Trumpet Vine

Knowledge for the Community From Loudoun County Extension Master Gardeners

Fall 2018

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LOUDOUN COUNTY
EXTENSION MASTER GARDENER
LECTURE SERIES

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October 4, 7 P.M., "Plant NoVA Natives!" with Margaret Fisher, author and advocate for using native plants in home landscapes. Learn about the benefits of native plants and the Plant NoVA Natives program.

November 1, 7 P.M., "The Gardens of Oatlands," with Mark Schroeter, head gardener since 2011 of 4 1/2 acres of terraced gardens at Oatlands historic estate near Leesburg.

For more information, visit our website at loudouncountymastergardeners.org.

Visit us on Facebook: Extension Master Gardeners of Loudoun County, Virginia.

Looking Forward to Fall

After a record-breaking wet and muggy summer, we are yearning for cool, crisp autumn days. We have suffered erosion, soggy gardens, drowned tomatoes, and a bumper crop of weeds.

The bright spot is the number of monarch butterflies and monarch caterpillars. Based on very unscientific anecdotal reports, there seems to be a mini resurgence of monarchs.

Photos by Nancy Feeney

In order to help monarchs make their migratory flight to their winter hibernation site in Mexico, we should have late-blooming nectar plants in our gardens. All native asters bloom into October; heath aster blooms into November. Many goldenrods also bloom through October and into November. Make sure you have some of these in your garden so that monarchs can fuel up on nutritious nectar for their long migration.

This issue is dedicated to fall topics: growing fall vegetables, enriching your soil with cover crops and leaf mulch, considering new plants, planting bulbs, learning why some trees hold their dead leaves, fighting the spotted lanternfly, and learning the time to plant a tree.

Master Gardeners are offering a way to buy bulbs from a well-known supplier and benefit the Master Gardeners; please see page 5.

Wishing you a wonderful autumn!

Master Gardeners Make a Difference—Join Us!

The residents of Loudoun County have plenty of questions about their gardens, what insects are beneficial, and how to protect the water quality among many other things. Master Gardener volunteers are the residential advisory arm of the Loudoun County Cooperative Extension Office. We provide research-based information under the auspices of Virginia Tech/VSU. We devote many hours each year as passionate advocates for the best environmental practices for landscape and vegetable production.

Perhaps you have called our Help Desk with your gardening question. Have you visited the Demonstration Garden at Ida Lee Park? We hope you have seen us at the Leesburg Flower and Garden Show. Maybe you or your child learned about planting seeds or vegetable gardens from our many volunteers. Master Gardeners love to teach others about what is so important to our community now and in the future.

Every year about this time we solicit applications for the upcoming class of volunteers in training for the new year. Our dedicated volunteers receive extensive training under the auspices of Virginia Tech/VSU and the Virginia Cooperative Extension.

Join us for a casual Applicant Information Meeting and Open House beginning at 7 p.m. on Thursday, September 27, at the Loudoun County Extension Office at 750 Miller Drive, SE, Leesburg, Virginia. The program begins promptly at 7:30 p.m. Meet current Master Gardeners, share your questions, and learn about our programs. We are looking for individuals interested in supporting our Environmental Stewardship and Value of Landscape programs to assist with projects focused on water quality and healthful eating. Our next training class begins at the end of January 2019 and finishes at the first week of April.

Some of the many services provided by Loudoun County Master Gardener volunteers include:

- Prioritized programs like Healthy Virginia Lawns, Demonstration Garden, Garden to Table Community Education, and our Master Gardener year-round Help Desk.
- Volunteer-staffed garden clinics that offer information and advice at local farmers markets and several locations.
- Monthly expert guest lecturers on the first Thursday of each month and an annual “Let’s Get Growing” symposium each March.
- Instructional lectures at libraries, to community groups, and to garden clubs.
- Mentoring resident homeowners associations (HOAs) in community vegetable gardening.
- Children’s Education Team that works with 4H in schools and community groups.
- And, as mentioned above, a Demonstration Garden at Ida Lee Park that implements the latest research-based practices in both ornamental and vegetable gardening, hands-on vegetable gardening instruction most months, and soil tests during the spring through fall.
- We also have opportunities for members interested in technology, leading us into the future and more. You may have heard the phrase “right plant, right place.” It works for people too! The Master Gardener program is so diverse that everyone can find his or her niche!

Applications for the Loudoun County Extension Master Gardener Class of 2019 are being accepted now through October 28, 2018. Please email any questions to LCMGTRAINING@gmail.com or learn more details at http://loudouncountymastergardeners.org/become-master-gardener/.

Deborah Wilson, Loudoun County Extension Master Gardener

Fall Planting Time for Spring Flowering Bulbs

When you think of tulips and daffodils, you probably picture a lovely spring garden, but now is the time to make that spring vision happen. Fall is planting time for many spring flowering plants and bulbs. But before you rush out to buy an armful of bulbs, it is helpful to understand what they are and how to plant and care for them.

The term "bulb" is often used to describe any type of plant organ that stores food or energy underground or at ground level until conditions are favorable for new growth. Thus, the term may refer to--botanically speaking--true bulbs, corms, rhizomes, and similar structures. While the growing methods for these various bulblike structures are generally similar, there are important differences.

True bulbs, such as *Tulipa* (tulips) and *Narcissus* (daffodils and jonquils), consist of a short, modified stem with layers of fleshy leaf bases or scales on top of a basal plate that surround the plant's growing point. Many of these also have dry protective outer scales. Corms, such as those for crocus and gladiolus, are swollen underground plant stems made of more solid tissue than the layers of a true bulb. Corms generally are covered by dry papery covering formed from the previous years' leaves that help protect the growing tissue. Unlike true bulbs, they may have more than one growing point. Rhizomes are similar to corms in that they are a type of stem, but in this case, one that grows horizontally underground or at ground level. They send out roots and new upward shoots at intervals along the stem. Lily of the valley, cannas, and some irises are examples. Dahlias, which are tubers, another type of food-storing structure, are generally planted in the spring so are not addressed here.

Left to right: daffodil bulb, allium grown from bulb, iris rhizome, bearded iris. All photos by D. Bayless

Regardless of the specific type of bulblike structure, most go through a similar growth cycle. These plants have all developed and adapted to allow them to survive unfavorable growing conditions. For spring flowering bulbs, growth begins in late winter and early spring as weather begins to warm following a cold spell. In fact, many of the bulbs and bulblike structures require a chilling period to flower. Following this cooling period, new stems begin to form at the growth point, deriving their energy from food the plant has stored in the bulb. Eventually flowers form. After the flowers fade and die, the plant continues to absorb sunlight, water, and nutrients and

produces food, which it stores in its underground storage structure. After several weeks, the leaves will die back and this underground storage structure (the bulb or bulblike organ) will be ready to wait for favorable growing conditions again. Many of these plants do produce seeds, perhaps as nature's backup plan, but plants produced from the seeds take substantially longer to grow and may not replicate the parent plant as well as those produced by the bulb and new bulbs that develop from the parent bulb over time.

Since most of these spring flowering bulbs do not like hot weather, the best time to plant them is mid-September through mid-November when soil temperatures fall below 60 degrees F but there is still time to allow the roots to grow before the ground freezes. Bulbs are best planted where they will receive a minimum of five to six hours of direct sunlight a day. Many can be planted under deciduous trees since they will flower before the shade develops, but they still need some sunlight to continue making and storing food throughout the summer months.

The planting site must have good drainage since most bulbs do not like wet feet. But they do not want it too dry either so adding compost will help ensure proper moisture retention. Most bulbs like a pH range between 6 and 7. A soil test will determine if you need to raise or lower the pH in your selected spot and if there is ample phosphorous to encourage root growth and bud development.

Planting depth will depend on the bulb type and size. Most bulbs should be planted so that the bottom of the bulb is at a depth two to three times the height of the bulb. Rhizomes of bearded iris, however, are planted just at or below the surface. In a new bed, or where a large area can be dug to the proper depth, positioning the bulbs and then covering all bulbs with soil to achieve the optimal planting depth is preferable to individual planting. Once bulbs are planted and lightly watered, a light layer of mulch will help maintain the proper moisture, deter weeds, and lessen the chance of bulbs being pushed up during alternate freezing and thawing in the winter. Just remember to check planting times, depths, and other requirement for the specific bulbs (or other bulblike structures) that you are planting.

Other planting considerations include the presence of animals or insects in your area that might eat or damage your bulbs and the aesthetics you desire after the bulbs have stopped blooming. Voles, squirrels, rabbits, and deer love certain bulbs--tulips and crocuses are favorites. To deter animal damage, you can try planting the bulbs in wire cages or covering the area with a layer of coarse gravel. For insect damage, you can seek guidance from an Extension Master Gardener volunteer at the Help Desk. Once flowers fade, the leaves should be allowed to die back naturally so they can continue to make and store food in the bulb for the next year. This can make your garden appear a bit untidy. Ways to remedy this include intermingling bulbs with ground cover, annuals, or perennials that will hide the fading leaves.

One advantage of bulbs is their return for a number of years as long as conditions are optimal. There will come a time, however, when the flowers seem smaller or nonexistent or the bed becomes too crowded. Then it is time to dig up your bulbs. This should be done once the bulbs have made and stored food for the coming year, so early fall is a good time for this. Take as much care as possible when digging to try to avoid damaging the bulbs. For tulips and similar bulbs, carefully dig deeply to lift the bulbs. Small side bulbs can be carefully separated from the parent bulb. If you have the space, you can plant and allow these tiny bulbs to mature, but if

your space is limited, replant only large, healthy bulbs. Those that are soft, shriveled, cut, diseased, or too tiny should be tossed out. For rhizomes like iris, gently lift the rhizomes and break or cut into smaller pieces along natural breaking points. Replant pieces that are at least three to four inches and have a grow point, but discard any diseased or damaged ones.

If you already have bulbs in your garden, dividing and replanting might be all that is needed to revive your garden to bring back a beautiful show in the spring. However, if you want to start fresh or add new or interesting varieties, now is the time to look for those new bulbs. Local garden centers carry many common varieties. If you can personally inspect the bulbs, look for large (compared to others of the same type), plump, firm bulbs that show no signs of damage or disease.

There are also many catalogs and online sources for bulbs. Be sure to select reliable sources since you will not be able to inspect the bulbs before purchasing.

LCMGA Bulb Sale

Loudoun County Master Gardeners Association has recently partnered with Brent and Becky's Bulbs, a Virginia-based company, as a source to make quality bulbs available to local gardeners and raise money for our organization. When "Loudoun County Master Gardeners" is identified during a purchase, we will receive 25% of that purchase price. This can be done online or with phone or mail orders. For online orders, go to http://bloominbucks.com/home/confirm/15503. You will be asked to select either the fall-planted bulbs or spring-planted ones. This is an ongoing fundraiser, so whether you order bulbs at this time or later, the fundraiser is in effect. Remember to check back later for spring-planted bulbs. At checkout, make sure the page shows "Fundraising for Loudoun County Master Gardeners." It is that easy to beautify your garden and help raise funds for the Loudoun County Master Gardener Association programs! Thank you for your support. And, enjoy your spring flowering bulbs!

Diane Bayless, Loudoun County Extension Master Gardener

Thinking About Growing a Fall Vegetable Garden?

Albert Camus said that “fall is a second spring.”

Fall does not have to be the end of your garden season. In our area of Northern Virginia, hardiness zone 7, fall can be one of the most productive times of the year in your vegetable garden. Many crops thrive in cooler weather and even into the winter with protection.

Fall gardening is often easier since there are fewer pests and problems in cooler weather. Many vegetables adapt well to fall planting. Among these are the “cool” season crops such as cabbage, carrots, broccoli, spinach, kale, and cauliflower. Spring temperatures often heat up rapidly causing crops like lettuce and spinach to bolt (go to seed) and become bitter.

Filling space vacated by spring crops with summer-sown vegetables will keep your garden productive into fall and even into winter.

A little planning is necessary for zone 7 fall planting. To get an idea of when to plant, determine the average date of the first killing frost in the fall and count backward from that date, using the number of days to maturity for that crop. Your local extension will have planting charts and guidelines or you can pull up publication **426-331** at the vt.edu website.

There are several things to consider when choosing which plants will grow best for fall gardening. The time until the first killing frost is the time left in your growing season and will affect most crops. Decreasing day length affects which crops you can grow. Some crops run out of growing season if planted in late summer.

As a rule, full grown crops take about two weeks longer to mature in the fall than they would if they were planted in the spring.

Soil temperature is important for seed germination because some seeds won’t germinate if the soil is too warm, and some won’t germinate if the soil is too cool.

A fall garden offers an opportunity to manage soil fertility and even control weeds. Greens and turnips taste great and their broad leaves shade out weeds and the nutrients they take up in fall are cycled back into the soil as the winter-killed residue rots.

Leafy greens can soak up excess nitrogen left behind by spring crops. Soil can hold quite a bit of nitrogen but will leach away during winter. Space that had beans or peas is a good place to plant heavy feeders like spinach and cabbage family crops.

Fall is also the time to plant garlic and shallots after the soil has cooled.

Fall cabbages with hoops for row cover protection Photo by N. Martin

Vegetables that can survive light frosts in the 30°F to 32°F range include beets, Chinese cabbage, cauliflower, collards, green onions, potatoes, Bibb and leaf lettuces, mustard greens, radishes, spinach, and Swiss chard. Flavor is improved by cooler temperatures.

Fall greens and radishes. Photo by N. Martin

Hardier vegetables that can survive temperatures as low as 20° include green cabbage, broccoli, Brussels sprouts, carrots, kale, leeks, and turnips. These vegetables will continue to grow during thaws between freezes.

Even if tops wilt from cold, the roots can survive with mulching and you can harvest them through the winter.

Keep newly planted beds moist long enough for seeds to germinate. Seeds of leafy greens germinate quickly, but kale, spinach, and carrots are slower to germinate.

Some HELPFUL HINTS to remember:

- Keep soil moist to give seeds a chance.
- Select varieties with shorter days to maturity or rated for late season growing.
- Count back from frost date but add extra time to your calculation since days are getting shorter and cooler as plants mature.
- As cold arrives have row cover or other insulating fabric ready. You might use hoops or stakes to frame over the crop.

••• **READ THE SEED PACKET FOR PLANTING INSTRUCTIONS.** It is also a good idea to do a little research on crops you aren't familiar with growing.

A few handy links to check out on fall gardening:

— pubs.ext.vt.edu

— *https://www.almanac.com* › *Gardening* › *Growing Guides*

— *https://www.southernstates.com/articles/winter-vegetables.aspx*

— *https://www.seedsavers.org/fall-vegetable-garden*

Normalee Martin, Loudoun County Extension Master Gardener

Lettuce and cabbage.
Photo by N. Martin

Green Manure

Green manure—the term doesn't conjure up visions of beautiful vegetable gardens does it? In fact, it sounds like something to be avoided at all costs. However, if you are looking for a cost-effective means to improving the soil for a healthier veggie garden, green manure is the way to go.

Contrary to the famous saying, green manure doesn't "just happen." It's an important component of an ongoing, intentional soil improvement program. Green manure references crops that are grown only to be tilled back into the soil and decompose thereby increasing nitrogen and organic matter. The terms "green manure" and "cover crop" are often used interchangeably; to be accurate, it is a cover crop while alive and green manure when decaying. For the most part, the term green manure will be used in this article to cover the full life cycle of the plant.

The benefits of planting green manure crops are many, and there are few practices that provide such a wide range of solutions to so many soil challenges:

- Green manure crops provide inexpensive sources of organic material and nitrogen.
- The growth and tilling of these plants improves soil texture and structure, helping to reduce compaction and prevent erosion.
- By planting cover crops in the fall, we can reduce the leaching of nutrients that can occur during heavy winter and early spring rains.
- It can also serve as living mulch that reduces weeds, while at the same time attracting beneficial insects.
- Several recent studies have shown that the use of green manure can lead to increased crop yields.

We usually associate the use of green manure crops with larger farms and commercial operations. Yet this is a practice that anyone with a small vegetable or flower garden can incorporate into his or her gardening routine. Any area of your garden that will remain unplanted for a time, or is in need of soil amendment, is a prime target for green manure crops. So what plants constitute green manure, and which ones should you choose for your garden? It all depends on the time of year and what soil problem you may be trying to solve. As always, start with a soil test that can pinpoint what may be lacking in your soil.

Plants that can serve as green manure crops fall into two categories: legumes and nonlegumes. If you are trying to increase the amount of nitrogen in your soil, then legumes are the green manure for you. Commonly used legumes include: alfalfa, clover, and vetches, as well as peas and beans. The roots of leguminous plants interact with the soil bacteria and are able to draw and "fix" nitrogen from the atmosphere for plant use. Nitrogen accumulation from legumes can range from approximately 40 to 100 lbs. per acre. Legumes are typically sown in the spring and summer.

Nonlegumes, such as winter wheat and winter rye, barley and other grasses, brassicas, and mustards provide valuable sources of organic material with their large plant canopies and can improve soil structure. The addition of this organic material helps improve the movement of air

and water through the soil and adds nutrients. These plants are easier to establish than legumes and germinate more quickly, making them an attractive choice for fall sowing.

Red clover as a cover crop. Photo courtesy OSU Small farms

As summer ends, now is the time to incorporate green manure into your garden plans. Typically, green manure crops are sown several weeks before the first frost, at a rate of three to four pounds per 1,000 square feet. These crops should then be tilled back into the soil in early spring, about a month before the final frost. Remember to broadcast the seed with care! If hand tools will be used next spring to turn your cover crop into the soil, take care not to broadcast the seed too thickly. For example, some vetches, if seed is applied too thickly, can be almost impossible to turn over with a pitchfork.

In the Demonstration Garden at Ida Lee Park in Leesburg, maintained by the Loudoun County Master Gardeners, green manure crops or cover crops are used regularly to protect from winter erosion, and again throughout the year in large areas that may be done producing other crops. Lorrie Greenman, the manager of the vegetable garden at the Demo Garden explains, “Winter cover crops at the demonstration garden include oats, field peas, crimson clover, hairy vetch, and winter rye. Oats and field peas are winter-killed and very simple to incorporate in the spring. Crimson clover and hairy vetch should be allowed to grow and flower. At that point they can be killed by cutting or mowing at the base of the plant. Winter rye is more challenging to kill and incorporate. It has its place as a cover crop, but gardeners should do some research before planting. Buckwheat is a cover crop that is used occasionally during the summer. For example, it can be planted in the cabbage bed after harvesting. It is allowed to grow and flower then incorporated into the soil. After two to three weeks of decomposition, another set of cabbage transplants can be put in for an early fall harvest.”

To learn more about green manure, check out the following websites:

- Virginia Tech: Soil Preparation https://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/426/426-313/426-313PDF.pdf
- Virginia Tech: Soil Health and Cover Crops https://ext.vt.edu/agriculture/soil-health.html

Typically when gardeners look to the fall, we think about cleaning up our gardens, planting bulbs, and opening catalogs to dream about next year’s garden. Not so fast! This year, remember that your soil needs some attention before winter starts and get planting!

Jan Lane, Loudoun County Extension Master Gardener

Leaf Mulch—As Good as Gold

Pound for pound, leaves can do more to improve your garden than any lawn or garden product available. And they are free and natural!

In forests and other natural settings, tree leaves and other organic materials form a natural carpet over the soil surface that conserves moisture, modifies temperatures, and prevents soil erosion and crusting. In time, bacteria, fungi, and other natural occurring organisms decompose or compost the leaves and other organic material, supplying the existing plants with a natural, slow release of nutrients. Yet every fall we rake and bag leaves to be carried to the landfill and then in the spring we buy bags of wood mulch to spread around our shrubs and in our garden. *We should learn from nature!*

Think of leaf mulch as compost waiting to happen! It is the closest available substance to the organic soil layer that all gardeners are trying to achieve. It is an excellent growing medium and a weed suppressor.

Also called leaf mold, leaf mulch is rich in calcium, potassium, and magnesium essential for vegetables and other plants. As leaves decompose they slowly release into the soil nutrients and micronutrients not normally found in commercial fertilizers. Leaves also serve as food for earthworms, and we all know the value of earthworms in our garden.

Shredding

Leaves should be shredded prior to being used as mulch.

- Shredding hastens the decomposition process. Leaf mulch is actively decomposing. Four inches applied in the fall may be three inches by spring.
- Shredding prevents matting and ensures a porous layer that allows the penetration of air and water.
- Shredded leaves don't blow like intact leaves do, so they stay in place. Shredded leaves have a neat, even appearance.
- Shredding can reduce ten bags of leaves to one bag of leaf mulch.

How to Make Leaf Mulch

If you don't have a large number of leaves on your lawn, you can simply run a lawn mower over them to shred them. Some mowers are mulching mowers and do a very good job of shredding leaves.

If you need to handle larger quantities of leaves and leaves that are in beds and other areas where mowers can’t be used, you can find an increasing number of products on the market that shred leaves effectively. An online search for “leaf shredders” will produce many products to choose from. For the past 14 years I have used a product that I describe as a “weed wacker in a barrel.” It’s a round, barrel-like product on legs. Place leaves in the top. A string cutter shreds them and the shredded leaves come out the bottom to be caught in a trash bag. Because my property is heavily wooded, there are always twigs mixed in with the leaves that have to be pulled out. The string cutter does not handle twigs. This particular device is lightweight, simple,

and easy to store. Consider your requirements carefully. Read the reviews carefully. This is the type of product that can function poorly and be a disappointment.

Does the Type of Leaf Matter?

Of course you are going to mulch whatever type of leaves you have but you will get different results with different leaves. Some leaves decompose almost immediately. Tulip tree leaves don't linger long. By midwinter they are gone. Maple leaves are also thin but have greater staying power. I live in an area where oaks predominate. Leaf mulch from oaks decomposes nicely but will remain in sufficient quantity for at least 12 months.

Are Oak Leaves Too Acidic?

It is often assumed that acidic mulches will lower soil pH. However, oak leaves are not all that acidic to start with and they decompose into perfectly fine compost with a very reasonable pH. What you really need to remember is that the natural pH of any soil is very difficult to change and that decayed or decaying vegetation of any type, whether left on the surface or worked into the soil, simply won't have much influence on it. It is the underlying rock that determines the pH.

Can you spot the sycamore leaf among the oaks? Photo C. Ivory

Freshly fallen oak leaves are certainly acidic, but they become less and less so as they decompose. At the end of the process, they end up being, depending on the species, slightly acid to even a bit alkaline. And "slightly acid" is actually the acidity most gardeners want for their garden soil.

As a result, the acidity of oak leaves does no harm to plants when the leaves are used as mulch, nor does it make the soil more acidic than it originally was. Rhododendron enthusiasts often mulch their favorite shrub with oak leaves under the mistaken belief that the oak leaves will acidify their soil. (Rhododendrons and azaleas, along with blueberries, are among the few plants that grow best in very acid soils, but mulching is not going to acidify the soil.)

What to Do With Leaf Mulch

- Work it into the soil as an amendment to modify clay or sandy soil, increase the amount of organic material, and prevent compaction.
- Put a two-to-four-inch layer on top of the soil. Leaf mulch performs all the functions of wood mulch, only better. It never creates a crust that keeps out water and it decomposes faster.
- Put finely shredded leaves on your lawn. Shredded leaves will filter down among the blades of grass resulting in a healthier, weed-free lawn that needs less fertilizer.

So don't toss those leaves—mulch them. If you don't have trees or any source of leaves, become a leaf rescuer and liberate those bags that others leave at the curb!

Carol Ivory, Loudoun County Extension Master Gardener

The trees in one acre of forest drop up to two tons of leaves each fall.

Why Plant Trees in the Fall?

How often have we been told that fall is the best time for tree planting in our area? Before answering you should know that tree roots grow best when the soil temperature is 50°F or higher and the tree is dormant. The longer the soil is warm, the more time that a tree has to grow roots. Root growth slows when soil temperatures are cooler than 50°F or stops when the soil is frozen.[1] Based on this information, one could correctly surmise that spring and fall are the best times for transplanting trees. However, the preferred planting time is dependent on other factors such as climate as well as the plant species. Areas such as Michigan and New England often have short fall seasons so fall may not be the best planting time for those areas. On the other hand, in Washington state, fall may be ideal because this season provides more moisture than other seasons.

In Northern Virginia, many gardeners and landscapers choose to plant in the spring because generally the weather is mild, there is adequate moisture, the largest selection of stock is available, and nurseries and landscapers are advertising their products and services. Also, during this time of nature's renewal, winter-weather-bound gardeners are ready to plant. In addition to these reasons, many experts report that some trees transplant better in the spring. The University of Maryland Extension (UMD) recommends planting the following trees in the spring:

> Birches, dogwoods, European hornbeans, hawthorns, golden raintrees, magnolias, oaks, flowering pears, poplars, sourwood, sweet gum, tulip tree, willows, and zelkovas.

Students plant trees in the fall at Eagle Ridge Middle School in Ashburn.
Photo by Mame Ward.

Except for the hornbean, sourwood, and sweet gum, Purdue University says these trees are slow-to-root trees that should be planted in the early spring just before or as new growth starts. UMD also recommends planting broadleaf evergreens in the spring except for mountain laurels, boxwoods, and hollies, which can be planted in the early fall if watered deeply and mulched.

In the early to mid-fall, our local temperatures are usually mild, the soil is at least 50°F or higher (which is needed for at least four weeks for adequate root growth[2]), there is usually sufficient rainfall, trees are beginning dormancy, and nursery stock is sometimes less expensive. This is a good time to plant all other woody ornamentals not

[1] The Practical Science of Planting Trees, by Gary W. Watson and E. B. Himelick, International Society of Arboriculture (ISA), published 2013, page 57.
[2] Ibid, page 59.

listed above. Late fall, that is, late November into December, is not advised because there is insufficient time for root growth.

So, the answer to the question, why plant trees in the fall, is: it depends.

For tree planting information, see Virginia Tech's publications "Planting Trees" at http://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/426/426-702/426-702.pdf

"Tree and Shrub Planting Guidelines" at http://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/430/430-295/430-295_pdf.pdf

The following are sources for information contained in this article:

The University of Maryland's publication "Planting Process" at https://extension.umd.edu/hgic/plants/trees-shrubs/selection-purchasing-planting-and-care/planting

Purdue University's publication "Planting and Transplanting Landscape Trees and Shrubs" at https://ag.purdue.edu/hla/pubs/HO/HO-100.pdf

Margie Bassford, Loudoun County Extension Master Gardener

Trees and Butterflies

Did you know that trees are important hosts to various butterfly species larvae? You may want to plant a tree for the butterflies. Here's a partial list of native trees that host Loudoun County butterfly larvae:

Oak: several hairstreaks and duskywings

Sassafras and Spicebush: spicebush swallowtail

Cherry: eastern swallowtail, spring and summer azures, red-spotted purple, viceroy

Hackberry: American snout, eastern comma, question mark, mourning cloak, hackberry emperor

Hoptree: giant swallowtail

Pawpaw: zebra swallowtail

Birch: eastern tiger swallowtail, dreamy duskywing, mourning cloak, white admiral

This does not include all the amazing moths such as the hummingbird clearwing moth, which depends on viburnums to host its larvae.

Marcescence

Have you puzzled as to why some deciduous trees cling to foliage through the winter while most don't, choosing instead to shed their foliage by late fall?

We have all observed some deciduous trees and shrubs, predominantly younger ones, holding on to their leaves (albeit shriveled, dry, and, at first, brown, but gradually bleached by the sun) long into and even through the winter. These plants are exhibiting ***marcescence*** (from the Latin, to shrivel up). While the term is most commonly applied to foliage, it can also refer to other plant parts, for instance flower corollas.

A striking example of a woody plant species likely to exhibit marcescense is American beech (*Fagus grandifolia*). The pale brown, papery winter leaves rustle pleasantly in winter winds and help us identify young beech in the forest understory. Many oak (*Quercus*) species too are marcescent as are some hornbeams or musclewood (*Carpinus*) and hophornbeams or ironwood (*Ostrya*). Some witch-hazels (*Hamamelis*) may hold onto foliage—more's the pity, as they are winter-blooming shrubs and their retention of dried, spent leaves can take away from their floral displays.

Young oak retaining its leaves. Photo by Luis Fernández García Wikimedia commons

Typically, deciduous trees (including hardwoods and some conifers) release enzymes from cells at the interface between the twig and the end of the leaf stem to form an abscission layer that facilitates leaf drop by separating it from the vascular bundles, allowing it to fall free. Trees benefit by shedding leaves as doing so reduces winter water loss and allows them to produce leaves during warmer seasons when they can more efficiently use the sunlight available.

Marcescent leaves, unlike typical deciduous tree leaves, don't develop an abscission zone at the base of the petiole with a separation layer (thin-walled cells that break easily, enabling leaves to drop) nor corky cells, which form a protective layer on the twig side.

At times, early cold weather or frosts may interrupt the abscission process or rapidly kill leaves. In such cases, we will see an increase of marcescent leaves. But when there aren't killing frosts, why would trees hold fast to summer's leaves?

The reasons for marcescence are not yet known, though theories abound as to why it occurs. We see marcescent leaves more commonly in immature or smaller trees or on lower branches of larger trees. Marcescence can occur when trees are young but may disappear as a tree matures. It can also happen on scattered branches only or not on all.

It could be that retaining withered leaves may be a defense against browsing deer, as well as protection of leaf buds from winter desiccation. The spent leaves, which are less nutritious to browsers, may protect buds and the more tasty and nutritious new twig growth in the spring by making it hard for browsers to nip the buds or see the new twigs under the dried up, bitter, difficult-to-digest leaves, which have less nutritional value. A Danish study found that deer offered hand-stripped twigs preferred them to marcescent twigs, especially of beech and hornbeam. Nutrient analysis of twigs and dead leaves seems to point to the possibility of the leaves protecting the twigs.

As marcescent leaves are often seen in juvenile trees, they may also help protect these young trees from exposure to damaging winds. Furthermore, by trapping falling and wind-blown snow and directing it to the tree's base, these desiccated but steadfast leaves may also serve to get more moisture to the base of the tree through the winter and into the spring, obviating potential water stress.

Another possible reason trees might retain their leaves—and a growing number of ecologists believe this—is nutrient cycling and availability. Leaves dropped in the fall would join others on the forest floor and begin to decay. As they decay, released nutrients could leach away and be unavailable to the trees the next growing season, as leaves decompose more quickly on the ground. This might especially impede small or juvenile trees with smaller roots, especially in marginal soils, which could benefit from holding on to their leaves until spring. By retaining their leaves until then, they release and recycle their nutrients, at the most critical time, providing extra organic matter to the soil in their root zone just when they need it most for spring growth. Even small amounts at the right time could shift the competitive advantage toward these species on poor sites. Thus, marcescence could have adaptive significance for trees growing on dry, infertile sites, as it may be advantageous to trees in dry, cold, deer-infested environments.

Whatever the reason for marcescent leaves, when new growth begins next spring the expanding buds will push them off and deck the branches with new greenery. Until that occurs, we can take pleasure in seeing them wave and hear them rustle, adding interest to woodlands along the roads, in fields, and in our yards. We can also be thankful to them for the shelter from harsh winter winds and predators they may offer birds as they perch among them.

Loudoun County Master Gardener Tree Steward

Recycling Plastic Trays, Pots and Tags

Lowe's accepts plastic plant trays, pots and tags for recycling at any Lowe's Garden Center. For more information on recycling see
https://www.lowes.com/cd_helping+the+environment+with+recycling+centers_368967519_

Herb Drying 101

As the cooler weather of autumn approaches, the window period for preserving your garden herbs is coming to a close. Preserving your homegrown herbs can extend the season of fresh taste into the winter months. Home-dried herbs have the advantage of freshness, which can provide better flavor as compared to store-bought herbs, especially those that have been stored for some time! This article will describe one of the easiest methods of drying herbs--air drying.

Recommended Herbs for Air Drying:

- Bay
- Dill
- Lemon Balm
- Lemon Verbena
- Marjoram
- Oregano
- Rosemary
- Sage
- Summer Savory
- Tarragon
- Thyme
- Winter Savory

More tender herbs can be dried, but their flavor is better preserved by freezing. These herbs include basil, chives, cilantro, lemongrass, mint, and parsley. Freezing herbs can be accomplished by chopping fresh herb leaves and adding generous amounts to water-filled ice cube trays. Once frozen, the cubes should be stored in air tight containers in the freezer. The cubes can be used in recipes.

Harvesting Tips:

Harvest herbs early in the day before the heat of the sun affects the plants. This is when the herbs will have more of their essential oils. Healthy foliage with maximum flavor will occur on herbs before they begin to flower. A flowering herb may have a somewhat bitter flavor. However, you can maintain healthy foliage for harvesting by routinely deadheading the flowers. If the plant has been sprayed with any pesticides, follow the manufacturers' recommendations for harvesting after the last application.

Annual herbs can be cut back by half at one time. Perennial herbs can be cut back by a third at one time. Cut the herbs in lengths suitable for bunching and hang drying.

Drying Tips:

Harvested herbs should be rinsed and patted dry. Remove dead or diseased leaves. Tie small bunches of the herbs together by the stems. You could use grocery store twist ties, rubber bands, or string. Hang the herb bunches by their stems in a dry, well-ventilated location. The area near the household furnace could be a suitable spot. Another drying option is to spread the herbs out on a screen, also in a dry, well-ventilated location.

The herbs are ready when they are crisp and brittle. The leaves should easily crumble with a pinch. The leaves may be removed from the stems for storage, but avoid crushing the dried herb leaves until they are ready to be used.

http://extension.illinois.edu/herbs/tips.cfm

Storage Tips:

To ensure best flavor, the herbs should be stored soon after they are sufficiently dried. The herbs should be stored in clean, air-tight containers. Re-using glass jars from expired store-bought herbs works well for this purpose. Most freshly dried herbs will maintain good flavor for up to a year.

Using Dried Herbs:

Drying herbs concentrates their flavor. You would use a smaller amount of dried herbs in a recipe that calls for fresh. As a general rule, you would use one quarter to one third the amount of dried herbs for recipes that call for fresh.

Here is a good rule of thumb to use for recipes:

- 1 tablespoon fresh herb =
- 1 teaspoon dried herb =
- ¼ teaspoon powdered herb

Bonus: Seeds

Seeds that are used for culinary purposes can be left on the plant until the seeds (or seed pods) mature and turn brown or gray. Cut the herb stalks and shake or gently rub the seeds onto a paper towel or piece of paper. Remove unwanted debris. The seeds should be stored in clean, dry containers. Seeds suitable for harvesting include:

- Anise
- Caraway
- Celery
- Coriander
- Cumin
- Dill
- Fennel
- Mustard

For Additional Information on Preserving Herbs at Home:

http://extension.colostate.edu/docs/pubs/foodnut/09335.pdf

References:

Herb Gardening: Harvesting, Drying, and Storing Herbs
http://extension.illinois.edu/herbs/tips.cfm

Harvesting and Preserving Herbs for the Home Gardener
https://content.ces.ncsu.edu/harvesting-and-preserving-herbs-for-the-home-gardener

Let's Preserve: Drying Herbs
https://extension.psu.edu/lets-preserve-drying-herbs

Marcee Judd, Loudoun County Master Gardener Intern

Living With Honey Bees

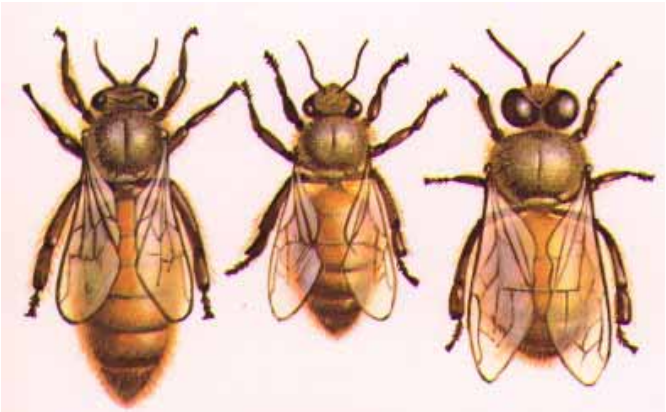
Honey bees were brought to North America by European colonists in the 1600s. Thomas Jefferson stated that Native Americans referred to the honey bee as "the white man's fly" because it preceded the advance of colonists across the continent. They were brought to the New World to supply European colonists with honey. The genus name for the honey bee, *Apis*, has original roots in the Egyptian language, but the name is also related to the Greek word meaning "swarm." The species *apis mellifera,* is the most common honey bee in the world and the one most commonly used for honey production in the United States*. Mellifera* means "honey-bearing" in Latin. There are seven distinct *Apis* species. Both A. *mellifera* and *A. carana* have been heavily domesticated.

The honey bee is one of the most studied invertebrate animals in the world. They have been color coded, bar coded, numbered, and even radio collared in an effort to better understand and manipulate them. They have two specific differences from other bees living in North America. First, honey bees are very social, with both the queen and workers living in a hive. Second, they produce large amounts of honey, which is related to their sociality. It takes the efforts of the whole hive to create honey. Eighty five percent of other types of bees live solitary lives and don't make or store honey. An exception is native bumble bees, who live in small colonies during the summer and make a small amount of honey.

The sting of a honey bee has been described being like a match-head that flips off and burns your skin. The pain rating of the sting is rated 2 out of 4 when compared to the sting of other stinging insects such as wasps. Most native bees do not sting because they do not have colonies or honey to defend. Honey bees can sting only once because when they sting, the stinger rips out of their abdomen along with a sac of venom, and the barbed tip remains in the skin of their victim. It is certain death for the stinging honey bee. One home remedy to use after being stung by a honey bee is a poultice made from baking soda and apple-cider vinegar.

Honey bees need some sort of structure in which to build their nests. They are at home in both a natural cavity and in artificial hives. In the wild, colonies may be housed in hollow trees, rock crevices, unused buildings, an attic, an already built bee hive, or even exterior openings into stud walls. Paper nests found hanging from tree branches belong to wasps. The actual nesting space for honey bees is structured from secreted wax pellets that are formed into honeycombs. These combs are made from wax excreted by females from glands on the underside of their abdomen. Pollen is stored in some cells and honey in others.

Honey is derived from the floral nectar that foraging bees bring back to the nest and regurgitate to other worker bees. This regurgitation process is repeated until the partially digested nectar is finally deposited into a honeycomb. Then the bees fan it with their wings and seal the comb with a liquid when most of the water has evaporated. That liquid hardens to beeswax, which keeps the



Queen, worker, and drone bee. Illustration courtesy of U. of Arizona College of Agriculture & Life Sciences

resulting honey good indefinitely.

Honey bee colonies are a caste system with a queen, workers, and drones. Honey bees live in colonies of tens of thousands of sterile female workers. All workers are daughters of the queen. Honey bee colonies often contain over 50,000 bees. A honey bee colony typically consists of a single reproductive queen, several thousand drones (fertile male bees), and tens of thousands of workers, which are all female but lacking in full reproductive capabilities.

When the colony becomes crowded or the queen bee's egg laying slows, new queens are produced by feeding royal jelly and other compounds to worker bee larvae. When a new queen is six to sixteen days old, she will take to the sky and meet thousands of male suitors, mating with about ten to twenty drones. The males who mate with the queen have their genitalia ripped out and die as a result. After mating multiple times, the queen returns to the nest and lays eggs, never to mate again. A drone develops from an unfertilized egg laid by the queen. He cannot defend the hive, because he has no stinger. The drone's role is outside of the nest, when he mates with a queen in flight. Other than this important role, he has no other role except to rest, groom himself, and beg other bees for food. If a drone has not successfully mated after a week or so of trying, the workers will withhold food and he will weaken and die, or he will be driven out of the hive because he is a drain on their reserves. Over the winter the number of drones is minimal; even none exist in some hives.

After mating, the queen stores the sperm from these drones in a special organ called a spermatheca. In this organ she will keep the sperm alive for the remainder of her lifetime. The queen is an egg-laying machine. She may lay as many as 2,000 eggs per day and has a life span of up to five years. She is very important to the colony because she controls and regulates reproduction. A queen bee can choose whether she wants to lay an unfertilized egg, which will develop into a drone, or to use some sperm from her spermatheca to fertilize an egg, which will develop into a worker or a new queen. Each worker lives approximately six weeks and systematically rotates through specialized jobs including colony cleaner, larval nurse, wax maker and comb builder, unloader of pollen and nectar from incoming workers and honey maker, nest guard, and foraging bee. Foraging is hard work and once a bee becomes a forager she doesn't live very long. Worker bees also meticulously attend to the queen's every need, including feeding and cleaning her.

Communication among bees is done by a dancing ritual. This dance communication includes information such as the direction to fly, the distance, and the abundance of a particular food source. Communication is based on the pattern speed and degree of repetition.

Winter temperatures cause the honey bee to go into a quiescent state when its activity level slows down to a crawl. They will eat stored up honey and shiver in the frigid temperatures to generate metabolic heat to help them survive the cold of winter. "Winter bees" will survive in the hive until the queen starts laying eggs again in the late winter or spring. When the flowers begin to bloom, honey bees become active again and start to gather supplies to sustain another generation. In the warmer weather, honey bees live only a few weeks, to be replaced by other adult bees as they reach maturity. They are active on the basis of temperature rather than seasonality like other bees. They are most active between 60 and 105 degrees F. For this reason, they are valuable pollinators of crops that bloom before many native bees are active.

Worker bees defend their hives from predators as a coordinated group, with several hundred or thousand bees attacking a predator. Their stinger has a unique barb on it, like a harpoon. When they sting a predator, the barbs on the stinger cause it and the attached venom sack to lodge in the skin of the attacker. The venom sac continues to pump venom through the stinger into the skin of the predator, inflicting more damage than barbless stings inflicted by other bees.

Honey bees and their hives are the target of many diseases, parasites, and predators. Among these are varroa mites, tracheal mites, small hive beetles, spiders, cockroaches, ants, mice, skunks, bears, bee parasite mite syndrome (BPMS), nosema, and others. These pose a continuous challenge to bees and beekepers.

Starting in approximately 2006, United States beekeepers began to notice a sudden decline in their honey bee colonies. One-third or more honey bees abandoned their hives, leaving their queen and immature siblings behind, never to return. This loss resulted in a loss to beekeepers of from 50 to 90 percent of their hives. The answer to why this is happening has not yet been discovered; however, various explanations are: viruses, both known and unknown; fungi; parasites; mites; insecticides; hive movement; malnutrition, rain and/or high temperatures; air pollution; and a combination of these possibilities. Commercial honey bee hives require frequent movement and colony disruption as well as long, hard working conditions in often inhospitable environments. This can result in stressors on the honey bee that would be difficult to measure. The loss of the honey bees is critical because they account for nearly 80 percent of all crop pollination in the United States.

Heather Keith Swanson, Loudoun County Extension Master Gardener

***Hydrangea macrophylla* (bigleaf hydrangea) and *Hydrangea serrata* (mountain hydrangea)**

Of all the hydrangeas, *Hydrangea macrophylla* is the most popular, is the one most commonly thought of when hydrangeas come to mind, and is the type most often found in old gardens. Native to Japan and imported to Europe and the United States, it quickly became a favorite of gardeners in the 1800s. It remains popular today, as evidenced by the many common names by which it is called: bigleaf hydrangea, French hydrangea, mophead hydrangea, garden hydrangea, hortensia, florist's hydrangea, and snowball hydrangea. It has white, blue, pink, purple, and red flowers on a small- to medium-sized shrub.

Hydrangea serrata (mountain hydrangea), also from Japan, is very similar to bigleaf hydrangea in all respects. In fact, as recently as 2006 it was considered a subspecies of *H. macrophylla*, and that debate still hasn't been totally settled by botanists. The differences between the two species are small. Basically, the entire plant is somewhat smaller and it has smaller leaves and flowers. Both are hardy in zones 6-9. The culture of the two species and their cultivars is identical. Both are long-lived, hardy shrubs well adapted to our region.

Pink mophead hydrangea. Photo by Liz West,

The florist's hydrangeas we've all seen (and perhaps purchased) around holidays such as Mother's Day are simply bigleaf or mountain hydrangeas grown in greenhouses and especially treated to remain small temporarily. In warm weather they may be planted outside after blooming; in cold weather, if you want to save the plant, cut the faded blooms off and treat it as any other houseplant until the weather is warm enough to safely transplant it into the garden. It may take two to three years to recover, but if all goes well, eventually it will bloom again. Be sure to give it plenty of space to expand, especially if you don't know which cultivar it is!

Hydrangeas "play well with others." They are easy to place in the landscape as a flowering hedge or screen; in a flower border mixed with perennials, bulbs, and annuals; in a cutting garden; standing alone as a specimen plant in the lawn; or, for smaller cultivars, in a large pot.

The Flowers

Flowers borne in July and August are of two types:

- Mophead clusters (also known as hortensias): rounded, ball-like clusters consisting primarily of large, showy, sterile florets. A small number of fertile florets may also be present but hard to see since they generally are beneath the sterile florets.
- Lacecap clusters: flat, loose clusters with tiny, numerous, bud-like fertile flowers (that have a starry appearance when they open) surrounded by showy sterile florets.

The large sterile florets act as lures to attract pollinators to the smaller, less visible fertile florets.

Reblooming (ever-blooming) cultivars, technically called "remontant" varieties, have now been developed and bloom on both old *and* new wood. These are especially nice for prolonging the season. Plus, if you lose spring buds to a late freeze, you haven't lost the entire season's bloom; it simply will be delayed until later in the summer. Some of the most notable cultivars include *H. macrophylla* All Summer Beauty, Penny Mac, and Endless Summer® (released in 2004, the first of the rebloomers and still one of the very best), and *H. serrata* Tuff Stuff®.

Hydrangeas as cut flowers: Hydrangeas are lovely in bouquets either fresh or dried, but that's a subject best left for another day! It can be complicated!

Flower color: Both bigleaf and mountain hydrangeas can be white, pink, red, blue, purple, or even a mixture of blue, pink, and purple. The color of most blue, pink, and red hydrangeas is affected primarily by the genetic inheritance of the specific cultivar and the pH of the soil in which it is growing, and even, to some extent, the weather. That's putting it simply; it's a lot more complicated that that, but as gardeners, not scientists, we need not delve too deeply into the science of the matter. Of course, we can do nothing about a plant's genetic inheritance (except carefully selecting a cultivar to grow) or the weather (except by planting techniques), but we *can* do something about the soil pH, which is extremely important.

Briefly, in acidic soils, aluminum (a naturally occurring element in the soil) dissolves and is taken up by the roots from whence it migrates to the sepals, turning them blue. Thus, hydrangeas grown in acid soil (pH 5.5 or less) will have blue flowers. In slightly acid to alkaline soils (those with a pH of 6.5 to 7.0 or more), aluminum does *not* dissolve, and thus is unavailable to the plant. Hydrangeas grown in these soils will have pink flowers or red flowers if genetics so dictate. Between these two ranges, roughly 5.5 to 6.5, some aluminum is available to the plant and hydrangeas grown in these soils will tend to have blue, pink, and purple or lavender flowers, frequently on the same plant and sometimes even on the same flower head, for a lovely variegated appearance.

Lacecap hydrangea showing tiny fertile flowers just beginning to open. Photo by Melody McClure,

In our region, soils tend to be acidic. You may already have soil of the proper pH for production of blue flowers. Near brick walls and concrete sidewalks, however, lime may have leached into the soil over the years; in these places the soil would be more appropriate for pink flowers. Note: It's far easier planting a hydrangea in soil already suitable for the color you're trying to achieve than it is to amend the soil, a process which is only temporary and will have to be repeated again and again. Note also that, depending on plant genetics, some simply won't completely change color.

If you already have a plant in your garden and want to change the flower color, it can probably be done. However, it should be done carefully. Take a soil test, and follow the recommendations resulting from that test. It is very difficult to prescribe the amount of dolomitic lime necessary to raise the pH of your particular soil or the amount of sulfur necessary to lower it without knowing the results of that test. If you do chose to go this route, it will take at least a year after adding lime or sulfur for the flowers to change color. Quick fixes are also possible. The University of Georgia and Auburn University quick fix recommendations are as follows:

- To change pink flowers to blue (or make the blue more intense): Dissolve one tablespoon alum (aluminum sulfate) in one gallon of water and drench the soil in March, April, and May. (Be aware that too much aluminum sulfate can damage roots.)
- To change blue flowers to pink: Dissolve one tablespoon hydrated lime in one gallon of water and drench the soil in March, April, and May.

Be careful not to splash either mixture on the plant stems, leaves, or you. They can burn!

Bloom failure: Sometimes they just don't bloom! Almost certainly one (or perhaps more) of the following reasons will be the culprit. None are fatal, and all are correctable.

- Incorrect pruning. Discussed below.
- Deer. Browsing deer can eat spring buds, leaving you flowerless for the season, unless you have planted a reblooming hydrangea. The State Arboretum of Virginia (Blandy) lists hydrangea as a "frequently damaged shrub." Obviously, some protective measures are in order!
- Late bud-destroying freezes. If a late spring freeze occurs after flower buds have started to expand, they will be killed. Obviously, there will be no flowers unless you have a remondant cultivar in which case you have a second chance later in the summer. Planting on the north or east side of a building (where temperatures tend to fluctuate less) will protect the shrub from warm western and southern sun in late winter, retarding bud development and lessening the risk of frozen buds.
- Too much shade. Discussed below.
- Fertilizer too high in nitrogen. High-nitrogen fertilizers will result in glorious, lush leaves--and few flowers.

Size: Bigleaf hydrangeas grow from one to seven feet tall. Mountain hydrangeas are somewhat smaller. In both cases, height and width depend on cultivar and culture. Plant width is generally about the same as the height, although there are some exceptions.

Leaves: Leaves of both bigleaf and mountain hydrangeas are deciduous. Leaves of bigleaf are four to eight inches long by three to six inches wide, medium to dark green. (*H. macrophylla* Mariesii Variegata has leaves with white margins, as do a few other cultivars.) Leaves of mountain hydrangeas are two to six inches long by one to two and one-half inches wide, also medium to dark green. The leaves of most cultivars turn a pale yellow in the autumn before they fall and aren't particularly showy. Some cultivars of *H. serrata*, however, have leaves that turn red or burgundy in the autumn, Preziosa being one of them.

The tiny star-like fertile flowers on a lacecap hydrangea. Photo by Doevos.

Stems and Bark: Hydrangeas are fast growers. Stems rise directly from the soil, although some plants may exhibit a branching habit. As they age, their straw-to-tan-colored bark can begin to peel. This is not a problem! It's a characteristic of older plants. (Don't confuse peeling bark with nibbles from mice, voles, and rabbits; if this is occurring, you will see tiny bite marks on the stems.)

Soil: Soil should be well drained but moist (never soggy or dry), amended with organic matter. Mulches of compost or bark are useful both in retaining soil moisture and in preventing weeds.

Exposure: Both bigleaf and mountain hydrangeas thrive with morning sun (ideally four to six hours) and afternoon shade. They can take full sun, but in our climate they will need extra water to thrive. Even with extra water, the flower petals of plants in full sun may scorch and brown. In giving them shade, however, note that they won't do well *directly* under large trees, which will out-compete the shrub for available soil nutrients and water. *Near* large trees, where they can benefit from afternoon shade from the trees is fine, but not directly under the trees.

Water: In partial shade, bigleaf hydrangeas will be happy with one inch of water a week, provided either by rainfall or by a thorough drenching from the gardener's hose. In full hot sun, two inches of water a week will be necessary. Don't overwater; soil should be moist, not soggy. And don't mistake drooping leaves for thirstiness; on hot summer days, especially in full sun, the leaves may transpire moisture more rapidly than the roots can replace it. Do a finger test with the

soil, about four to five inches down. If the soil is moist, don't water. The plants should recover after dusk when both the sun and the temperature go down.

If not watered during a drought, established hydrangeas will survive, albeit looking rather sad and tattered. Newly planted shrubs, however, will need supplemental water to survive a drought.

Fertilizer: The University of Georgia and Clemson University's general recommendation is for two cups of 10-10-10 per 100 square feet in March, May, and July or a timed-release formula in early March. Sprinkle the fertilizer around the drip line and water it in. It's not necessary to dig it into the mulch around the plant. Don't fertilize after August 1; you may promote new growth which won't harden before winter sets in and it may winter-kill.

Pests and Diseases: Hydrangeas have no serious pest or disease problems.

Pruning: Bigleaf and mountain hydrangeas tend to flower on old wood with the exception of newer, remondant varieties that bloom on both old *and* new wood. Generally they never need pruning but if you have a mature shrub (at least five to six years old) that needs renewing, you can do so by cutting one third of oldest stems to the ground each year to increase air circulation and light and to renew the plant. By the end of the third year, you will have a totally new, rejuvenated plant. Do this immediately after blooming, no later than August 1, when new flower buds start to form. *Never* cut the entire plant back to the ground in one fell swoop!

Other than renewal pruning, if you feel you absolute *must* prune, do it *immediately* after flowering, by August 1, to prevent cutting off those new flower buds. The exceptions:

- Pruning in early spring to remove damaged or dead wood. To distinguish between living and dead wood, scratch the bark with a fingernail. Living wood will show green just below the bark; dead wood will not.
- Nipping off blackened branch tips or leaves that have been killed by a late spring frost.
- Deadheading *just below* the flower if you find the faded flowers objectionable. You might want to reconsider this, however. These old, faded flowers may help protect the flower buds beneath them from late winter thaws and freezes. In this case, nip them off in early spring, being careful not to cut off any of the fat flower buds below the faded head. (To distinguish between leaf and flower buds: fat buds roughly one-half inch long are flower buds; slim ones that are considerably shorter and smaller are leaf buds.)

The long, fat buds are flower buds. The small, short bud on the upper branch is a leaf bud. Photo by Abbie Jury, courtesy of Tikorangi the Jury Garden.

Planting: Hydrangeas are easy to transplant. Ideally this should be done in the fall, but spring is also acceptable. Generally accepted guidelines for planting any shrub should be followed.

Given proper care, hydrangeas are reliable summer bloomers certainly deserving of a place in our gardens.

Lina B. Burton, Loudoun County Extension Master Gardener

Hardy Begonias

You probably have a begonia or two, an attractive potted plant or a garden annual. There are more than 1,800 different varieties. All varieties but one are tropical or subtropical plants that won't survive freezing weather. But there is one variety that is a perennial in Zones 6 to 9, *Begonia grandis.* (Interesting trivia—the species name *begonia* was adapted by Linnaeus in 1753, in honor of Michel Bégon, a former governor of the French colony of Saint-Domingue, now Haiti. The specific epithet, *grandis*, means big or showy.)

I first saw hardy begonias growing "free range" under tables in a nursery green house. When I commented on them, the nursery owner said, "Take some." That was close to 20 years ago. Ever since, they come up in late spring and bloom in mid-summer through fall in my shady back yard. They clump under taller shrubs, pop up in unexpected places, fill open spaces, and get along well with ferns, hostas, and foam flowers. Just when the hostas are starting to look ratty, the begonias burst forth with big attractive leaves and pastel pendulous flowers that last until frost.

Large, leaves up to eight inches long are medium to olive green above and reddish green with red veining beneath. Male and female pale pink flowers (to one inch across) bloom in clusters from July to early fall. The flowers are slightly fragrant.

Hardy begonias will self-propagate by tiny bulblets, which form in the leaf axils in autumn and drop to the ground. Bulblets may also be harvested from the leaf axils and planted as desired. Plants may also self-seed. Allow seed heads to dry on plants; remove and collect seeds, which can be successfully stored. I simply let the plants reseed without any intervention. New season growth is usually late to appear.

These plants prefer rich, moist but well-drained soil in moderate or full shade, with shelter from afternoon sun. Hardy begonias die to the ground in winter and often reseed to form large colonies. They make a good, carefree, perennial companion for ferns, hostas, and any early blooming plants.

(All photos by Carol Ivory)

Carol Ivory, Loudoun County Extension Master Gardener

Aronia Melanocarpa

Mother Nature introduced me to her native *Aronia Melanocarpa*, likely with the help of one of her feathered friends. I found the small woody plant growing in my yard and assumed it was a seedling from the pyracantha (aka firethorn) living in another corner of the property. After I transplanted the 18-inch-tall seedling to a more suitable location, I began to watch and wait for orange pyracantha berries to appear. When my new friend's berries instead matured to a dark purple, nearly black, I thought something was wrong. I began researching to find out the cause of the problem. Was it insufficient moisture during fruiting? Perhaps a lack of some crucial mineral in the soil? To make a long story short, I eventually learned that my "sick pyracantha" was really a healthy *Aronia melanocarpa*.

So what is an *Aronia melanocarpa*? It is a low maintenance upright deciduous shrub that is a member of the rose (*Rosaceae*) family. Its common name is black chokeberry for the showy dark and astringent-tasting berries that ripen in the fall and stay on the plant throughout the winter. Native to Eastern North America in zones 3 to 8, *Aronia melanocarpa* grows in full sun to part shade and thrives in both wet and dry soils. The Chicago Botanic Garden includes black chokeberries in many areas, and they "are also planted extensively throughout the parking areas, where they are performing well despite the clay soil, high pH, and intense heat of those exposed sites." I don't know about you, but anything that grows in clay soil and intense heat has a place in my garden!

Easy to grow, aronia also provides year-round interest. Showy clustered white flowers 2½ inches across begin blooming in late spring and continue well into the summer alongside finely toothed glossy dark green leaves. The leaves look crisp and fresh throughout the heat of summer. They later turn a beautiful purplish-red in the fall, complementing the dark purple ripe berries.

Aronia melanocarpa grows from 4 to 10 feet tall (mine is 10 feet) with a 3-to-6-foot spread. Some resources I visited indicated that *Aronia melanocarpa* spreads by suckering, but in nine years mine has never suckered. The USDA's Plant Guide also notes "very little if any suckering." Perhaps some sources confuse the black chokeberry with the red chokeberry (*Aronia arbutifolia)*, a rapidly spreading wetland plant with a profusion of suckering stems. My aronia has been quite well-behaved. Its berries do germinate to produce seedlings that are easy to pull to discard, or better still, share with friends.

Black chokeberries, *Aronia melanocarpa.* Photo by Chicago Botanic Garden

Although I found some websites that call the Aronia berry a "super food" for its high level of antioxidants, even those sources describe the berries as astringent. Remember that the common name is chokeberry! I've seen firsthand that birds ignore the berries until the depth of winter, when pickin's are slim. Then they arrive in flocks to pick the bush clean.

Aronia's characteristics make it an excellent alternative to a white flowering crepe myrtle, albeit with an earlier timeframe for blooming, but with the added bonus of berries throughout the fall and winter. Furthermore, aronia has no serious insect or disease problems, unlike

my crepe myrtles, which had mildew problems in this summer's wet and humid weather.

If you're not lucky enough to receive an *Aronia melanocarpa* from Mother Nature, the shrubs can be purchased at nurseries. Commercially produced cultivars of various heights include Iroquois Beauty™, Mandshurica, Autumn Magic, and Low Scape.

Resources:

Missouri Botanical Garden,
http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=j420

Chicago Botanic Garden, https://www.chicagobotanic.org/plantinfo/chokeberry_black

USDA, plants.usda.gov/plantguide/pdf/pg_arme6.pdf

Wendy Hiller, Loudoun County Extension Master Gardener

Black chokeberry flowers.
Photo by Missouri Botanical Garden

Spotted Lanternfly Control

The spotted lanternfly, a new insect threat to Virginia crops, was discovered near Winchester, Virginia, in January. Thought to be native to China, the species was first sighted in the United States in Berks County, Pennsylvania, in 2014. Consequently, the Pennsylvania Department of Agriculture and Penn State University have taken the lead in the fight to control the spread of this dangerous insect, which can do serious damage to grapes, stone fruit, hops, and other crops important to Virginia. The Extension Office in Winchester is currently the focal point for monitoring and controlling this pest in Virginia. See https://www.youtube.com/watch?v=Wumtju2_0JM

This article describes steps that should be taken now, in the fall, to control spotted lanternfly.

Egg Mass Scraping

Spotted lanternfly adults lay eggs starting in October and will continue to lay eggs through the first few hard frosts. Spotted lanternfly eggs are laid on many surfaces including trees, rocks, and manmade objects that are stored outside. Egg masses contain an average of 30 to 50 individual eggs and are covered with wax. The wax, when it is first deposited, is light gray, but it takes on the appearance of mud as it dries. Property owners can scrape egg masses whenever encountered. This can be done using any hard or rigid tool such as a putty knife. It is best to scrape egg masses in a downward direction into a container with rubbing alcohol or hand sanitizer to ensure that the eggs are destroyed. See the videos listed below.

Arrows indicate the locations of spotted lanternfly egg masses on a tree.

These two links will direct you to two videos on identifying and destroying spotted lanternfly egg masses.

https://www.youtube.com/watch?v=ZZvzZLBepNs

https://extension.psu.edu/how-to-remove-spotted-lanternfly-eggs

Host Tree Identification

The spotted lanternfly has a close affiliation with the non-native invasive tree, *Ailanthus altissima,* or tree of heaven. Although spotted lanternfly will feed on other trees and plants, all life stages strongly prefer tree of heaven, and adult spotted lanternfly seem to require a meal from these trees prior to laying eggs. The tree of heaven has long been viewed as an extremely undesirable nuisance tree. Now there's a good reason to make a concerted effort to reduce the number of these trees. This Penn State article provides descriptions and photos that will help you identify any tree of heaven including the female tree of heaven. https://extension.psu.edu/tree-of-heaven

The spotted lanternfly eradication strategy is to eliminate the female *Ailanthus* trees and greatly reduce the number of male trees. The remaining male trees will then be used as trap trees in the spring.

If you have a stand of tree of heaven on your property, now is the time to identify and mark the female trees.

If you have tried to remove tree of heaven, you know that simply cutting one produces many sprouts from the roots. You need to inject a systemic herbicide to kill the roots. This is best done in the spring and summer during active growth so the herbicide is effectively carried throughout the tree and especially the roots. This method, *hack and squirt*, will be described in detail in the spring edition. Virginia and Penn State Extension are still developing the best practices for this method of *Ailanthus* kill. This includes the frequency and spacing of the hacks and the herbicide mix to use to squirt.

All female and many male trees will receive the hack and squirt treatment in the spring. Then, select male trees will be banded to capture the hatched spotted lanternfly nymphs.

More information on this process will follow. In the meantime, please identify and tag any female *Ailanthus* trees in the fall when the seeds are visible.

We lost the battle with the emerald ash borer because there was no real way to go after the insect. The ash trees are gone and now the ash borer may be moving on the the native fringe tree, also in the ash family. But this new threat is very different. It won't kill a single tree species, it will ruin the agricultural industry in Virginia and many of our personal crops. The plus side is that there is a "host" tree that, conveniently, is a noxious invasive. While it's a daunting task, there is a strategy that we can all help with. The insect is still contained to certain areas. We should all do what we can to curtail the spread of this threat.

Carol Ivory, Loudoun County Extension Master Gardener

My Backyard Certification Program

As a Master Gardener intern, I am proud of the efforts I have made over the past three years since I moved to Leesburg to add gardens to my yard and especially proud of how most of my plants are native Virginia species. At the Garden Symposium this year, representatives from the Loudoun Wildlife Conservancy explained the Audubon at Home Wildlife Sanctuary certification program. As I filled in the application, I found out that I did not have 10 out of 35 sanctuary species that are required before I could be certified. With the recent observations of a gray catbird living in one of my trees, a monarch butterfly drinking from my flowers, and a hummingbird visiting my nectar feeder, I am close to meeting all the qualifications listed by Audubon At Home. That got me wondering if there was a program I *could* qualify for now.

I was very happy to find out that LCMGA does have a similar program called My Backyard. Go to the LCMGA website, click on Programs, and choose the first link, which is My Backyard (http://loudouncountymastergardeners.org/programs/my-backyard/). Like Audubon at Home, My Backyard states that it is designed to "educate on environmentally sound landscape management practices for the homeowner." Both programs require good habitat practices that should be evident on your property and will help you "protect Virginia's natural resources."

To become certified, you need to complete the My Backyard Scorecard. Each action you take in your yard earns "inches toward self-certification." Once you have reached 36 inches or a yardstick, you are "eligible to become a Certified Watershed Partner." You will get a certificate that you can print and you can even purchase a Custom Garden Flag printed with Certified Watershed Partner on it for $20.

Once you are on the My Backyard web page, click on the link labeled Yard Actions. The page that pops up lists ten categories in which you learn how to "make positive changes in the environmental quality" of your yard. Each one of the ten categories is explained thoroughly when you click on it. I will highlight some of the easiest practices within each category to help you earn your 36 inches. You do not have to have inches earned in each category.

The first category is Maintain Healthy Soil. You need to do a soil test in order to determine the proper amount of fertilizer, lime, and any other nutrients your yard needs. You can certainly do your own soil test or you can contact Healthy Virginia Lawns and they will come out and do the soil test for you as well as make observations of the type of weeds and turf you have. Just remember that you must prepay HVL before a visit can be scheduled. Once you have completed a soil test, you earn four inches.

The second category is Recycle Yard Waste. You need to create and maintain a compost pile or a worm compost. Each action earns two inches. If you use your compost in your yard or garden, you can earn another two inches and if you agree to use yard waste bags to collect yard waste so it can be used for local composting, you can earn two more inches.

The third category is Be Wise When You Fertilize. You agree not to overfertilize your trees, shrubs, flowers, or turf. Following the recommendations for fertilizer application from Virginia Tech and carefully following the requirements on the fertilizer label are necessary to avoid problems in your yard and hazards to the environment or to wildlife. This category can contribute up to 13 inches to your yardstick.

The fourth category is Reduce Stormwater Runoff. If you have a rain barrel or a rain garden, you earn two inches for both actions. You pick up after pets (two inches), sweep grass clippings back into the lawn (three inches), mow lawns to an appropriate height for your specific turf (two inches), and use mulch or other porous items for walkways (two inches).

The fifth category is Right Plant, Right Place. Assessing your yard, including the growing conditions, amount of sunlight, and microclimate, earns two inches. Choosing groundcovers, grouping plants according to their water needs, and locating trees and shrubs to either provide shade or allow for solar heating during the winter also earns inches.

The sixth category is Mulch Matters. Allowing leaves to remain under trees when they fall as a natural mulch or using fallen leaves as mulch can earn you up to six inches. Maintaining a two- to three-inch mulch layer and not having mulch volcanoes around your trees also earns four inches.

The seventh category is Grow Native. Choosing native plants and creating a wildlife friendly habitat can earn you up to seven inches.

The eighth category is Remove Invasives. Making sure you are not planting invasives even if they are pretty and removing invasives from your yard will earn up to four inches.

The ninth category is Manage Yard Pests. You need to be able to identify five beneficial insects that naturally control harmful pests like the ladybird beetle or the assassin bug. Avoiding the use of pesticides and using cultural controls can earn up to six inches with two more inches earned if you use lower toxicity products like insecticidal soap or neem oil.

The tenth and final category is Water Wisely. Using a rain gauge and watering only when plants or turf show signs of stress earns five inches. The rest of this category explains using irrigation systems or calibrating sprinklers.

There are 47 actions listed on the My Backyard Scorecard that earn from two to four inches. You check off those actions you consistently complete and if you reach 36 inches, you can submit your form to become certified. Email the form to MyBackyardLoudoun@gmail.com or mail it to Virginia Cooperative Extension Office, Attn: My Backyard Program Certification, 750 Miller Dr., Ste F-3, P.O. Box 7000, Leesburg, VA 20177-7000. I received my certificate within five days of emailing my scorecard. All I have left to do is to purchase the flag and proudly display it in my garden.


Loudoun County

WATERSHED PARTNER

This Certification is proudly presented to

BETH H. CHECKOVICH

For yard actions measuring up to 36 inches through the

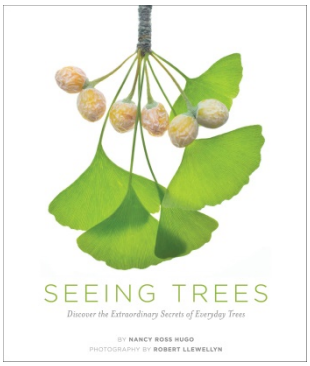
My Backyard Program

Dated this 23rd day of July, 2018

Virginia Cooperative Extension

Beth Checkovich, Loudoun County Extension Master Gardener Intern

Seeing Trees–Discover the Extraordinary Secrets of Everyday Trees



Speaking in Charlottesville, Nancy Hugo introduced her book on trees and showed these amazing photographs by her collaborator, Robert Llewellyn. These were not trees in a landscape, but extreme close ups of leaves, flowers, and fruits. Llewellyn used a new photographic technique to make his images incredibly sharp. He focused on the exceptional traits of ordinary trees. He and Hugo wanted this book to bridge the interests of botanists and ordinary tree lovers.

Their goal is to get people to discover the amazing ways trees have evolved and survived. The authors have shared an intimate sense of trees as living, breathing organisms as opposed to inanimate objects in our environment.

The book encourages the reader to look at trees through the seasons because many traits are time sensitive. One strategy for learning about a tree is looking down. Detritus below the tree--leaves, fruit, twigs, seeds, pods, and nuts--provides tree information. Squirrels even help us in the spring when they nip off tender end shoots to build their nests and some fall to the ground. Observing trees regularly over the years is best to understand their patterns and reveal their individual traits.

Phenology is the study of first occurrences in plant life cycle events and how they are influenced by season, climate, and habitat factors. The authors learned that light cycles have the most influence in how trees react to seasonal changes. An example of this is leaf color in the fall. Color change in leaves is a carefully calibrated chemical response to fluctuations in length of daylight and weather (frost and/or rainfall).

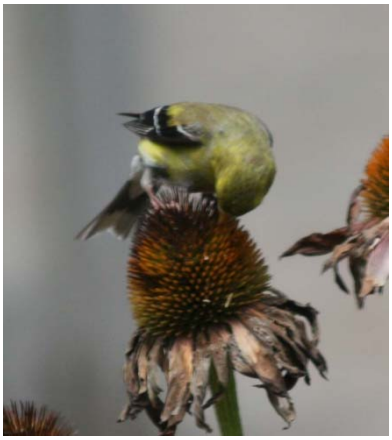
I love learning about trees, so I found when the authors go into detail about leaves, flowers and cones, fruit, buds and leaf scars, barks, and twigs, I am fascinated. The descriptions are accompanied by the most startlingly beautiful photographs that really bring the facts alive to the reader. That almost all North American trees have flowers surprises many people. Many tree flowers are inconspicuous, but they are shown in their true glory in this book's pages.

Seeing Trees details ten species of native Virginia trees. The chosen trees are familiar to many people, yet the imagery shown shows the trees in a light most have never seen. Each tree has adapted to compete and survive in its environment.

You don't need a forest or a park close by to interact with trees. They are all around, in parking lots, along streets, in neighbors' yards. Take a look next time you walk by a tree while walking your dog, or walking your child to the bus stop, or getting your groceries. Break the habit of overlooking something that is right in front of you. There is a thrill in discovery and fun in being a detective investigating a tree. They are incredible organisms and this book makes you want to see more.

Cathy Anderson, Loudoun County Extension Master Gardener

Those Finches on the Seed Heads



Goldfinch on coneflower seed head.
Photo by Rosann Kovalcik Blog by Wild Birds Unlimited of Grosse Pointe Woods

Are you being entertained and amazed by those beautiful little goldfinches on your coneflower seed heads?

American Goldfinches are almost exclusively *granivorous* (consumers of seeds/grains). Very few insects are consumed by these birds, even when feeding their nestlings. This is highly unusual in that spiders and insects are an essential part of the diet of 96% of North American land bird species. At the least, most seed-eating birds feed their nestlings insects.

The seeds of plants in the Composite family (sunflowers, thistles, dandelions, etc.) are the preferred food of goldfinches. Thistle seeds, being high in fat and protein, are high on the list. There appears to be a correlation between the late nesting period of goldfinches (late June or early July) and the generation of seeds, especially thistles. By the time American Goldfinch eggs have hatched, there is an ample supply of thistle seed for the nestlings.

Now is the time to keep an eye on the seed heads of thistles, coneflowers, sunflowers and other composites for the acrobatic seed-plucking antics of American Goldfinches.

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