

SPRING 2019

PIEDMONT NEWS

- How to grow shiitakes
- Blueberry basics
- Dirty hands, healthy heart
- Early season peach pests
- Spring lawn preparation
- Tips and tasks

STATE NEWS

- Growing trees from seeds
- Hybrid witch hazels
- Culinary herbs
- Gardening by the book
- Homegrown videos

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
Brad Thompson

Regional Editor, Mountains
Hannah Bundy

Statewide Editor
Hanna Smith

The use of brand names does not imply endorsement by NC State Extension nor discrimination against similar products or services not mentioned.

© 2018 NC State Extension
Extension Gardener may not be reproduced without written permission. News media quoting the newsletter should credit NC State Extension.

Growing Trees from Seeds

I love to grow trees from seeds. Ever since I was a kid in the hills of middle Georgia, I have been stooping over and filling my pockets with acorns and seeds each fall. Since moving to North Carolina, I have located some local places to collect seed. During my many tours of local gardens I gather seed, usually with permission.

I am sure my wife grows tired of hearing the click-clack in the clothes dryer from acorns that I have left in the pockets of my blue jeans.

In years past I have grown many different trees from seed. Bald cypress, bur oak, white oak, sawtooth oak, longleaf pine, Osage orange, and catalpa trees are just a few. Eventually I plant these trees in my yard or give them away to friends. There is a certain satisfaction in watching a tree you collected and grew from seed mature into a large tree. It amazes me to think that the little stash of embryonic life stored inside of an acorn can grow into a mighty tree one day.

Last year I collected a handful of chestnut oak (*Quercus prinus*) seed while on a camping trip. I brought the seeds home and planted them in



The colorful seeds of hearts-a-bustin' (*Euonymus americanus*) need periods of warmth and cold to germinate.
 ©Tom Potterfield, flickr.com, CC BY-NC-SA 2.0

pots. Oak seeds need a certain number of hours of cold before they germinate. The easiest way to give the seeds their appropriate cold hours is to leave the potted acorns outside through the winter. One must cover the pots with window screen to keep the squirrels from eating the acorns. In the spring the seeds will germinate.

This past summer I collected pawpaw seed from the custard-like flesh of pawpaw fruit a friend gifted me. According to my copy of *The Reference Manual of Woody Plant Propagation* by Michael Dirr and Charles W. Heuser Jr., these seed germinate easily with no special treatment.

I also gathered seed from a hearts-a-bustin' shrub (*Euonymus americanus*). This member of the *Euonymus* genus is not as easily germinated, requiring three months of warm and three months of cold.

I have planted many hundreds of trees over the years in my capacity as a horticulturist and nursery grower. I like to think that the plants I have grown from seed are a kind of legacy. Maybe one day my grandkids will enjoy playing in the shade of a tree their grandfather planted way back in the late 1900s.

For more information on growing plants from seed, see the "Propagation" chapter in the *North Carolina Extension Gardener Handbook*.

—Steve Pettis

The Reference Manual of Woody Plant Propagation

SECOND EDITION

From Seed to Tissue Culture

MICHAEL A. DIRR AND CHARLES W. HEUSER, JR.

Refer to a propagation manual for details on germinating seeds and growing seedlings of different tree species.
 ©Timber Press, Portland, Oregon.

Extension Showcase

Dirty hands, healthy heart

Almost 60 percent of Montgomery County's children are considered obese or marginally obese.

To help address both issues, the Montgomery County Cooperative Extension center developed a program that integrated proper nutrition with horticulture.

"Dirty Hands, Healthy Heart" is a five-week program taught to afterschool children in grades three through five. All five elementary schools in the county participated.

Over the past three years, this program has been scheduled to end with the "Speedway to Health" exhibit as a finale.

The horticulture topics that the children encounter are slightly modified each year so that students that went through the curriculum the previous year are not subjected to the same material year after year.

Some of the topics include photosynthesis, seeds and seed structure, monocots and dicots, soil types, germination, and even tropisms.

There are hands-on activities to ensure the children understand the key concepts.

The "Dirty Hands, Healthy Heart" program has been a valuable resource as the children come away with a better understanding of what the food groups are, how their plates should look for proper nutrition, and how getting their hands dirty growing their own food can be a fun and rewarding experience.

—Brad Thompson

Smart Gardening: How to grow shiitake mushrooms



An inoculated and producing shiitake mushroom log. Photo by Keith Weller, USDA-ARS

Grow these tasty fungi in February through early April. Begin with a purchased kit or start them from scratch. Either way, you can easily create an environment at your house to produce shiitakes. Many homeowners start by purchasing quality mushroom spawn from mushroom suppliers or seed companies. The spawn is sold in a sawdust form or as plugs.

To grow shiitake mushrooms, you must have one key ingredient: fresh cut logs, preferably either red or white oak. You should cut them no more than two weeks prior to inoculating them with the mushroom spawn. The logs need to be no more than 4 feet long and 8 inches in diameter. Once the logs are cut and ready, you will need a few tools to create a shiitake log: a power drill, a mushroom drill bit, an inoculation tool, a wax melting pot, and a wax applicator.

Using the power drill and mushroom bit, drill into the logs, making holes every 4 to 5 inches. Then pack the holes with sawdust mushroom spawn. Finally, seal the

holes with melted cheese wax. Once you've inoculated the logs, place them in a shaded area where the logs will receive moisture. Stack the logs in either a crib or a lean-to format. The shiitake mushrooms will take six months to a year to fruit, so don't be in a hurry. For more information on growing shiitake mushrooms, see this NC State Extension publication: **Producing Shiitake Mushrooms (AG-478)**.

—Brad Thompson

Food Production: Blueberry basics

Blueberry plants are finding their way into more homeowner yards and landscapes because of the berries' nutritional value and ease of production in North Carolina. Here are some basics to consider before adding blueberry plants to your landscape.

Blueberries require well-drained, acidic soils to be productive. Test the soil prior to planting. Blueberries do best when the soil pH is between 4.5 and 5.3. If the soil pH is higher than 5.3, lower the pH by adding acidifying organic matter, such as pine bark, aged sawdust, or peat moss. If the pH is over 6.3, then you may need to add elemental sulfur to the soil to bring the pH of the soil down more quickly. If the soil pH is basic, meaning a pH of 7.0 or more, then raised beds filled with acidic planting material will be the best option. In the NC piedmont, however, the soil pH is rarely above 7.0.

Blueberries also require well-drained soils, which are not usually found in the NC piedmont, unless you live in the Sandhills. Adding organic matter when planting the blueberry plants will both lower the pH and improve drainage in the heavy clay predominate in the piedmont. If blueberries are planted in a wet area, they will not produce fruit reliably and may eventually die. For more information on growing blueberries, see blueberries.ces.ncsu.edu/blueberries-home-gardeners/ and the chapter on "Small Fruits" in the **North Carolina Extension Gardener Handbook**.



Blueberries need acidic, well-drained soil. Photo by Mark Ehlenfeldt, USDA-ARS

Pest Alert: Early season peach pests

If you grow peach trees, you know how challenging it can be to control insects and diseases. Insect pressure can begin soon after petal fall and continue throughout the season. Early-season pests can be difficult to scout for and find, but you can almost guarantee that the insects are there. Piercing-sucking insects (such as stink bugs and plant bugs) attack peaches very early in the spring. Stink bugs in particular emerge early because they overwinter as adults under leaves, in brush, or in cover crops. These insects will pierce the fruit causing a wound that as the fruit grows only gets worse. This wound is called “cat-facing” and looks like a large crater on the fruit. Cat-facing on peaches makes the fruit unappealing and is not something growers or homeowners want to confront.



Stink bug damage on peach fruit (left), and plum curculio larvae feeding on a young peach fruit (right). Photo by Rick Weinzierl, University of Illinois.

Another early season pest of peaches that worries many growers each year is plum curculio. These beetles arrive soon after petal fall. The females lay their eggs inside the fruit after making a very distinct crescent-shaped wound. The wound does not affect the peach. However, the larvae that hatch from the eggs begin feeding on the inside of the fruit and cause a great deal of damage. Controlling either piercing-sucking pests or plum curculio is done primarily through insecticide application right after petal fall. You should not apply insecticides prior to petal fall as pollinators are in the orchard during this time. When treating, you need to make two to three applications in the spring applied every two weeks. For more information on controlling early-season peach pests, or for information on other fruit trees with fewer pest problems, contact your local Cooperative Extension center. Also see the chapter on “**Tree Fruit and Nuts**” in the **North Carolina Extension Gardener Handbook**.

—Brad Thompson

Lawns: Spring lawn preparation

Lawns make living carpets with far more benefits than just being attractive showpieces. Creating an attractive lawn takes more than just planting and watering-in grass seed. One must take time to properly plan out the lawn with regards to seed selection, lawn establishment, and maintenance. The best time to do this is late winter through early spring.

First select the variety of grass after considering the region, climate, planned use, and desired appearance. The great thing about being in the NC piedmont is that warm-season or cool-season grasses can be planted. The most popular cool-season grass grown within the NC piedmont is fescue. Fescue grass includes tall fescue, Kentucky bluegrass, and fine fescues. Blends of fescue grass seed sold at garden centers usually include all three types of fescue. This allows the turf to withstand more environmental and physical challenges.

If warm-season grasses are preferred, then one can choose from bermudagrass, centipede, zoysia, St. Augustine, or carpetgrass as potential grasses to grow. Unlike cool-season grasses that stay green through the winter months, warm-season grasses go dormant and brown out. However, warm-season grasses grow better and withstand the heat of the piedmont better than a cool-season fescue. The decision of which type of grass will best meet your needs ultimately belongs to you.

Before seeding, collect a soil sample from the site and send it off for analysis. The results will tell you how much, if any, lime to apply and what nutrients to add to the soil. If you have any other questions regarding your lawn, contact your local Cooperative Extension center and consult the “**Lawns**” chapter in the **North Carolina Extension Gardener Handbook**. Another helpful resource is NC State Extension’s **Carolina Lawns**.

—Brad Thompson

Tips & Tasks

- Sharpen and sanitize garden pruning tools for any roses or fruit tree and shrubs you need to prune.
- Pick a sunny day for pruning activities to prevent the introduction of diseases.
- Begin a growing season spray program for fruit trees, shrubs, and roses.
- In the beginning of March cut back ornamental grasses close to the ground, being careful not to prune any new shoots emerging.
- Hand-pull lingering winter annual weeds such as henbit, Carolina geranium, speedwell, and chickweed from ornamental beds before they set seed.
- Clean up any lingering leaves and dead plant material and refresh mulch in planting beds for a clean slate.
- Prepare vegetable beds and plant cool-season vegetable seeds and transplants in March, including broccoli, cabbage, carrots, cauliflower, leeks, lettuces, garlic, peas, potatoes, and onions.
- Make your last fertilizer application for tall fescue lawns before March 15.
- Prune spring-flowering shrubs such as azaleas, forsythia, and viburnum after they have finished blooming for the season.
- Plant summer vegetables seeds and transplants and annual flowers after our last chance of frost date: April 15.
- During April apply grub controls to lawns to manage the Japanese beetle population and prevent mole issues in the coming months.

—Lauren Hill

Helping You Grow

Homegrown videos

A new website launched in 2018 to help home gardeners with common questions is **Home-grown**, published by the College of Agriculture and Life Sciences at NC State.

New videos are available every month. Topics include growing vegetables, caring for plants in the garden, where to find fresh produce, and how to use seasonal foods in the kitchen.

Along with each video, a link to additional information is provided for those who would like to dig deeper into a topic.

One video that will interest many home gardeners is **Protect the Pollinator—NC State Works to Preserve Billion Dollar Bees**. It explains what is being done to protect honeybees.

With spring just around the corner and all the fresh berries that come with warmer weather, a **Very Berry Tart** video might whet the appetite.

Another great video is **Worms Can Recycle Your Garbage**, which demonstrates how to build a worm bin to recycle kitchen scraps and describes the benefits of worm castings in the garden.

Visit cals.ncsu.edu/homegrown to see what other videos are available.

—Shawn Banks

NC State University promotes equal opportunity and prohibits discrimination and harassment based upon one's age, color, disability, gender identity, genetic information, national origin, race, religion, sex (including pregnancy), sexual orientation and veteran status. NC State University, North Carolina A&T State University, U.S. Department of Agriculture and local governments cooperating.

extensiongardener.ncsu.edu

Plant Watch: Hybrid winter-blooming witch hazels



Hybrid witch hazel (*Hamamelis x intermedia*). ©Paige Patterson

Hybrid winter-blooming witch hazels, blooming as early as late January, are a must-have for your garden. They offer almost 30 days of blooms, fall foliage color, and hardiness in USDA zones 4 through 9. All plants that are commonly referred to as witch hazel are in the genus *Hamamelis*. These winter-blooming hybrids, *Hamamelis x intermedia*, make up a group of hybrids between *H. japonica* and *H. mollis*. The species name indicates that they have intermediate characteristics between the other two species. The plants are loosely branched, multistemmed shrubs or small trees, usually 15 to 20 feet tall. With pruning, a specimen can be maintained as a single trunk tree. *H. x intermedia* prefers full sun, and moist soil. Cultivars have bloom colors ranging from bright-yellow to red. Noteworthy cultivars include 'Arnolds Promise' with yellow blooms, 'Diane' (red), and 'Jelena' (coppery-orange). For more pictures and information, visit plants.ces.ncsu.edu/plants/all/hamamelis-x-intermedia-h-x-media/.

—Paige Patterson

Incredible Edibles: Culinary herbs

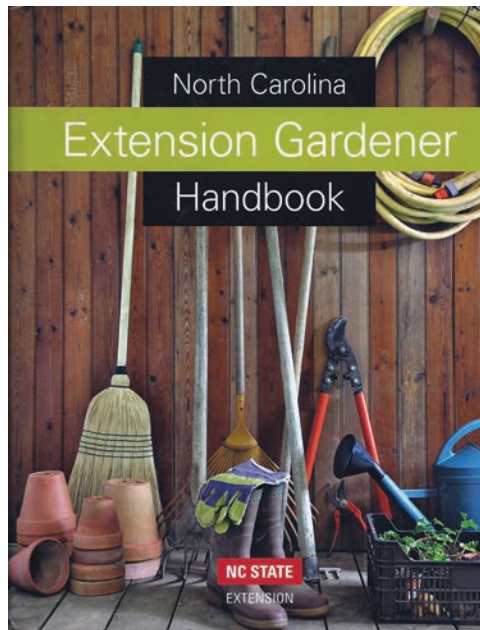
Use herbs to perk up dishes and add flavors that transform a simple meat or vegetable into something special. Herbs are generally easy to grow and have few pests and diseases. They require full sun, good drainage, and very little maintenance to thrive, and can be easily grown in containers or in the ground. To harvest herbs for cooking, cut or pick them in the morning after dew has dried. They can then be used fresh, like basil for bruschetta. Or they can be dried, like rosemary, to be used throughout the year. To dry, hang bunches indoors in a dry place (like an attic) and cover with a paper bag to prevent dust from accumulating. Also avoid hanging in the sun, which spoils color and dissipates oils. Once dry and brittle, store in an airtight container. Use herbs in teas, oils, salts, vinegars, or individually to add a kick to any meal.

—Hanna Smith



Herbs are easy to grow in garden beds or pots. ©Hanna Smith

Sustainability: Gardening by the book



The **North Carolina Extension Gardener Handbook** is a national-award-winning gardening and landscaping guide. Written by NC State Extension specialists and agents, it has the latest research-based information on soils, composting, design, propagation, gardening, and pest management. It is a fundamental reference for both seasoned gardeners as well as beginners, explaining the "why and how" of growing fruits, vegetables, nuts, lawns, native plants, ornamental trees, shrubs, vines, ground-covers, and plants in containers. The handbook includes 728 pages, 21 chapters, eight appendices, 1,067 color images, a map, 109 tables, an index, and a glossary.

This is the text used in the **NC Extension Master Gardener** Volunteer Initial Training program. It is available free online and as a hardback or eBook. Visit go.ncsu.edu/intro-eg-handbook.

—Lucy Bradley