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

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Spooktacular Plants

Fall is known for nights full of fright, but don't worry. These plants won't bite! Try incorporating these ghoulish plants into your landscape and provide frightful fun for kids of all ages.

Spider flower, *Cleome hasslerana*, is a low-maintenance annual that performs best in sun to partial shade and moist soil. Purple and white blooms are produced summer to frost with 1-inch long petals and extended stamens that curve to give the plant its spiderlike resemblance. Plants reach a height of 3 to 4 feet with a 2-foot width, making them suited for the back of the garden. They also make great cut flowers.

Eyeball plant, *Spilanthes oleracea*, is sure to be a conversation starter in the garden. The globular, golden-yellow flowers are centered with a red "eye." A low, spreading growth habit occurs when eyeball is planted in full sun to light shade. Blooms are produced in the spring along the ends of extended stems that are surrounded by olive-colored leaves. This annual is thought to have been used in folk medicine as a toothache remedy, but it is best used today as a groundcover or in containers.

Ghost fern, *Athyrium* sp. 'Ghost,' derives its name from the silvery fronds of foliage that are produced through the entire growing season. The clumping fronds will reach an average height and width of 2 to 3 feet with little maintenance and care. As a woodland plant, however, ghost fern prefers moist soil and part to full shade.

Bloodtwig dogwood, *Cornus sanguinea*, drips with color throughout the year. Creamy-white flowers are produced in late spring, followed by purple fruit and red fall foliage. The color contin-



Eyeball plant provokes conversation in the garden. ©Thomas Knox, creativecommons.org, CC-BY-NC-SA-2.0.



Bloodtwig dogwood displays creamy flowers in late spring and blood-red stems in winter. Top: @Je Wyer, CC-BY-NC-ND-4.0. Bottom: @Bathyporeiai, CC-BY-NC-ND-4.0.

ues through winter as stems fade from yellow to red. Use in mass plantings for impact. This medium to large shrub prefers sun to part shade and well-drained soil.

Devil's walking stick, *Aralia spinosa*, will provide year-round fright with its stiff, thorny branches that reach an average height of 15 to 20 feet in the landscape. This deciduous tree species will tolerate a wide range of soil conditions and sun exposure, and its leaves will produce yellow to red-orange fall color. In summer the tree is highlighted by clustered, creamy-white flowers that are followed by purple to black fruits. Besides attracting onlookers, the plant also attracts bees, butterflies, and birds.

Skullcap, *Scutellaria incana*, is a native perennial that prefers moist soil and sun to light shade. Stalked, purple to blue blooms are produced summer to fall against small leaves covered with silvery hair. The plant will reach an average height of 2 to 4 feet in the garden. You can enjoy teasing garden visitors with its frightful name while they enjoy its delicate blooms. —Katy Shook

Extension Showcase

Western North Carolina Gardening Symposium

Registration is now open for the 2016 Western North Carolina (WNC) Gardening Symposium to be held at the DoubleTree Hotel Asheville–Biltmore on Wednesday, October 12, 2016.

The theme this year is **Our Gardens in a World of Change**. Speakers will speak on developing resiliency as we learn to cope with changes that affect our gardens and ourselves.

Keynote speaker Laura Lengnick is a soil scientist and leader in sustainable agriculture and climate resilience planning. She will open the day with a talk entitled “Cultivating Resilience in a World of Change” and close the program with “What Path to a Resilient Future.” Visit cultivatingresilience.com to learn more about Laura and her work.

Tamara Houston of NOAA will speak on climate and weather variations in WNC. Meghan Baker, small farms Extension agent in Buncombe County, will speak on pollinators at risk, and Linda Alford, Buncombe Extension Master Gardener Volunteer, will speak about ways to thrive, not just cope, in the face of change.

This program offers five hours of continuing education credit for Extension Master Gardener Volunteers. The fee is \$50 until September 5, 2016, and \$55 after that date. All registrations must be received by October 5, 2016. The registration form is available on the Buncombe County Master Gardener Volunteer website: www.buncombemastergardener.org.

—Alison Arnold

Smart Gardening: Cover crops feed the soil



Cover crops planted in September build soil health during the winter.
©USDA—NCRS, CC-BY-ND-2.0

Every gardener knows that a bountiful harvest depends on soil fertility. Fertilizers help, but they don't provide the complete solution. Continued use of fertilizers like 10-10-10 (a product that is 10% nitrogen, 10% phosphorus, and 10% potassium) may result in a buildup of phosphorus or potassium while not delivering all the nitrogen vegetables need. A cover crop in the gardening rotation is the best solution for improving soil fertility while building long-term soil health. Nitrogen is often the most limiting nutrient for plant growth. Ironically, nitrogen is also the most abundant element in the air, but it is in a molecular form plants cannot use. Nitrogen-fixing bacteria associated with the roots of legumes (beans, clovers, vetch, peas, and others) converts nitrogen from the air into a form plants can use.

Some legumes (like soybeans) are grown during the summer months, while legumes used as cover crops—such as crimson clover, hairy vetch, and winter pea—can be planted in September and build soil health in your garden beds all winter. In addition to growing nitrogen, cover cropping will improve your garden's drought resilience with improved water infiltration, greater water holding capacity, and deeper rooting zones. Garden beds with cover crops in the rotation act like giant sponges. During a heavy rain, water percolates into the upper soil layers and can quickly flow into the deeper layers of the garden bed. This sponge effect allows your garden to take advantage of cloudbursts and then slowly release that water to your veggies during dry periods. We grow food for ourselves and our livestock, why not grow something for our crops as well?

—George Place

Food Production: Growing apples

It will not be long before summer vegetable gardens start to fizzle out and fresh local fruits and vegetables will be harder to find. Local apples are usually abundant in the fall because that's when they ripen. There are a couple of factors to consider before planting if you are interested in growing your own apples. Apples need at least two different varieties to insure proper pollination. You need to make sure the different varieties bloom at approximately the same time to maximize good pollination. If you order your trees online, most companies will have charts showing which varieties are most compatible.



©Bill Hanlin, Image 0114

Another factor to consider is the mature size of the tree. Mature apple trees can range in size from dwarf trees that are 10 to 12 feet tall to full size trees that can get up to 30 feet tall. The size of the tree is dictated by the rootstock that the variety is grafted onto. And, if you order trees, there can be a number of rootstocks to choose from. Nurseries should be able to tell you which rootstock will give you the tree you want. Probably the most important factor to think about is the variety. Again, there are many varieties to choose from, including heirloom, standard, and new varieties. Not all varieties are adapted to our area. For example, McIntosh is a popular apple in northern states, but it produces almost inedible fruit here because of our hot summers. There are other factors to consider as well, including resistance to diseases and when the varieties ripen. Doing a little research will help you determine the apple variety best suited for your growing area. For more information see go.ncsu.edu/fruit-trees.

—Bill Hanlin

Pest Alert: Bagworms

The bagworm calls are coming in fast and furious. They all start out the same way: My tree looked fine, and all of a sudden it's dying and there are little pine cones hanging all over it! The bagworms have been working for a couple of months now, and they've finally done enough damage to catch the homeowner's notice. It happens to us all—it happens to me!

Bagworms hatch in May and begin as small, inconspicuous gray worms that eat the leaves and needles of trees and shrubs as the worms crawl along. They build a bag that does look like a little pine cone around themselves as they crawl and eventually attach the bag to a branch and seal themselves inside the bag—where they lay eggs for next year. Bagworms love junipers and Leyland cypress but will attack many other ornamentals as well.

The trick is to catch them early and spray them before they build their protective bag. Liquid Sevin or spinosad work well when sprayed May and June. If you're just now seeing bagworms, it is too late to spray because they've already built their bags. But you can pick the bags off and burn them. This will prevent next year's worms from hatching on your plants. It wouldn't hurt to give the plants an application of pesticide next May just in case you missed a few bags.



Remove and burn bagworms to prevent next year's worms. ©Shawn Banks

— Donna Teasley

Lawns: Cool-season grasses

Cool-season grasses, which include fescues, Kentucky bluegrass, and perennial ryegrass, are best suited for lawns in the NC mountains and piedmont. Using a cool-season grass will help ensure a green lawn throughout most of the winter. Seed cool-season grasses in early fall to ensure good establishment before harsh winter weather. Cool-season grasses perform best in spring and fall when the temperatures are lower and less stress to the lawn occurs.

Tall fescue is a reliable cool-season grass that establishes easily when started from seed. It can take sun or partial shade and provides a green lawn throughout the year. It is recommended to blend cultivars of tall fescue to ensure a healthy stand of turf.

Fine fescues, which include hard, creeping red, and chewings, can tolerate poor soils, shade, and drought conditions better than other cool-season grasses. They have finely textured leaves and are great to mix with other cool-season grasses when planted in shady areas. Fine fescues have a bunch type growth habit and perform best when mixed with Kentucky bluegrass.

Kentucky bluegrass performs best in fertile, well-drained soils and can tolerate sun or part shade. This grass has a fine to medium texture and is a great performing grass when mixed with other cool-season grasses.

Perennial ryegrass is a great grass for mountain regions when seeded with Kentucky bluegrass. It establishes quickly and helps with a healthy appearance while the Kentucky bluegrass is getting established.

No matter which mixture of cool-season grasses you choose, consider the use of your turf and its maintenance requirements. Things like mowing height and water needs should also be considered to ensure that you create the lawn that best suits your needs.

— Sarah Scott

Tips & Tasks

Ornamentals

- Fall is the best time to set out most landscape plants.
- Plant spring flowering bulbs, such as daffodils, tulips, crocuses, and hyacinths.
- Plant fall bedding plants for color, including pansies, mums, snapdragons, and ornamental kale.
- Transplant trees, shrubs, and perennials.
- Dig and store tender summer bulbs like gladioli, dahlias, and caladiums.
- Cut back and clean up frost-killed perennials.

Lawns

- Over-seed or re-seed tall fescue lawns as needed.
- Fertilize established fescue lawns around Labor Day and again around Thanksgiving.
- Keep tree leaves from collecting on your lawn by raking them to the compost pile, tilling them into the garden, or chopping them up with the mower and leaving them on the lawn.

Edibles

- Clean up the vegetable garden if not growing fall crops.
- If not growing a fall garden, plant a cover crop to build soil.
- Start salad vegetables in a cold frame. Plant lettuce, green onions, carrots, radishes, broccoli, cauliflower, and most leafy greens inside the cold frame and enjoy them all winter.
- Plant asparagus crowns.
- Prune raspberries and blackberries by removing dead canes.
- Send in soil samples for analysis. Kits are free of charge and available at local Extension centers.
- Order fruit trees and grape vines for spring delivery.

—Amanda Taylor

Helping You Grow

NC State has a new tool to provide gardening information to the public. With a few keystrokes, most of your gardening questions can be answered at **gardening.ces.ncsu.edu**. There you will also find the latest issue of *Extension Gardener* newsletter.

Additionally, NC State's plant database can be searched by common name, scientific name, plant category, or photo. Data include growing requirements and plant characteristics. Timely gardening news fills the center of the page. The left sidebar of the website's home page lists many topics, which expand into more topics when you make a selection. If you have a burning question that you want answered immediately, follow these instructions:

Scroll down the left sidebar and select the **PUBLICATIONS** link, which will take you to another full page of possibilities. If that is too time-consuming, go back to the home page. In the search box at the top right of your screen, type in a keyword or question. Happy growing!

—Pam Jones



Taking a soil sample. ©Megan Gregory

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Plant Watch: Chalkbark maple (*Acer leucoderme*)



Chalkbark maple ©Tom Glasgow

Chalkbark maple (*Acer leucoderme*) is a smaller, slower growing version of the southern sugar maple (*A. saccharum* var. *floridum*)—a heat-tolerant, southern relative of the well-known sugar maple (*Acer saccharum*). Although the southern sugar maple, also known as Florida maple, is quite common in eastern North Carolina and occurs in coastal counties, the chalkbark maple is distributed more heavily toward the NC piedmont. Occurring naturally as an understory tree in dry forests, it has good drought tolerance and attractive bark

in winter. Fall color can be outstanding, ranging from yellow to orange to red. Chalkbark maple is adapted to climatic conditions from USDA Zones 5 through 9, so neither heat nor cold should be a problem anywhere in North Carolina. In the landscape, avoid wet or mucky soils, and select sites with partial or afternoon shade. For a list of NC nurseries that sell native trees, visit **www.ncforests.gov/Urban/pdf/NurseriesSellingNativeTrees.pdf**.

—Tom Glasgow

Incredible Edibles: Butterhead and leaf lettuces

If you aren't growing lettuce in your garden, you're missing out on a crisp treat in the spring and fall! Although lettuce will grow fast in full sun, it is one of the few vegetables that will tolerate shade, making it great to grow between taller veggies like tomatoes and corn. Lettuce grows best in fertile, well-drained soil with a pH between 6.0 to 7.0 and should be transplanted in the spring and direct-seeded in the fall.

Harvest leaf lettuce starting with the older outer leaves as soon as they are 4 to 6 inches long. Butterhead can be harvested like leaf lettuce, or the entire head can be harvested when it is moderately firm. Lettuce generally needs five to seven weeks to reach maturity. Slugs can sometimes be a pest. It is important to keep the lettuce patch free of weeds.

—Jarette Hurry

Sustainability: Soil testing for sustainable nutrient management

Fall is an ideal time to test your garden soil. Making sound decisions about soil management starts by learning your soil's pH, nutrients, and organic matter levels. Most gardeners know that to grow productive crops, the soil must contain nutrients such as nitrogen (N) and phosphorous (P). But gardeners may not be aware of the dangers of overfertilizing. Many garden soils contain excess nutrients (especially P) that can stimulate weed growth and pollute waterways through runoff or leaching. Testing the soil helps you select soil amendments and fertilizers and to apply *needed* nutrients—not more than is needed. This will support good vegetable yields and keep waterways clean. Gardeners can take advantage of the NC Department of Agriculture and Consumer Services free soil testing service by submitting soil samples from April through mid November. In general, gardeners can take these steps to improve soil quality and achieve balanced nutrient additions:

- Use legume cover crops as the main N source.
- Use plant-based composts made from leaves and yard waste to improve soil tilth, rather than large amounts of manure-based compost.
- Maintain P and potassium (K) levels in the optimum range with modest additions of manure-based compost and other organic amendments, as indicated by soil test results.

For more information, visit **go.ncsu.edu/FCGHealthySoil** and check out the first two resources: "Soil Test Interpretation and Soil Management" and "Soil Test Interpretation Worksheet." Gardeners can use the worksheet to interpret their soil test reports and choose appropriate organic amendments based on the results.

—Megan Gregory