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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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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

Unity Park and Community Gardens

David Horn has been the volunteer manager of Unity Park and Community Gardens since the Caldwell Memorial Foundation and the City of Lenoir received a grant to build it at an old factory site in downtown Lenoir. David's vision was to promote health through growing good food and to provide a site for gardening education.

Since completing the Extension Master Gardener Volunteer training in 2017, the second part of his goal has come to fruition. Master Gardener Volunteers began managing demonstration beds and leading public classes featuring the beds. Class topics have included pest scouting, seed saving, fall vegetable gardening, and growing and preserving various crops, including grains, peppers, and ginger.

Participants are likely to receive free plants, recipes, and freshly prepared food samples! The line-up for 2019 is equally exciting and features two "Cooking with Bounty" classes where participants will process and cook with the seasonal harvest. All classes are open to the public, and not to be missed.

- April 6: Murder in the Garden—Killing & Managing Cover Crops
- June 18: Pest Management
- July 2: Growing Garlic & Onions
- July 20: Cooking with Bounty—Part 1
- August 6: Straw Bale Gardening
- September 28: Cooking with Bounty—Part 2

For details, see caldwell.ces.ncsu.edu. Unity Park and Community Gardens is located at 1519 College Ave SW, Lenoir, NC, 28645.

— Elina Snyder

Smart Gardening: Stay safe with protective equipment



Smart gardeners put personal safety first.
©Sara Freeman, Transylvania County

It is important to protect your head, eyes, and hearing. Always wear a hardhat rated Z89.1 that is no more than five years old. A hardhat that has endured an impact should be discarded and replaced, regardless of any visible damage. Even if your hardhat has a built-in visor, you should always wear safety glasses that will protect the eyes from projectiles from the front and side. These should be rated 787. Hearing protection should reduce sound to a safe level but allow the operator to hear the shout of another person or the crack of a breaking tree. Choose hearing protection with an NRR (noise reduction rating) that will lower noise below 85 dBs; most chainsaws are 100 dBs or louder. Accidents can happen in an instant, so always let someone know where you will be working and never fell trees that exceed your experience and training.

—Sara Freeman

This winter, we've experienced record-breaking rainfall, heavy snows, ice, and high winds. Many of us will be cleaning up the damage to trees well into summer. It is important that we do this as safely as possible. Proper safety gear is essential any time you use a cutting tool, particularly a chainsaw. When used improperly, chainsaws are exceedingly dangerous tools that can cause serious bodily harm or death. Before you begin, be sure that your saw is well-maintained, the saw teeth are sharp, and the safety features are functioning properly. A common chainsaw injury is an accidental cut to the upper leg, which may be prevented by wearing chainsaw chaps that cover the lower body from the waist to the top of the feet. Damaged chaps should be discarded and replaced. Heavy boots and gloves are also a must.

Food Production: Seed packets and what they mean

With spring right around the corner and warm temperatures giving us an itch, garden planning is starting to take off. We all want our gardens to be beautiful, healthy, and bountiful. Having a successful year starts with selecting seeds that will thrive in your garden, and that success requires understanding and evaluating the information on seed packets. They entice you with plenty of beautiful pictures of healthy, mature plants. But before purchasing, read the packet carefully to understand the plant's requirements because that variety might not be well-suited for your area. Look for five key pieces of information on the packet: variety, date, germination, culture, and weight.

Variety will describe the plant itself, such as a varietal name and whether the plant is a hybrid. Flowers will be listed as annual, perennial, or biennial. Date will give you when the seeds were collected. Purchase seeds that were packed for sale in the current year because bad storage during previous years will reduce the viability. Germination will tell you the percentage of seeds expected to sprout in an ideal environment. Culture will include spacing requirements, days to germination, days to harvest, and when and how to plant the seeds. The last thing to look for is weight of the seed packet. This measure will be in many different forms and can give you the number of seeds in a packet for a certain weight or the length of a row that the packet will plant. This will help you determine how many packets of seed you need. Seed packets provide a wealth of information to help you select plants that will thrive in your garden.



Seed packets provide information a gardener can use. @ParentingPatch, CC BY-SA 3.0, commons.wikimedia.org

Pest Alert: Tiny bugs, big problems—ambrosia beetles

Ambrosia beetles are killing trees across western North Carolina. As more people move to the area and plant susceptible plants, more trees are being attacked. Crape myrtles, Japanese maples, red-buds, and many other trees are susceptible. We even see the pesky insects in fruit orchards and vineyards, where they kill weak plants. Ambrosia beetles drill into wood, creating holes smaller than the diameter of a pencil lead. The beetles gnaw the wood and push it out behind them as they construct their tunnels. Sometimes a toothpick-like protrusion of sawdust will form at the hole.



As ambrosia beetles tunnel into trees, they can leave behind protrusions of sawdust. ©Steve Pettis, Henderson County

Ambrosia beetles do not eat the wood. Rather, their larvae, which they deposit in the tunnels, eat a fungus. The beetles carry the fungus on their bodies and infect the wood as they drill into the tree. The drilling of most ambrosia beetles is harmless, while the fungus kills the plant by clogging the stem so water cannot move up from the roots. Adult beetles emerge from infested trees and seek out sick trees in February when we get a few days of warm weather. The beetles smell chemicals released by sick trees. Often, they will reenter the same tree where they were born. There will be two or three generations of the beetle per year. The best control of the ambrosia beetle is to keep your trees as healthy as possible. Plant them correctly and avoid overwatering. Do not damage trees and do not use too much mulch over the root system. If you have a particularly important plant that you do not want to lose or if you have had trouble with ambrosia beetles before, a spray of bifenthrin insecticide applied to the bark of the trunk of the tree in mid-February, mid-March, and mid-April can offer protection.

—Steve Pettis

Lawns: Maintenance begins in early spring

Western NC lawns are beginning to wake up from their long winter's nap, and homeowners need to get busy. Now is the time to feed the lawn. Cool-season grasses need a slow-release fertilizer applied in the early spring. This application will insure that high levels of nitrogen are gone before summer's heat and humidity arrive. This timing helps prevent brown patch, a common disease of cool-season grasses.

Weed control should be underway by now. Winter annual weeds such as henbit, chickweed, and hairy bittercress should be treated before they make seeds and disperse them. It's also time for crabgrass control. Preemergent crabgrass herbicides should be applied soon to prevent crabgrass seeds from sprouting. Wild onion and garlic control procedures are also most successful when done in March and again in October. Summer weeds such as clover and dandelions won't be controllable until they are actively growing, later in the spring. Timing is everything when it comes to controlling lawn weeds!

Grubs are making themselves known by now, and area skunks are enjoying digging them from the lawn. Grub control is not possible at this time, however. Contact your local Extension agent for the correct timing and pesticides to deal with these pests.

Resist the urge to sow turfgrass at this time. Spring planting never turns out well as newly germinated seeds have difficulty surviving the harsh temperatures of summer. Instead, make sure your mower blades are sharp and that the lawn mower is properly serviced and ready to go when our Carolina lawns green up. Use a mulching lawn mower to mince any lingering fall leaves from the lawn and start mowing as soon as the lawn starts to grow.

—Donna Teasley

Tips & Tasks**Lawn and landscape**

- Sharpen all your tools so dull blades don't crush plant stems.
- Prepare a solution for cleaning tools that will disinfect them after making cuts.
- If you haven't already, take a soil test to determine fertilizer needs for the year.
- Prune species that prefer late winter and early spring pruning.
- Plant warm-season grasses from May to July.
- Apply starter fertilizer to soil two to three weeks after seed emergence and fertilize cool-season grasses in February.
- Scout for any bagworm cocoons and hand remove if possible.
- Apply preemergent weed control before seedlings emerge in late February.

Edibles

- Prune mature fruit trees and established grapevines in February. Young fruit trees can be pruned in March.
- Plant any new fruit trees, grapevines, small fruit, and asparagus crowns now.
- Cool-weather vegetables can be started in greenhouses earlier in the season and then transplanted to the field later in the season.
- Spring crop seeds can be planted in March to April.

Other

- If applying fertilizer, work it into the top 6 inches of soil.
- Divide perennials such as daylilies, Shasta daisies, and peonies when the ground is dry enough to work.

—Hannah Bundy

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

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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

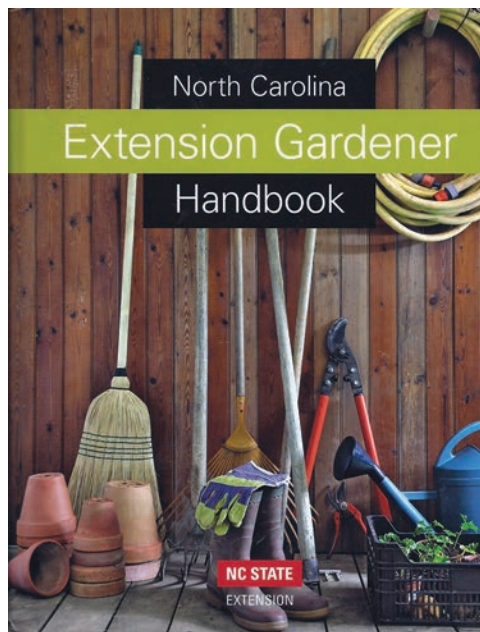
Use herbs to perk up dishes and add flavors that transform a simple meat or vegetable into something special. Herbs are generally easy to grow and have few pests and diseases. They require full sun, good drainage, and very little maintenance to thrive, and can be easily grown in containers or in the 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