. Many generations can occur each year. While small, larvae tend to be numerous on individual plants and can cause significant damage. Feeding may be favored on the underside of each leaf, leaving the upper leaf surfaces intact. In high numbers, smaller leaves may be completely consumed except for the veins. Feeding on seedlings may disrupt head formation in cabbage and broccoli. Thought to be introduced to North America in the mid nineteenth century, the diamondback moth was historically a relatively minor agricultural pest compared to other caterpillars. But overuse and misapplication of insecticides caused resistance in this moth to many insecticides, especially pyrethroids. In healthy ecosystems, where broad-spectrum insecticide use is minimized, predators (ladybugs, lacewings, and spiders) and parasitoid wasps help control population outbreaks. *Bacillus thuringiensis* var. *kurstaki* (*B.t.*), a microbial insecticide that only affects Lepidopteran larvae, can be also be used to reduce damage in vegetable gardens. *B.t.* is approved for use on USDA certified organic farms. Always read and follow label directions.

— Matt Jones

## Lawns: Embracing dormant turfgrass—a winning strategy

Wouldn't it be nice to have a green lawn year-round? Residents of states a little further to our north and south have this luxury. North Carolina, however, is considered to be in the "transition zone" for turfgrass. In eastern NC, this means that our warm-season lawns are dormant or transitioning into or out of dormancy for five months of the year. But our lawns do not have to be green all year for us to enjoy them. Here are a few things to consider this fall:

- Surround your turf space with plant material that adds winter interest. Plants that provide interesting foliage, flowers, berries or bark can be very nice complements to an area of dormant turf. Use species of evergreens with various colors, textures, and forms, and incorporate different shrubs that bloom in fall, winter, or spring.
- Raise the cutting height as the turf begins to enter dormancy. This practice will provide the turf with added protection against winter injury, which tends to occur as the turf begins to green up and is injured by a late freeze. Denser shoot growth buffers against swings in temperature.
- Keep the lawn free of winter weeds. Fall is a great time to control cool-season weeds using preemergent and postemergent herbicides. Warmer weather improves herbicide uptake, and weeds are smaller and easier to control. Ask your county Extension agent for advice on specific products, timing, and application methods.
- If you choose to overseed your bermuda or zoysia lawn with ryegrass, use a lighter rate. A green lawn in fall and winter can still be achieved for those who have bermuda or zoysia as their base turf by overseeding with ryegrass. A heavy seed rate will add color and density, but this can be a transition challenge for the base turf the following year. Therefore, a rate of around 10 pounds per 1,000 square feet is recommended to allow your lawn to grow out of dormancy much faster next spring.

—Jason Weathington

## Tips & Tasks

### Plant peonies now for summer color

The peony is a very beautiful long-lived plant. Select carefully and plant in a permanent location in September. Much like planting a tree, peonies become a permanent fixture in your garden. If you already have peonies in your garden, you know they are easy to grow and require minimal care.

- Do not fertilize until plants have been in the ground for about five years. Check your soil pH with a soil test and add lime as needed. Mulch around the plants to help keep the roots cool in our hot summers. Compost and bone meal are good supplements for your peony plants.
- As peonies grow in the spring, be sure to provide some type of support for the foliage and leaves. This support will keep them from falling to the ground.
- When the flowers begin to fade, remove the spent flowers and place in the compost bin. This practice will minimize disease problems.
- There are three basic types of peonies: Herbaceous *Paeonia lactiflora* types grow to 1½-to-2-foot tall and bloom in late April. *Paeonia suffruticosa* types are tree peonies grafted onto herbaceous root stock, with many large flowers. Intersectional 'Itoh' peony flowers are held upright and don't require support.
- Cut back to ground level in the fall after the first frost so the plants come back larger each spring.

—Shannon Newton

*Paeonia lactiflora*. ©Ting Chen, CC BY-SA-2.0, www.flickr.com



## Helping You Grow

### Need tree work done? Call an arborist

We get a lot of questions in our office about trees, everything from why a tree is dying to how it should be pruned. There are times when clients need help pruning a tree or determining if it is a hazard that should be removed. While Cooperative Extension is a great resource for research-based information, there are some things we just can't do. One of them is going out and pruning trees for clients, especially big trees. And even if a tree is in danger of falling, we can't go out to someone's yard and cut the tree down. In Extension, though, we are about finding the answers. If we can't provide the solution, we find someone who can. One of the resources that we rely on when it comes to trees is a list of certified arborists.

Certified arborists get their credentials through the International Society of Arboriculture (ISA) and are qualified professionals who can do everything from fertilizing to applying pesticides, to pruning or taking down a tree, to testing the integrity of the heartwood to see if the tree is in danger of falling unexpectedly. You can call your county Extension center for a list of arborists, or you can find them using the search function on the ISA website: [treesaregood.org/findanarborist](http://treesaregood.org/findanarborist).

*How to Hire a Tree Care Professional* (NC State Extension publication AG-691) provides more information.

—Hanna Smith

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## Plant Watch: Butternut squash

What welcomes cool days more than a savory soup? One delectable soup base you can grow in the garden is butternut squash, which can be planted in the spring and again in midsummer for a fall harvest. This squash is considered a healthy powerhouse option, loaded with vitamin C, beta-carotene, and fiber. It grows easily when seeded directly in the ground with two to three seeds per hill. One plant can yield four to five fruits, each weighing up to 5 pounds, in just 90 to 100 days. This winter squash stores well but should not be harvested until it has become a dull-tan and you cannot indent the rind with your fingernail. Storage temperatures around 50°F and low humidity will increase shelf life up to three months. You can also enjoy butternut squash roasted or pureed.



*Butternut squash makes a delectable soup.*  
©Veronique, CC BY-SA-2.0.

—Mack Johnson



*Crunchy kohlrabi tastes sweet.* ©Anita Martinz, Klagenfurt, Austria, CC BY-2.0

## Incredible Edibles: Kohlrabi

Sometimes called "stem turnip," this old-time vegetable is unfamiliar to many gardeners. A fast-growing member of the Brassica family, kohlrabi can be grown in the spring and fall. Its unusual growth habit makes this vegetable an eye-catching specimen for the kitchen garden. The edible portions of the plant are the swollen stem just above the soil level and the small leaves with long petioles that sprout out of the top of the bulb. Harvest bulbs that are 2 to 3 inches in diameter while the flesh is tender and sweet. The crunch of raw kohlrabi is a great addition to a crudité plate or salad. Kohlrabi tastes similar to cabbage and can also be enjoyed lightly steamed or roasted.

Use transplants for spring gardens and direct-seed eight weeks before the first frost for fall gardens. Kohlrabi benefits from a rich organic soil. Keep the soil moist over the growing period to ensure tender flesh development. Plant four to five plants per person to supply plenty of delicious and nutritious kohlrabi for your table.

—Mary Jac Brennan

## Sustainability: Herbicide residue

If your tomatoes and beans have curling, cupped, and stiff leaves, they may have been exposed to tiny amounts of residual herbicide from the compost, manure, or straw you added to your garden. Certain herbicides used to kill broadleaf weeds in pastures can break down slowly and cause problems for home vegetable growers. Laboratory analyses for herbicides are expensive, but you can do your own "bioassay" to determine if your compost contains any residual herbicides. Take six 4-inch pots and fill three with commercial potting soil. Fill the other three with half potting soil and half compost (or manure). Make sure your compost or manure is a mix from random places within the pile to ensure a representative sample. Plant bean seeds if it's summer time or pea seeds if it's cool weather. Three seeds per pot is sufficient. Water and let them grow until they have at least three sets of true leaves. If you see abnormal leaves on the plants grown in the compost mix but those grown in the potting soil are normal, you are likely to have trace amounts of herbicide in the compost. If both groups are normal, other causes for leaf curl and cupping can include herbicide drift, insect damage, or viral infections. For more information on this bioassay and what to do if you have residual herbicide in your compost, see [content.ces.ncsu.edu/herbicide-carryover](http://content.ces.ncsu.edu/herbicide-carryover).



*Curling leaves? Bioassay for herbicides.*  
©Jeanna Myers

—Jeanna Myers