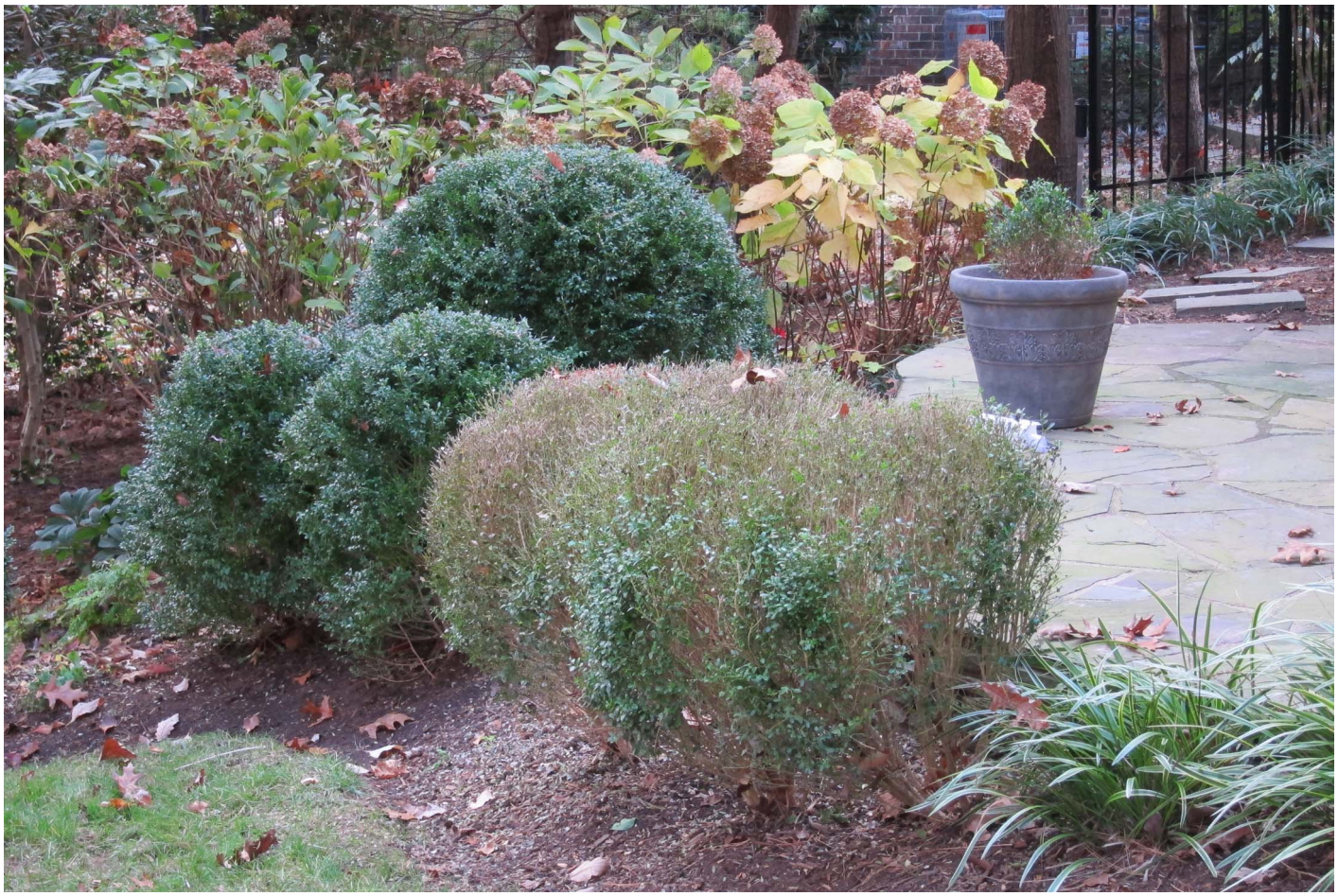
November 2018 - Vol. 4 No. 11



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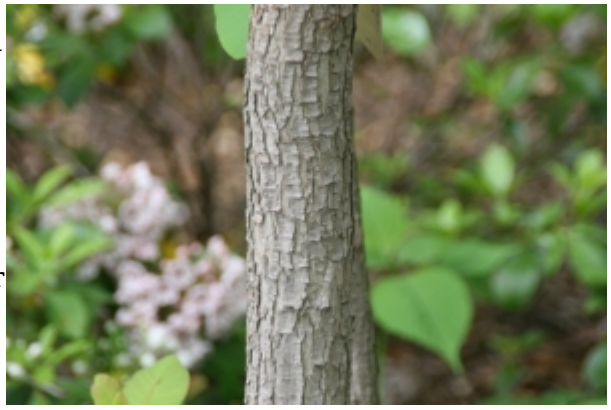
A Colorful North American Native–American Smoketree

By Susan Martin | November 2018 - Vol. 4 No. 11

Cotinus obovatus, American Smoketree*,* is sometimes inaccurately described as having large, showy pink flowers. In fact, Smoketree gets its common name from the **billowy hairs** attached to elongated stalks on the spent flower clusters. These hairs **turn a smoky-pink to purplish-pink in summer,** covering the tree with fluffy, hazy, smoke-like puffs. Berries occur on pinkish stems and then dry to small dark seeds. Spring leaves are silky pink, turning bluish-to-dark green. Fall leaves are magnificently colorful, turning vibrant shades of red, orange, yellow and purple. ***C. obovatus* is attributed with having one of the best fall color displays of any of our North American naive trees.** The color can last up to a month. Its gnarled limb structure and interesting fish-scaled bark pattern add to winter interest, giving it a true four-season display. Extract from its deep orange-yellow heartwood was used to make yellow and orange dyes, especially around the time of the Civil War. The tree was harvested for dye almost to the point of elimination.

GROWING CONDITIONS



Cotinus obovatus Photo: David J. Stang

C. obovatus Photo: Charles T. Bryson, USDA

C. obovatus is an upright, small tree or multi-trunked shrub, depending on how it's pruned. It has a mature height of 15-30 ft. and should survive for at least 60 years. It is described as **hardy and adaptable** to many adverse soil conditions. It grows best in full sun and alkaline soil but can tolerate partial shade, slightly acidic soil, and compacted soil. It does not respond well to overly rich soil, over-watering, or over-fertilizing. It is drought tolerant,

disease-
resistant,
and is highly
tolerant of
urban
pollution
which allows
it to thrive
in inner city
environment
s.

NATIVE U.S. AREAS

This North American native tree is found in the rocky, mountain soils of northern Alabama, Arkansas, Georgia, Kentucky, Missouri, Oklahoma, Tennessee and some parts of central Texas. In cultivation, the species has proven to be cold hardy in the north and thrives in a far greater range of conditions than those in which it naturally occurs. It grows in USDA Plant Hardiness Zones 4-8.

To learn more about trees native to the eastern U.S., or native to Virginia, see the following sources:

Identifying Trees of the East: An All-Season Guide to Eastern North America, 2nd edition (Williams, Michael D., 2017)

*Common Native Trees of Virginia Identification Guide (*Virginia Department of Forestry, 2016)

NATIVE AND NON-NATIVE SPECIES

It should not be confused with the non-native Common Smoketree (*Cotinus coggygria*), which is native from southern Europe to central China. The non-native species was introduced into America as early as 1656 and was commonly available in nurseries by 1790. It has many descriptive names including smokebush, European smoketree, cloud tree, wig tree, mist tree, and Jupiter's beard. The Eurasian smoketree and its cultivars are sold in many nurseries and is much more commonly found in home landscapes than is the American species, which must often be special-ordered from nurseries.

What are the **differences between the native and non-native trees?** Both trees look very similar, although the Eurasian species has somewhat larger flowers and showier plumes. It is also smaller, growing to about 15' in height. It grows in USDA Plant Hardiness Zones 5-8, making it a little less cold-hardy than American species. American smoketree is dioecious (male and female reproductive parts are borne on separate plants), with the male plants showing a better smoke display. The Eurasian species is monoecious (both female and male reproductive parts appear on the same tree), with no difference in smoke display between the male and female plants.

IS THE NON-NATIVE SPECIES INVASIVE?

The most favorable attribute *C. obovatus* is that it is a North American native. I found little documentation of invasiveness for *C. coggygria*. An information service provided by the staff and volunteers at the Lady Bird Johnson Wildflower Center stated that the Eurasion species doesn't appear on any invasive lists, and probably doesn't pose a real threat to the environment. A publication (reviewed 2014) by the University of Florida IFAS Extension described the Eurasian species as showing little invasive potential. However, the Purdue Extension included *C. coggygria* on a list of Invasive Plant Species in Hardwood Tree plantations, but

there was no supporting information to explain inclusion on the list.

ANACARDIACEAE FAMILY

Smoketree is a member of the family **Anacardiaceae,** commonly known as the **cashew family or sumac family.** This family of flowering plants includes about 83 genera with about 860 known species. In some cases, members of the family Anacardiaceae produce **urushiol**, an irritant. Urushiol-induced contact is the medical name given to allergic rashes produced by various plants, including poison ivy, poison oak, and poison sumac, as well as other plants in the family Anacardiaceae (mango, Rengas tree, Burmese lacquer tree, India marking nut tree, and the shell of the cashew nut). Smoketree panicles (a much-branched inflorescence) and leaves are safe to touch, but the urushiol in the sap may cause irritation. Be sure to wear gloves when pruning.

C. OBOVATUS CULTIVARS

Although there are many cultivars sold at nurseries for *C. coggygria*, I found mention of two cultivars for *C. obovatus:*

***C. obovatus* 'Cotton Candy'**

This is a beautiful small tree or large shrub that grows to 18' tall and 15' wide. It is extremely showy, with its fascinating pink plumes in summer and red-orange fall colors. This tree does best in full sun to partial shade. It is very adaptable to both dry and moist locations. The warty brown-gray bark adds an interesting dimension to the landscape. It grows at a medium rate, and under ideal conditions can be expected to live for at least 60 years.

C. obovatus 'Cotton Candy' Photo: Tree Top Nursery

Cotinus 'Grace'

Cotinus 'Grace' Photo: Averater

Developed in 1978, Cotinus 'Grace' is a hybrid between *C. obovatus* and *C. coggygria* 'Velvet Cloak'. Although each flower is inconspicuous, the flower clusters borne on long panicles appear fuzzy and light, like puffs of smoke. Grace has extremely large pink panicles, 14 inches long by 11 inches wide. Its fruit is inconspicuous, but the hairy flower panicles in late summer are very showy. In spring, leaves emerge light red, darkening through the summer to dark red. In autumn, foliage turns a mosaic of red, orange, and gold. With a mature height of 15-20', it can be used as either a small tree or large shrub and adds interest throughout the year.

Cotinus 'Grace' Photo: Averater

WILDLIFE

American Smoketree is described as providing good cover and nesting for birds and mammals. The small seeds from the female plants are a favorite food of native finches. The tree attracts bees and butterflies but it is not described as being a pollinator magnet. Some reports claim that it is deer resistant; others describe it as moderately deer resistant.

DISEASES

The tree is generally disease resistant. The most serious problem is Verticillium wilt. The tree also has some susceptibility to leaf spots and rust, but these are not usually serious problems.

HOW TO USE IN THE LANDSCAPE

Long-lasting, summer "smoke" display makes this a striking accent plant. It can also be massed along a border and used as a hedge. Its size makes it a candidate for planting under utility lines. A fibrous, shallow root system makes the tree well-suited for planting next to patios or walkways.

TREES FOR 2050

The Chicago Botanic Garden is undertaking a ten-year plan to remove about 400 trees due to the emerald ash borer and to identify suitable replacement trees. Candidates should continue to thrive in a steadily warming urban environment through 2050.

Dr. Andrew Bell, curator of woody plants, and his team analyzed 50 trees in the Garden collection and found that 40 would continue to thrive under worst-case warming scenarios through mid-century. Climate-change modeling indicates that some trees—those currently growing at the northern edge of their hardiness—will actually do a little bit better in slightly warmer conditions around 2020, but by 2050, ten of the 50 trees under study—20 percent—will no longer find the metropolitan area a welcoming habitat. Even more startling, the data for 2080 projects that only 11 of the initial trees would continue to do well in Chicago and the upper Midwest.

C. obovatus was selected for inclusion on the Urban Forest Adaptive Planting List as a tree that will continue to thrive through 2050.

SUMMARY

Although currently underused, American Smoketree would appear to be a great addition to home landscapes. It is not clear why the non-native species has become the most widely used and has come to dominate the nursery trade. There are many more cultivars of *C. coggygria,* and perhaps the consumer

appreciates that choice. It may also be that the non-native version has been commonly available through the nursery trade since 1790, while the native version was over-harvested around the time of the Civil War. In addition, an appreciation for the eco-benefits of native plant selection is a more recent development.

Native plant organizations and tree experts laud the American native tree for its hardiness, adaptability, and resistance to disease, pests, and pollution. In addition, its magnificent fall colors are deemed to be the most beautiful of all the native North American trees. Its size and shallow roots make it an easy fit into many areas of the landscape. It may need some deer protection since there are varied reports on deer resistance. Even though there seems to be little concern right now for any problems of invasiveness by *C. coggygria*, choosing the native variety would seem to be a prudent choice. It may require a little extra effort to special-order the native species through a nursery or from an online supplier, but *C. obovatus* will reward with year-round display.

ADDITIONAL RECOMMENDED READINGS:

For additional information on trees native to Eastern U.S.: *Identifying Trees of the East: An All-Season Guide to Eastern North America*, 2nd edition (Willims, Michael D., 2017)

For information on trees native to Virginia: *Common Native Trees of Virginia Identification Guide.* Virginia Department of Forestry, 2016.

SOURCES

Cotinus obovatus, Missouri Botanical Garden, http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=h660

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Common Smoke Tree (*Cotinus coggygria*), Memphis Area Master Gardeners, http://mamgmusings.blogspot.com/2012/06/common-smoketree.html

"American Smoketree," Look Up, Virginia! Utility-Friendly Trees https://www.plantsmap.com/organizations/452/plants/32678

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Plants Profile for Cotinus obovatus (American Smoketree), USDA Plants Database,
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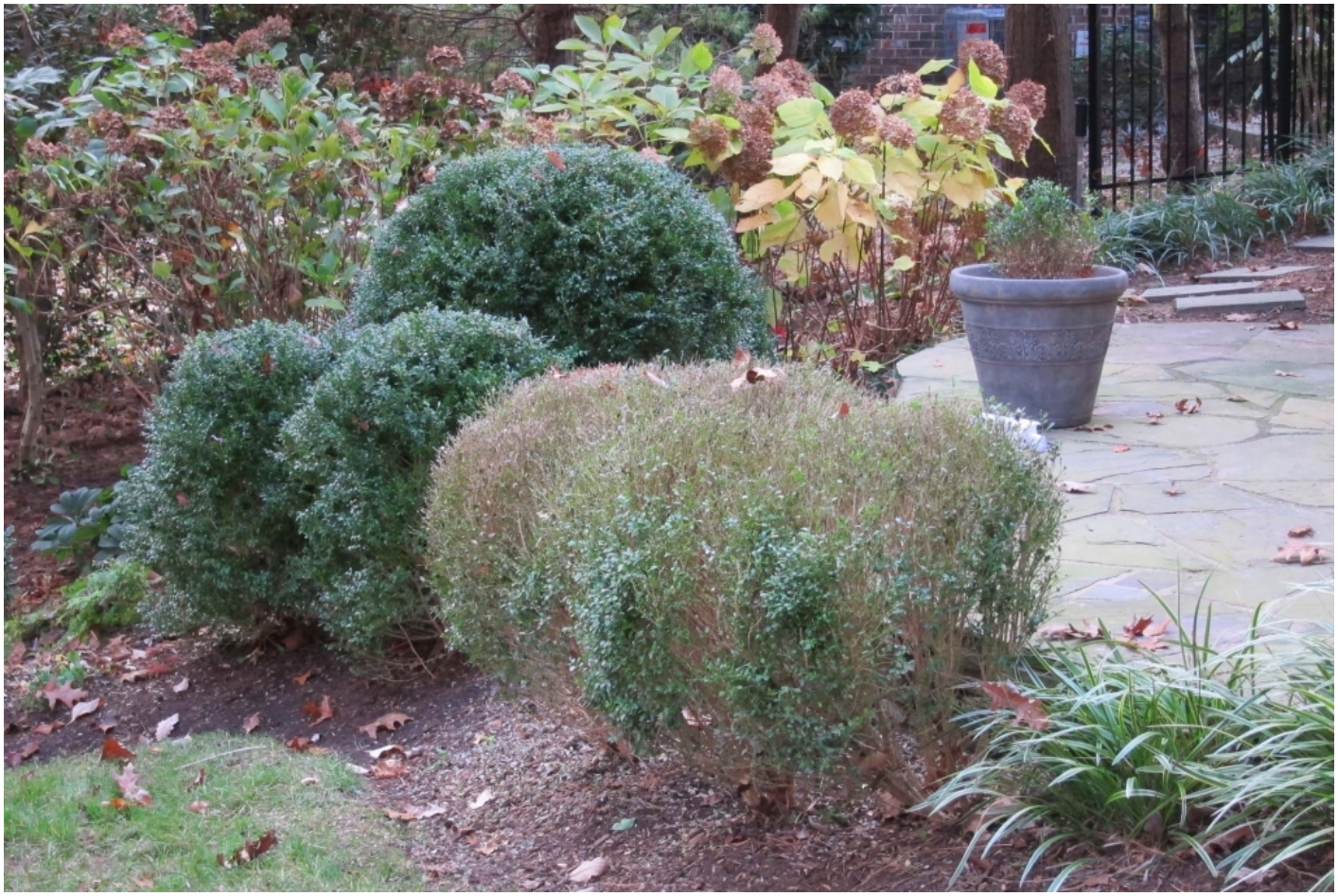
Boxwood Blight Alert

By Cathy Caldwell | November 2018 - Vol. 4 No. 11



Boxwood blight is a fungal disease caused by the pathogen *Calonectria pseudonaviculata*. It has become **a serious issue in the Farmington/Ednam neighborhoods, in Lynchburg, and now in Charlottesville city (Rugby area).** This disease causes rapid defoliation, decline, and death to American and English boxwoods. This article is designed to give gardeners an overview of this disease and how to recognize it, as well as what steps to take to prevent it and treat it.

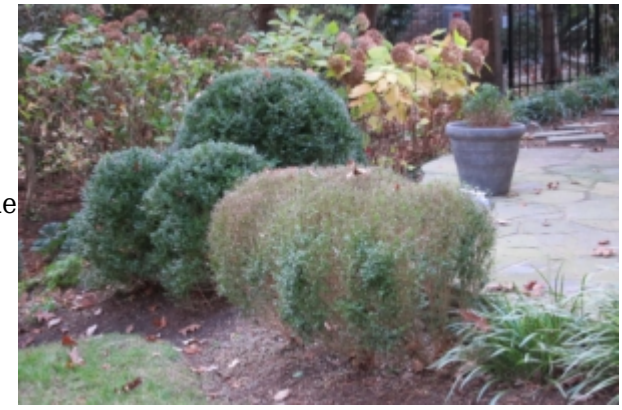
Prevention is the key since fungicides cannot eradicate the disease from infected plants. Once boxwood blight has been introduced into a landscape, it is very difficult and costly to control with fungicides. Currently, fungicide options for home gardeners are limited, although preventive fungicide treatments can protect uninfected plants. Professional landscapers have other product options, though they can be expensive. Scientists are working to develop effective control of boxwood blight for home growers with fewer fungicide applications. For a list of specific fungicides labeled for control of boxwood blight in the landscape for use by non-professional applicators, refer to Table 2 in VaCoopExt/Best Management Practices for Boxwood.

Boxwood blight is typically initially introduced into a new location when someone plants an infected boxwood or other susceptible plants (pachysandra and sweet box). There's some evidence that boxwood blight was introduced in Virginia via an infected plant purchased from a national retail store. Holiday greenery containing infected boxwood can also introduce the disease into a new location.

Sometimes the disease is spread accidentally by landscape equipment that carries the disease spores. If the disease has been identified in one's neighborhood, then there is a heightened risk of local spread of the disease.

Seasons of extremely wet conditions, high humidity, and warmer temperature ranges — which we've had a lot of recently — are ideal for fungal spore generation. The spores are sticky and must attach to an object for transport. This could be anything from grass cuttings, leaf litter, debris of infected plants, clothing, and any gardening or lawn maintenance equipment. Birds, insects, animals, wind, rain, and runoff of irrigation water are also capable of moving the spores between properties. The spores can hide and can remain viable for several years even after leaves have fallen from the plant. Therefore, the soil under an infected plant can serve as inoculum for new infections in the following seasons.

Boxwood blight has two very distinct symptoms — sudden, severe **leaf drop and black streaking on stems.** If you see both of these symptoms, you are very likely seeing boxwood blight. You may also see brown spots on the foliage. Virginia Tech's Plant Disease Clinic is recommending that we gardeners do the following in our yards:



Defoliation
Photo: A. Bordas

1. **Inspect any boxwoods and related plants i**n the Buxaceae family (*Sarcococca spp*. and *Pachysandra* spp.)

    a. **Look for discolored and unhealthy areas with sudden defoliation**

Close-up of leaf spots; note light center and dark border.
Photo: A. Bordas

    b. **Examine stems for black streaking**

2. **If you suspect you may have found boxwood blight,**

a. cut samples of infected stems and double bag them in Ziploc bags, and then spray the outside of the bag with Lysol or a similar product (to kill any hitchhiking spores).

b. bring 1 foot of diseased and healthy plant along with 2 cups of soil that includes feeder roots to the local Virginia Cooperative Extension Office.

c. **Contact the local Extension Office if you suspect boxwood blight.** We need to help the Virginia Cooperative Extension keep track of this disease and its spread!

Steaking on stems.
Photo: M.A. Hansen

If the Plant Disease Clinic confirms your worst fears, the following **actions are recommended by Virginia Tech AFTER A CONFIRMED DIAGNOSIS:**

1. **Remove diseased boxwood and leaf litter promptly and very carefully**. Remove leaf litter from soil surface by vacuuming, raking/sweeping. If leaf debris has been incorporated into the soil, removing soil to a depth of 8″ to 12″ may help eliminate inoculum of the pathogen. Diseased boxwood, leaf debris and soil should be double-bagged and removed to the landfill OR buried 2′ deep in soil AWAY from boxwood plantings. Do not compost boxwood debris or plant material. (Note that if English and American boxwood are nearby, they are very susceptible to the disease.) If you decide to hire someone to remove diseased boxwood, be sure they are knowledgeable about boxwood blight and how to prevent its spread. Ask questions!

2. Because the fungal spores can stick to tools, equipment and just about anything, **sanitize** all tools, equipment, tarps, shoes, gloves, etc., used in removing infected plants. Solutions of bleach or Lysol are the recommended sanitizers for home gardeners. You'll find precise directions on mixing and applying these santizing solutions at Va.Coop.Ext/Best Management Practices for Boxwood Blight in the Virginia Home Landscape. This sanitizing step is essential to prevent spread of fungal inoculum to healthy boxwood in your yard and your neighborhood.

3. Promptly begin a **preventative fungicide spray program on any remaining susceptible boxwood** in the landscape to prevent further disease outbreaks. (Note that if healthy-appearing plants are located near affected plants, they may already be infected.) Repeated fungicide applications (7 to 14-day intervals, according to product label) to susceptible boxwoods in the vicinity that are not yet showing symptoms will be necessary to protect them from infection by this pathogen. Plants already infected will not benefit from fungicide treatment. Products containing the active ingredient, chlorothalonil, and labeled for use on landscape ornamentals, have been shown effective as **preventative** applications on boxwood. Professional landscapers have additional active ingredient options. Refer to the **fungicide information** on the Virginia Boxwood Blight Task Force website for more fungicide information. Va.Tech.edu/boxwood-blight/fungicides-table.pdf. Monitor other boxwoods in your yard for development of symptoms. Some gardeners may choose to avoid the preventive fungicide spray program and simply remove any other susceptible boxwoods in their yards. See the discussion of options at VaCoopExt/Best Management Practices for Boxwood Blight.

4. Be aware that **pets, children, and other animals can also potentially move the sticky spores** of this

fungus to new locations.

5. **Purchase boxwood only from reputable sources** (e.g. nurseries that participate in the Boxwood Blight Cleanliness Program). Carefully monitor any new boxwood plants that are introduced into the landscape prior to planting. If plants have any suspect symptoms (circular leaf spots, black streaking on stems, leaf loss), do not plant them.

6. Other plants in the boxwood plant family, Buxaceae, including *Pachysandra spp*. and *Sarcococca spp.*, are also susceptible to the disease and **should be removed** if boxwood blight has been diagnosed on nearby boxwood plants. Plants outside of the Buxaceae family can safely be planted into areas where boxwood blight was diagnosed because these plants are not susceptible to the disease. If you decide to replace infected boxwood plants with boxwood, you'll want to **plant only varieties which are resistant to boxwood blight** (though that's no guarantee). Consult this helpful list that rates boxwood varieties according to their resistance — all the way from "highly susceptible" to "most resistant" at VaCoopExt/Susceptibility of 23 Commercial Boxwood Cultivars to Boxwood Blight.

7. **Holiday greenery** that contains boxwood could also be a potential source of spores of the boxwood blight pathogen. Double-bag and discard holiday greenery after the holidays. Do not compost boxwood wreaths or other greenery.

Prevention is the Key

The Virginia Cooperative Extension makes the following recommendations to gardeners wishing to avoid a boxwood blight infestation:

- If you purchase new boxwoods, be sure they come from a grower that adheres to the Boxwood Blight Cleanliness Program (see details in the box at the end of this article).
- Minimize leaf wetness and promote good air- circulation in boxwood plantings to minimize disease pressure. Examples include:
  – Choose cultivars that have a more open-growth habit (e.g. Buxus microphylla cultivars as opposed to B. sempervirens 'Suffruticosa').
  – Avoid overhead irrigation.
  -Ensure good air circulation in plantings by providing adequate spacing between plants. In general, growers may want to avoid close spacing of boxwood and, therefore, hedges.
- Mulch boxwood plantings to reduce the spread of boxwood blight inoculum to foliage by splashing water.
- Avoid working in boxwood plantings when the foliage is wet and fungal inoculum is more likely to be spread.
- Practice good sanitation practices to avoid moving infested soil or plant material to landscape locations where boxwood are located.
  – Sanitize pruning tools and other tools/equipment/ clothing/tarps between boxwood plantings and also between other members of the Buxaceae family.
  – Bag and dispose of all boxwood debris (including holiday greenery) in the landfill or bury 2' deep in soil away from boxwood plantings.
  – Be aware that allowing boxwood tippers onto your property to collect greenery may increase the risk of introduction of boxwood blight if the tippers visit multiple boxwood plantings and do not follow good sanitation practices.
  – If you hire landscape professionals to spray or otherwise maintain landscape boxwood, discuss your concern about boxwood blight with them to learn about management practices they may have in place to avoid movement of boxwood blight from one client's landscape to another. Then you can decide if their approach is acceptable to you.

BOXWOOD BLIGHT CLEANLINESS PROGRAM,

Va.Dept.Agriculture&Consumer Services/Boxwood Blight

One of the ways that consumers can protect against introducing boxwood blight onto their home landscapes is by dealing with retail or production nurseries that have met the compliance requirements of the Boxwood Blight Cleanliness Program. This is a voluntary program geared for production nurseries. If a nursery grows its own stock, or part of its own stock, it could voluntarily sign on to the Compliance Agreement for Production Nurseries and adhere to the very stringent requirements for production cleanliness outlined in the agreement (to view the requirements, go to Compliance Agreement through the highlighted link above). A retail nursery that does not grow its own plant stock should require that the production nurseries that supply its plant stock are in compliance with the Boxwood Blight Cleanliness Program.

Consumers should consult the list of production nurseries that are in compliance. **If you deal with a retail nursery, you should ask who supplies their plants in the Buxaceae family**, and then check to make sure that this production nursery is on the list of Virginia Nurseries Participating in the Boxwood Blight Cleanliness Program. You'll find the list at Va.Dept.Agriculture&Consumer Services/Participating Virginia Growers.pdf. Remember, commonly-purchased Buxaceae family members include pachysandra (*Pachysandra terminalis)* and sweet box (*Sarcococca*), in addition to all the many boxwood varieties.

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The Ornamental Garden in November

By Susan Martin | November 2018 - Vol. 4 No. 11

November might seem to be a gardening month of all work and no play. But there's something very rewarding about putting a garden to bed properly and tidily. Fall chores can satisfy a gardener's nesting instinct: cleaning tools and hanging each in its spot; cleaning and stacking pots; draining and coiling hoses; gathering plant labels to be sorted over in winter. Some big gardening chores, such as planting or transplanting deciduous trees and shrubs, can also be tackled this month. Let's look at our November list and see what needs to be done before the holiday rush begins.

PLANTING NEW TREES

Planting deciduous trees from September through November allows the roots to become established before the ground freezes and winter sets in. In the fall, cooling temperatures, still-warm soil, and adequate moisture can help trees get a head start on establishing roots. As long as the soil temperature is above 40 degrees, roots will continue to grow. In spring and summer, foliage requires extra moisture which means having to keep newly-planted trees well-watered.

Broadleaf evergreens are best planted in the spring, although some, such as mountain laurel, boxwood, and hollies, can be planted in the early fall if they are given deep watering and a thick acidic mulch.

Note: Individual planting holes should not be amended with compost, manure, peat moss, or other soil additions. This could discourage roots from reaching beyond the hole and getting established in native soil. In addition, water tends to stay in a hole with lighter amended soil; this could suffocate the roots or cause root rot.

For instructions on how to plant container trees, balled-and-burlapped trees, or bare-root trees, see "Planting A New Tree" *The Garden Shed*, October 2015.

For those who choose to buy **live Christmas trees** that can be planted after the holidays, pick your planting spot now and dig the hole before the ground freezes.

Five Students Planting a Tree, Goshen College, IN

TRANSPLANTING ESTABLISHED TREES AND SHRUBS

Smaller trees and shrubs can be transplanted when dormant. Larger trees and shrubs, however, **require planning and advanced preparation** before being uprooted. Tree and shrub roots normally grow well beyond the soil volume that can be moved. To keep most of the roots within a small area, these roots need to be pruned at least six months in advance of transplanting. Ideally, r**oot pruning is done in stages** about 1-to-2 years before the plant is transplanted. Begin root pruning by marking a circle the size of the desired root ball around the tree or shrub. Then dig a trench just outside the circle. Refer to pruning recommendations by the American Association of Nurserymen. **Plants to be moved in the fall (October or November) should be root pruned in March,** and those to be moved in spring (March) should be root pruned in October. Root prune only after leaves have fallen from deciduous plants in fall or before bud break in the spring. If not root pruned, the plant may die from transplant shock because of root loss. For additional information on planting, transplanting, and root pruning see "Planting Process," University of Maryland Extension.

FERTILIZING DECIDUOUS TREES AND SHRUBS

Late-summer and early-fall fertilization may stimulate new growth that is not winter-hardy, making deciduous trees and shrubs susceptible to winter injury. Trees and shrubs are typically fertilized after they become dormant in late fall/early winter or, in early spring. Mature shade trees do not typically need to be fertilized at all. Pale green, undersized leaves; early leaf drop; reduced growth rates; and twig die-back may indicate a need for fertilization. These symptoms can indicate problems other than nutrient deficiencies, however, and a soil test is recommended to determine if supplemental nutrients are required.

Fertilizer should not be concentrated around the stem or trunk of a tree or shrub, but should be applied over as much of the plant's root zone as possible. For trees and shrubs, fertilizer should be applied over an area twice as large as the crown spread or drip line. Since most landscape plant roots grow in the top foot of soil, a surface or shallow application is recommended. If water is unavailable, do not fertilize at all because plants

will be unable to absorb the nutrients.

NOTE: When turf is fertilized, **tree and shrub roots** that extend into the turf area absorb some of the fertilizer, and are therefore **indirectly fertilized.** For further discussion, see the VCE publication, "Fertilizing Landscape Trees and Shrubs."

FERTILIZING LAWNS

For **cool-season grasses**, the preferred time for applying N fertilizer is August through October. The second best time is late fall, mid October to late November, when cool temperatures have reduced top growth, but root growth is still active. Low rates of **N fertilizer** (40 to 50 lbs./acre) will "set-up the plant" for winter and encourage healthy early-spring growth. Not only does enhanced root growth aid in the uptake of water and nutrients, carbohydrate buildup in the stem bases promotes winter survival and spring regrowth. **Never apply lawn fertilizer to frozen soils.**

For warm-season grasses, the preferred period for applying N is mid April through mid August. For overseeded lawns only, a secondary period for applying a fall nitrogen application is mid October to mid November.

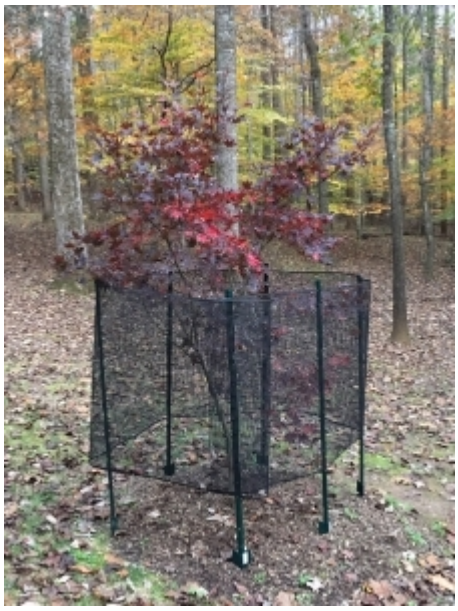
For recommendations of appropriate fertilization schedules and application rates, see the VCE publications, "Maintenance Calendar for Cool-Season Turfgrass Lawns in Virginia," and "Maintenance Calendar for Warm-Season Lawns in Virginia."

MULCHING

Mulch is often applied in spring, but check on mulch levels in fall as well. Mulching helps prevent soil erosion; insulates the soil; retains water to keep roots moist; and prevents root heaving caused by freezing and thawing temperatures. Mulch boxwoods and broadleaf evergreens **before the ground freezes**. Mulch deciduous trees and shrubs, and perennial beds **after the ground freezes**. Apply mulch as far out as the spread of the branches but no more than three inches in thickness. **Mulch should never touch the bark of the plant.**

PROTECTION FROM ANIMALS

As the weather becomes harsher and natural food sources become scarcer, deer, rodents, rabbits and other animals will look to trees and shrubs as sources of food. Install tree guards, chicken wire, or stake and plastic fencing around young trees and woody shrubs to discouraging foraging and damage from antler rubbing. These photos show examples of protection against damage from deer rutting.



WINTER PROTECTION

If autumn rains have been insufficient, give plants a **deep**

Acer griseum (Paperbark maple) Photo: Gail and Hal Clark

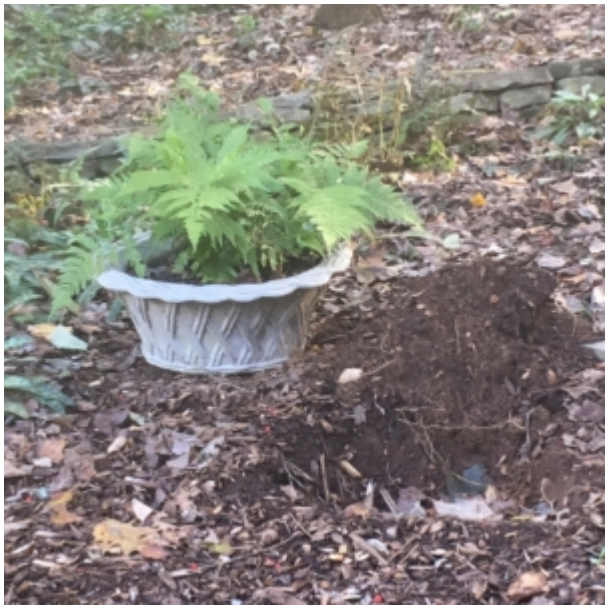
soaking that will supply water to the entire root system before the ground freezes. This practice is especially important for evergreens.

Acer palmatum (Japanese Maple) 'Bloodgood' Photo: Susan Martin

Small evergreens can be protected by using **windbreaks made out of burlap**, canvas, or similar materials. Windbreaks will help reduce the force of the wind and shade the plants. They can be created by attaching materials to a frame that is placed around a plant.

CONTAINER PLANTS

Some hardy perennials can be **kept in concrete or other freeze-tolerant containers and buried after the ground freezes.** Once buried, cover the pot with a layer of mulch to protect the roots which are vulnerable to freezing. Dig holes now before the ground freezes.



Dryopteris erythrosora (Autumn fern) in concrete pot with hole readied before ground freezes Photo: Susan Martin

When considering which potted plants to keep outdoors over winter, select plants that are cold-hardy to two zones below your local USDA Hardiness Zone. For Zone 7, select plants that are hardy to zone 5.

Or, keep a plant in its container and **move into an unheated garage or basement** where the plant can get some sunlight. Reduce watering to about once a month or when soil becomes very dry; do not allow the soil to become completely dry.

Because they are made of porous clay, most terracotta pots are at risk of cracking or shattering in freezing temperatures. Glazed pots, which are usually fired at higher temperatures, tend to withstand freezing better than terracotta, but it is still better to store them inside whenever possible. Some gardeners take the extra precaution of wrapping the sides of the container with several layers of bubble wrap (to protect both delicate containers and root systems), and then mulching.

You can also **transfer small containers into a cold frame** packed with sand or straw. (To create a temporary cold frame, arrange bales of hay to form four walls and top them with an old window, heavy-duty clear plastic, or a plexiglass lid.)

If you have empty concrete, cement, or clay containers that are too large to move, clean them as much as possible and cover them with lids or plastic sheeting to prevent water from collecting inside and freezing.

For more tips on winterizing container plants and outdoor plants, see "Overwintering Potted Plants," Brooklyn Botanic Garden.

HOLIDAY TREATS

Paperwhite narcissus is a terrific addition to your holiday decorations. Plant the bulbs, pointy side up, in

soil or in water. In just a few days, roots will sprout, and in about 4 to 5 weeks beautiful white blooms will emerge. Plant around Thanksgiving for bloom at the holidays.

Amaryllis is another bulb that can be planted in time for holiday bloom. Although it now comes in a variety of colors, red amaryllis is perfect for the holiday season. You can also choose red with white edging, or white with red edging! Choose a 6-8″ pot heavy enough to prevent the plant from tipping over once the large flower is in bloom. Set the bulb in potting mix, pointy-side up, with about 1/3 of the bulb above the soil line. Place in bright, indirect light, and water sparingly until 2″ of growth appears. Then water regularly. It takes 6-8 weeks for the bulb to flower (although some bulbs bloom earlier, some later). See "Amaryllis," *The Garden Shed,* November 2015, for information about planting amaryllis both indoors and in the garden.

Amaryllis 'Minerva' Photo: Dwight Sipler

ADDITIONAL RECOMMENDED READINGS

The Ornamental Garden in November, The Garden Shed, 2015

The Ornamental Garden in November, The Garden Shed, 2016

The Ornamental Garden in November, The Garden Shed, 2017

SOURCES

"Planting a New Tree," *The Garden Shed,* http://pmgarchives.com/article/planting-a-new-tree/

"Planting Process," University of Maryland Extension, https://extension.umd.edu/hgic/topics/planting-process

"Transplanting Established Trees and Shrubs," Clemson Cooperative Extension, https://hgic.clemson.edu/factsheet/transplanting-established-trees-shrubs/

"Planting Trees," VCE, http://pubs.ext.vt.edu/426/426-702/426-702.html

"Fertilizing Landscape Trees and Shrubs," VCE, http://pubs.ext.vt.edu/430/430-018/430-018.html

"Maintenance Calendar for Cool-Season Turfgrass Lawns in Virginia," VCE, https://pubs.ext.vt.edu/430/430-523/430-523.html

"Maintenance Calendar for Warm-Season Lawns in Virginia, VCE, https://pubs.ext.vt.edu/430/430-522/430-522.html

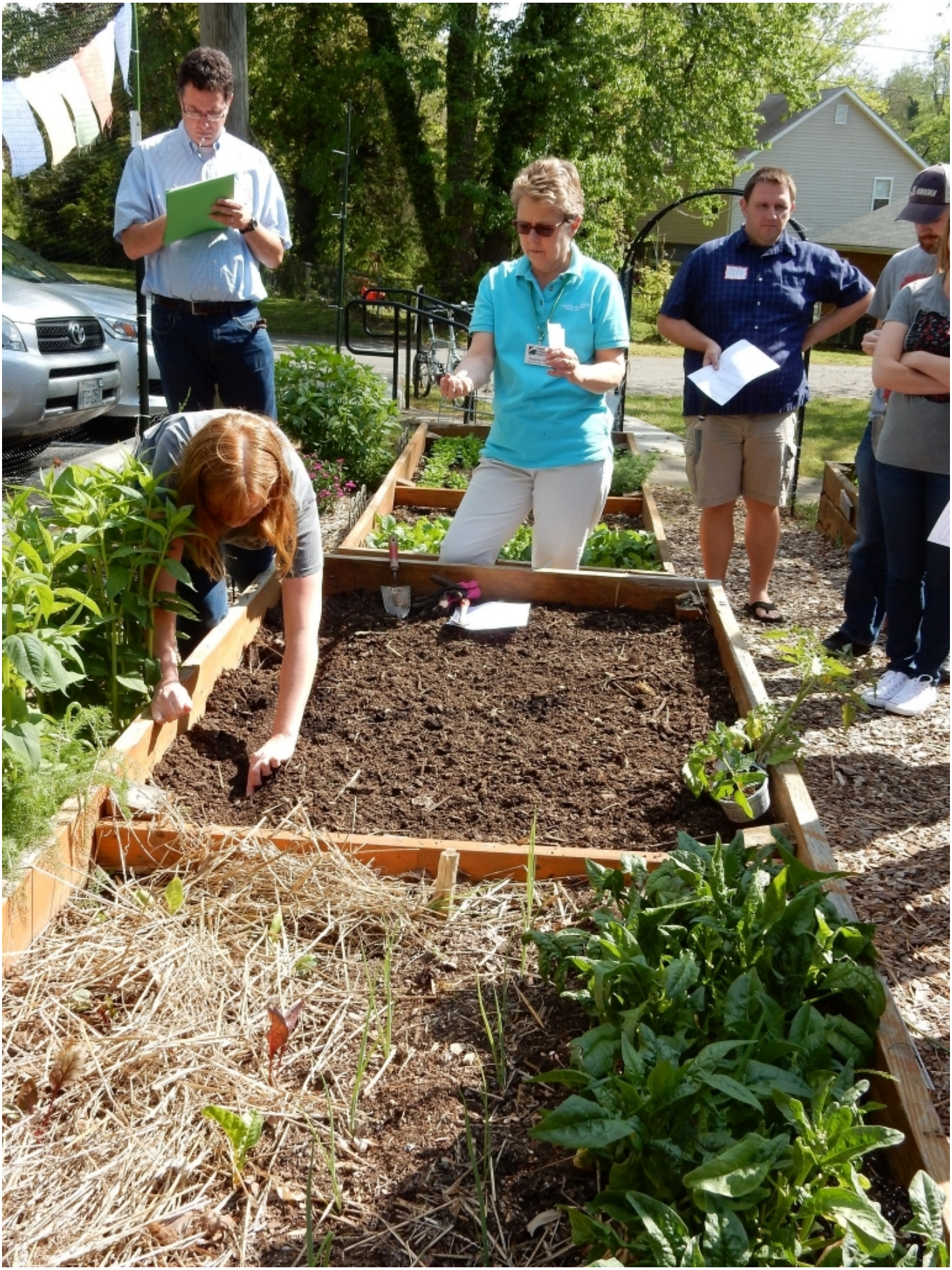
"Managing Winter Injury to Trees and Shrubs," VCE, https://pubs.ext.vt.edu/426/426-500/426-500.html

"Overwintering Potted Plants," Brooklyn Botanic Garden, https://www.bbg.org/gardening/article/overwintering_potted_plants

"Amaryllis," *The Garden Shed,* http://pmgarchives.com/article/amaryllis/

Gardening Events in November

By Cathy Caldwell | November 2018 - Vol. 4 No. 11



Saturday, November 17: Garden Basics: Preparing the Garden for Winter

Saturday, November 17 @ 2:00 pm – 4:00 pm
Trinity Episcopal Church, 1118 Preston Avenue
Charlottesville, 22903 + Google Map

Gardening does not have to end when the season cools. Ensure a successful spring by getting tips and recommendations for "putting the garden to bed" this fall.

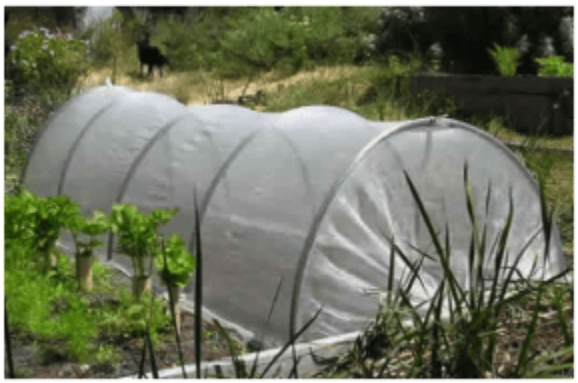
COST: **FREE**

HOW TO REGISTER: Send your name and name of class to…

Find out more »

Extending The Gardening Season

By Cleve Campbell | November 2018 - Vol. 4 No. 11



Want to extend your growing season? Think row covers! The use of protective coverings to produce a miniature greenhouse effect is certainly not a new idea. A quick trip to one of our local antique shops will often lead to the discovery of glass bell jars, which were commonly placed over individual plants in the early 1900s by European gardeners. And more than a few of us recall using newspapers to make paper “hats” to place over tender tomato and pepper seedlings to protect them from a late frost.

The main purpose of row covers in the late winter or early spring is to provide protection from adverse weather conditions and to increase air and soil temperatures during the initial stages of growth. The improved growth of plants under row covers can be attributed to higher air and soil temperatures. Row covers, when utilized in conjunction with raised beds, often allow crops to be planted 3-4 weeks before traditional planting. Now that’s a head start to make my grandmother envious!

Two basic types of row cover materials are available: **plastic** (which is supported by plastic or metal hoops) and **fabric** (which also may be supported by plastic or metal hoops but are often let free to float, resting directly on plants). If you decide to use clear plastic, use a length of 5-8′ wide. Plastic comes in a range of thicknesses, measured in millimeters, ranging from 1 ½- 8 mm. The greater the thickness, the higher the insulation value, and thus, the greater heat retention. The downside of a thicker material is that less light passes through to the plants. The sides and ends of the row covers are secured in place by anchoring the edges with one of the following methods:

- Ground stakes
- Row cover hand pegs
- Anchoring pins
- Soil
- Stones
- Pipes
- Boards
- Plastic bottles filled with water or sand

The temperature under plastic row covers needs monitoring because heat will build up and can be 20-25 degrees hotter than the outside air temperature. As a general rule, when the air temperature outside of the row cover reaches 60º-65º F, the ends of the row cover should be opened to provide ventilation and cooling to prevent plant damage.

One advantage of utilizing a supported row cover is that as temperatures rise, you can prevent bolting of

lettuce and other plants that are not tolerant of warm temperatures. You simply remove the row cover and drape a shade cloth over the frame, and your lettuce will continue growing — and not going to seed — in that nice, cool shade.

Most **floating** row covers are thin, lightweight, porous or spun-bonded materials. They are placed directly over the plants, leaving some slack for movement and room for plant growth. As with plastic row covers, the edges of floating row covers are secured by anchoring the edges with dirt or stones or metal staples you can find at gardening stores. Floating row covers provide only a few degrees of protection, but they are an excellent barrier for a wide range of pests. However, if the crop requires pollination, such as squash, the row cover needs to be removed when plants start to flower or you'll need to pollinate by hand.

There are numerous resources, including various web sites and seed catalogs, that provide "How To" instructions as well as materials for constructing row covers. According to an article by Washington State University, "Row Covers for Vegetable Gardens," (Horticultural Fact Sheet #19), row cover benefits include:

- Early yields
- Increased yields
- Frost protection
- Pest protection
- Water conservation

This article describes an interesting trial conducted in New Hampshire, that involved both covered and non-covered seedbeds of nine varieties of lettuce and three types of spinach, planted in October. By spring, the beds with floating row covers had perfect stands of lettuce and spinach. In the beds without row covers, **not a single plant survived the winter**. The researchers were bewildered by the dramatic results because the temperatures recorded under the row covers were the same as without row covers (-2° F). The researchers theorized that the frost heaving and drying was less severe under the row cover material. They are continuing the trials, so perhaps we'll soon know even more about row covers. In the meantime, I encourage you to try some row covers this spring.

Resources:

Virginia Tech Publication 426-381 "Season Extenders" http://pubs.ext.vt.edu/426/426-381/426-381.html

"Vegetable Production Under Row Covers," *The Virginia Gardener*, Volume 6 Number 2, February 1987 (S.B. Sterrer)

"Extending the Season," https://blogs.cornell.edu/gblblog/files/2016/04/Extending-the-Season-1zc6nw0.pdf

"Row Covers for Vegetable Gardens," (Washington State University Community Horticulture Fact Sheet #19)
http://ext100.wsu.edu/king/wp-content/uploads/sites/17/2014/02/Row-Covers-for-Vegetable-Gardens1.pdf

In the Vegetable Garden-November

By Cleve Campbell | November 2018 - Vol. 4 No. 11

With the arrival of November, the 2018 vegetable growing season is finally coming to an end. Here in central Virginia the summer gardening season may be remembered as the 2018 rainy season. How rainy you ask? According to ACCU Weather, Inc., the normal year-to-date (Jan.-Oct) rainfall in our area is 40.67 inches. Our actual amount through October was 50.16 inches or 20 percent above our normal rainfall. Rain is a good thing for plants but too much can be detrimental to the garden, resulting in fungal outbreaks. I had my fair share of fungus problems this season plus stunted plants caused by the lack of oxygen in waterlogged soil. Fortunately, one of the great things about gardening is that there is always a next year and that reset button is only a few months away.

November in the vegetable garden is a clean-up month, and also a time to reflect back on the growing season as to what varieties performed well and what varieties performed below our expectations. Don't forget to make year-end notes in your garden journal; this information can be very valuable when planning for the 2019 growing season. We will soon be reminded of the upcoming 2019 growing season because in December we will start to receive the 2019 seed catalogs — chock-full of pristine and unblemished photos and exciting new vegetable offerings.

Here's my to-do list for November:

- **Root crops** such as carrots, radishes, turnips and parsnips **store well outdoors** in the ground. Just before the ground freezes, bury these crops under a deep layer of leaves or straw. Harvest as needed during the winter months.
- **Keep mulches pulled back** several inches from the base of **fruit trees** to prevent bark injury from hungry mice and rodents.
- **Fallen, spoiled or mummified fruits should be cleaned up** and destroyed by burying or placing them in the trash. Good sanitation practices reduce re-infestation of insects and diseases in the following seasons.
- **Mulch strawberries** with straw or leaves. This should be done after several nights near 20ºF but before the temperature drops into the teens. Apply the straw or leaves loosely but thickly enough to hide plants from view.
- **Now is a good time to collect soil samples** to test for pH and nutrient levels. A free soil testing kit is available at your local Extension Office. The Charlottesville-Albemarle Extension Office is located in the County Office Building on 5th Street Extension, 460 Stagecoach Road, Charlottesville. Tel. (434) 872-4580.
- Don't forget the **garden hoses: drain and roll up and store on a warm sunny day**. It's difficult to wind a cold water hose into a tight coil. Also, be sure to shut off and drain any outdoor water pipes and irrigation systems that may freeze during the cold weather.
- **Rhubarb** plants that are four years old or more can be **divided and transplanted**. Prepare the site by digging deeply and incorporating compost. Your efforts should be rewarded with a good yield in upcoming years.
- **Prepare a spot in the garden NOW for early planting of peas.** This way you'll be all ready

for planting peas in the spring, before the soil dries out.

- **Tidy up the asparagus bed.** Cut off the tops of the plants to about 3-4″ above the soil level. Weed, and add a winter dressing of compost or aged manure to the bed.
- **Early November is a good time to plant most fruit trees**, especially if a little mulch is added. Local gardening and landscape centers often offer discounts on fruit trees at this time of the year.
- If you have been thinking about installing a deer fence around your vegetable garden, the **fall and winter months are a good time to design and build a deer fence.**

Sources:

Virginia Cooperative Extension, Albemarle/Charlottesville, November Monthly Horticulture Tip Sheets, Va. Coop. Ext. Monthly Tip Sheets

"Deer," Internet Center For Wildlife Damage Management, Cornell University, Clemson University, University of Nebraska-Lincoln and Utah State University, Internet Center for Wildlife Damage Management –Deer

Farro, the Pharoah’s Grain

By Cate Whittington | November 2018 - Vol. 4 No. 11

I first encountered farro in a trendy Los Angeles bistro several years ago. When I asked the waiter to identify the deliciously nutty rice in my soup, I was surprised by his answer. “It’s farro,” he replied, “the pharoah’s grain.” Originating in the Middle East, this ancient grain has long been a staple of dishes along the Mediterranean coast. Often used instead of arborio rice for risotto, its mild flavor and chewy texture provide an interesting addition to soups, salads, and side dishes. Dr. Josh Axe, naturopath, calls it “one of the most heart-healthy, immune-boosting grains on the planet.” Farro is a wheat but, according to Dr. Axe, its gluten levels are lower than today’s wheat, making it a tolerable choice for some people with gluten-sensitivity.

After tasting farro, I decided I must add the grain to my pantry but, upon my return to Charlottesville, I had difficulty finding it. A year or more passed before I stumbled upon a recipe for farro salad in *The New York Times Magazine.* By then, farro could be found on grocery shelves throughout Charlottesville. Chef Ryan Hardy’s dish quickly became my favorite summer salad. The recipe below is my fall version of the one from Chef Hardy’s restaurant, Charlie Bird’s in SoHo. Cooked in apple cider, I have substituted butternut squash, apples, cranberries, and pumpkin seeds for tomatoes, radishes, and pistachios. Make the bowl your own by adding whatever you like–avocado and beets are both tasty additions.

Ingredients

1 cup farro*

1 cup apple cider

2 teaspoons Kosher salt

2 bay leaves

6 Tablespoons olive oil

2 Tablespoons fresh lemon juice

2 cups arugula leaves

1 cup parsley leaves, torn

1 cup mint leaves

1 cup roasted butternut squash

1/2 cup chopped apples

1/4 cup dried cranberries

Salt and pepper to taste

½ cup pumpkin seeds

½ cup Parmesan cheese, shaved with a vegetable peeler

*Farro is sold in a variety of forms, from whole to semi-pearled to pearled. Any of these varieties may be used in this recipe. Whole farro takes the longest to cook, but retains the most nutrients. Pearled takes the shortest amount of time to cook, but has no bran. To reduce the cooking time, it is often recommended that you soak the farro in water overnight, but I have yet to plan that far in advance. My excuse is that I prefer grains al dente.

Directions

1. In a medium saucepan, bring farro, apple cider, 2 cups water, salt and bay leaves to a simmer. Simmer until farro is tender and liquid evaporates, about 30 minutes.* If all liquid evaporates before the farro is done, add a little more water. Let farro cool; then discard bay leaves.
2. In a salad bowl, whisk together the olive oil, lemon juice, and a pinch of salt. Add farro to the dressing and mix well. Add arugula, herbs, squash, and fruit. Just before serving, add shaved Parmesan and pumpkin seeds. This is best eaten the same day, but will keep in the refrigerator overnight.

Resources

"Farro: An Ancient if Complicated Grain Worth Figuring Out," www.npr.org/2013

"6 Farro Nutrition Benefits That May Surprise You," draxe.com/farro

"Charlie Bird's Farro Salad," cooking.nytimes.com/recipes/-charlie-birds-farro-salad