Trumpet Vine

Knowledge for the Community from Loudoun County Master Gardeners

Fall 2015

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LOUDOUN COUNTY MASTER GARDENER LECTURE SERIES

FREE AND OPEN TO THE PUBLIC, 7PM UNLESS OTHERWISE NOTED ALL LECTURES ARE AT THE VIRGINIA COOPERATIVE EXTENSION OFFICE, 30B CATOCTIN CIRCLE SE, LEESBURG

October 1, 2015 "Plants, People & Place: An Amazing Dance Across time and Terrain" with Hayden Matthews, environmental historian and storyteller.

November 5, 2015 "Creating Holiday Gifts from Nature" with Lynn Hoffman, Northern Shenandoah Valley Master Gardeners.

March 12, 2016 Gardening Symposium, Ida Lee, Keynote speaker: Rick Darke

For more information and updates, please visit our web site at loudouncountymastergardeners.org

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

Fall is the Time to Plant and Plan

The nights are cooler, the days are getting shorter, there's a change in the air! It's time to shift gears and begin planning for next year. This may include drawing up plans for spring projects, taking advantage of the cooler weather to plant new trees and perennials or rearrange an existing area. Fall is the season to collect seeds and choose those which are best planted in the fall for optimal spring germination.

Ida Lee Photo by N. Martin

Demo Garden Photo by B. Bailey

This issue of the *Trumpet Vine* is dedicated to fall gardening activities — basic lawn care, experimenting with propagation, trying new plants and getting out ahead of next year's crop of harmful insects.

Gardeners all know that fall is the best time to plant. But do you know how and why you should water throughout the winter to give these plants a good start? This issue also offers an article on goldenrod that will help you select from the roughly 100 species just the right one for your garden needs.

And by all means enjoy the beautiful fall scenery that Virginia provides.

The Master Gardeners provide environmentally sound landscape management advice. Visit the Extension Office, 30B Catoctin Circle SE, Leesburg, 9-noon, Monday - Friday, call us at 703/771-5150 or send us an email Loudounmg@vt.edu.

Like to Garden and Serve the Community? Join the Loudoun County Master Gardeners!

If you like to garden, have a yearning to learn the fundamentals from gardening experts, want to meet like-minded garden enthusiasts, and give back to your community through volunteerism, then please consider joining the Loudoun County Master Gardener 2016 training program. You can learn more about the program by attending an **Open House on October 29, 2015 at 7pm** at the Loudoun County Cooperative Extension Office at 30 Catoctin Circle, SE in Leesburg. Please visit our website for complete details about the training program and to access the application at http://loudouncountymastergardeners.org/become-a-master-gardener/

Sponsored by Virginia Cooperative Extension, The Loudoun County Master Gardeners is a group of volunteers dedicated to working with the community to encourage and promote environmentally sound horticultural practices through sustainable landscape management educational programs. Our volunteers provide information and assistance to community members who have questions regarding home ornamental and vegetable gardens, and lawns. Our members complete extensive training to be certified as Master Gardeners.

Here is how we serve the community:

- Answer horticulture and environmental questions at our Help Desk office located in the Loudoun County Extension Office and at local community garden clinics and functions.
- Maintain a Demonstration and Teaching Garden at Ida Lee Park, Leesburg.
- Promote the protection of water quality and the environment by advising on the most effective and safe use of pesticides and fertilizers.
- Instruct on proper care of lawns, trees, shrubs, flowers, fruits, and vegetables.
- Conduct garden programs for diverse groups within the community. Please visit the Programs section of our website for details on our programs.

The Master Gardeners program is about much more than plants--it's about pride of community, cooperation, friendship, stewardship and learning.
Jeanne Smith, Loudoun County Master Gardener Intern, Class of 2015

Interviews for applicants who have submitted completed applications start in mid-November 2015. The final application deadline for the program is December 7, 2015. Training classes will begin in late January 2016 and continue through early April 2016. The classroom portion of the training is held on Tuesday and Thursday mornings from 9am to 12pm at the Loudoun County Cooperative Extension Office. In addition, several "hands-on" training classes are held off-site. The tuition for the program is $225 paid at the time of acceptance into the program. This fee covers all materials for the training course.

Please come out to our **Open House on October 29, 2015 at 7pm** to talk with other Master Gardeners who have gone through the program. They can provide you with insights about their experience. See you then!

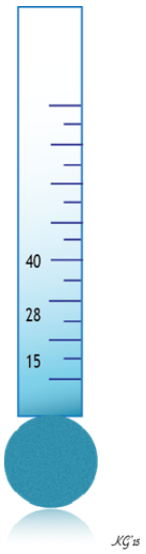
Cynthia Klebonis, **Extension Master Gardener**

Roots & Water: The Keys to Fall Transplanting Success

The fall is a great time to correct landscaping mistakes or take advantage of nursery sales. Soils are warmer in the fall than in the spring, when they still hold the winter's chill, and that makes it easier for roots to reestablish. Key considerations are:

- Transplant at least 6 weeks before the ground freezes, which probably means mid- to late-October in Loudoun. According to Monica Milla, *The Ann Arbor News*, "Roots can grow in soil as cold as 40 degrees, and soil remains warm long after the air temperature drops." (I could find no stats on ground freeze dates.)

- Transplant in the fall your spring and early summer bloomers and deciduous plants or small-leaved evergreens. Plants in dormancy give the roots a chance to focus on reestablishing themselves rather than sustaining top growth. "Think of digging up a plant as if you were on a surgical table having a lung removed," notes Steve Bender in The Daily South. "Would you like to be conscious during the whole thing?" Certainly not.



Winter's bite can certainly challenge a transplant in more ways than root shock. Consider that:

- Root development ceases when soil temperatures drop below 40 degrees
- Desiccation is one of the most dangerous faces of cold weather
- When the ground freezes, underground water turns to ice crystals that roots can't absorb
- Drastic temperature change does more damage than sustained cold

But you have a powerful ally against these winter foes: water.

Water, the Elixir of Transplant Survival

Watering liberally after planting (some suggest you water each day for 20 minutes on every day it doesn't rain) and throughout winter, you can optimize your transplant's ability to access water and survive Loudoun's winter.

Take a cue from the amount of autumn rain, say Diane Relf and Bonnie Appleton, Extension specialists in horticulture, Virginia Cooperative Extension. "If autumn rains have been insufficient, give plants a deep soaking that will supply water to the entire root system before the ground freezes. This practice is especially important for evergreens."

Watering can't stop with the onset of winter. Dry winter conditions can actually be more damaging than the cold itself, according to Julie Day, "Water acts as an insulator. Plant cells that are plump with water will be stronger against cold damage." (She does caution that you water when the temperature is above 40-degrees F and only if there is no snow or ice on the ground.) Without the water, the plant lacks both its vital nourishment and the resilience it brings.

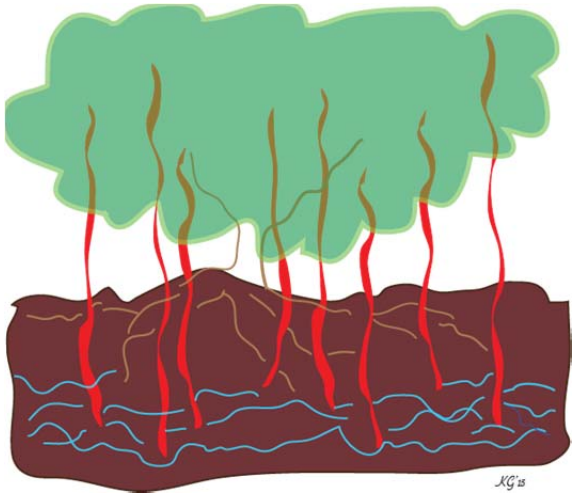
Relf and Appleton agree and point out that "Water loss is greatest during periods of strong winds and during periods of sunny, mild weather. The heat of the sun can cause stomates on the lower sides of the leaves to open, increasing transpiration." That is why you don't transplant large-leaved evergreens, such as rhododendron and camellias, in the fall. They lose too much water through their leaves in the winter, and

roots that are working to reestablish themselves don't have the capacity in the cold to make up for that water loss.

Relf and Appleton suggest watering on warm days in January, February, and March, adding that, the ground may "freeze to a depth beyond the extent of the root system, thereby cutting off the supply of water," when the weather is severely cold.

Water: Nature's Heater

Water has yet another benefit for transplants in the winter: Moist soil will to stay warmer than dry soil! The thermal conductivity of any soil greatly improves if the soil is saturated with water, according to a report by Virginia Tech regarding thermal conductivity and soil. One side effect of watering frozen soil, therefore, is to lessen the effect of freezing cold on roots as well as to make water available to them.



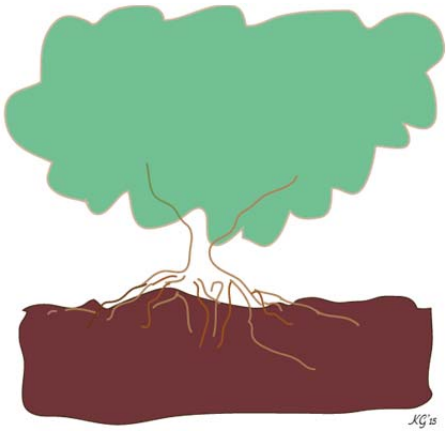
Eric de Long of the Cornell Cooperative Extension, Chemung County explains that "A moist soil can hold four times more heat than a dry soil. It will also conduct heat to the soil surface faster than a dry soil, aiding in frost prevention. In a study performed years ago, the air temperature above a wet soil was 5°F higher than that above a dry soil and the difference was maintained until 6 a.m. the next morning."

The physics of the case are this, he explains: The water helps raise the temperature of both the plant and the air around it to that of the water; moreover, heat is actually released as the water freezes — "80 calories for each gram of water that freezes," he says.

For all of these reasons, be sure you water deeply 48 hours before a frost!

Winter's Hidden Dangers

A transplant's first winter is critical. The benchmark temperature is 28°F. At this point, ice can form inside the plant, which makes the cells burst. As explained by Relf and Appleton, "Ice crystals rupture cell walls; this damage will show up as dead branch tips and branches."



But harm comes more from rapid temperature fluctuation than sustained cold. "Contrary to popular belief, plant damage is not generally caused by an unusually cold winter. Low temperature injury is more often associated with extreme temperature fluctuation than with prolonged cold weather," says The Morton Arboretum, Chicago, IL.

Plants acclimate to freezing temperatures, according to The Morton Arboretum. "Rapid or extensive drops in temperature following mild autumn weather cause injury to woody plants." It adds that "extended periods of mild winter weather can de-acclimate plants, again making them vulnerable to injury from rapid temperature drops."

What to do? It's a little like what you would do for yourself. Cornell's de Long writes that "Covering plants can give you 2 to 5°F protection." That also reduces the extent of temperature change.

So snuggle your transplant up overnight with a blanket or towel or sheet to trap the heat from the soil. You can use burlap or commercially produced frost cloths and even bank plants with leaves in addition to the mulch you may have put down. Cover them all the way to the ground to capture soil heat. Then remove the covering in the morning. (Do not use plastic. It doesn't allow the plant to breathe.) If you are particularly diligent, or have a particularly precious plant you are nurturing, you can drape the covering over a frame that keeps the fabric off the plant.

It is probably not practical to spend the winter dressing and undressing your transplant, so the key problem to watch out for is frost heaving. The roots may not have had a chance to get a grip beyond the root ball and successive freezes and thaws may push the plant out of its hole a bit, exposing the roots to cold and desiccating winds. Do your best to reposition the plant as soon as possible. Mulch and extra banking with leaves, as well as a cover, will help minimize radical temperature changes and keep your transplant's soil a bit warmer, too.

When soil temperatures drop below 15°F, roots can be killed, particularly if they are shallow, such as those of azaleas. "Plants with frozen roots may wilt and decline after growth resumes in the spring," reports The Morton Arboretum. This is where mulch, leaf litter or snow cover provides the critical insulation needed.

Notice the mention of snow! It can be your friend although if there is a lot of it you will want to gently remove it from the branches.

The Outcome: Hale, Hearty & Satisfying!

Follow this advice and you will have done all you can do to ensure that your transplant survives and thrives, emerging strong and vibrant in the spring. Even if the blooms, berries and fruits don't show up the first year, they will be back in force the following year.

Kristina Goodrich, Extension Master Gardener

Photo and graphics also by Kristina

Save the Date for the 2016 Symposium

The Loudoun County Master Gardeners are planning the 2016 Symposium:

Date: March 12, 2016

Place: Ida Lee Recreation Center, Leesburg

Speakers:

- **Rick Darke**, *Looking at the Layers of Living Landscapes and Designing and Maintaining the Living Landscape*
- **Craig LeHoullier**, *Epic Tomatoes*
- **Tim McCoy**, *Native Pollinators*

Tale of a Fall Transplant

I noticed this azalea drooping in drought before the others and surmised it was planted too close to the cherry tree.

There is nothing like the late summer drought to show you which spring and early summer flowering deciduous plants and small-leaved evergreen shrubs need to be transplanted.

Ideally, two to three months before transplanting I would have root pruned by cutting through the soil in a 10-inch diameter around the shrub. The shrub would then have grown more lateral, fibrous roots close to the central stem. The more of these roots, the better it can handle the move. I didn't prune, because I didn't see the problem until the drought.

Some experts say you should trim off ⅓ to ½ of the top growth of the plant you are moving, so that the plant will have less structure to support and can focus on strengthening its root system. Don't do it, says The Morton Arboretum in Chicago, along with other experts. Pruning encourages top growth and what you want is root growth. I have never top pruned before transplanting and I have never had a problem, so I didn't this time.

Roots are precious to transplants, but in dry fall weather it is all too easy to hurt them as you dig. Thoroughly water the root area one to two days before you dig the plant up.

Realizing that I was dealing with two sets of roots — the tree's and the azalea's — I used a hand trowel to dig around the azalea's dripline at first. When I went to remove it, however, I could feel that the azalea roots needed a wider cut.

With the shovel, I cut as large a root ball as I could without overly impinging on the tree's roots. In the end, I had to use my fingers to try to separate and free the two sets of roots. I feel confident about the azalea, but fingers crossed that the wild cherry tree's roots are not overly damaged. I love its blooms in the spring!

Experts warn: Do not shake the soil off the roots! I handled my super large root ball with TLC.

After mounding native soil in the center of the hole, I also pre-watered the hole it was going into so it would have a welcoming base.

This time I succeeded in situating the plant to face properly and at the right height the first time. It sounds easier than it is. You want the plant to sit at the same height it had in its earlier position, but short of using a carpenter's level, you are left with eyeballing it which is less than perfect.

Three Final Factors

The transplanter's goal is to help the roots to strengthen and to grow into the new soil. Both are needed to stabilize the plant and increase water access during often parching winter weather. To achieve this, the experts at the Virginia and Cornell Cooperative Extension Services and The Morton Arboretum in Chicago lay out the following regimen:

Soil: The soil is key: For smaller shrubs, mix organic matter (peat, compost) with the native soil from the new hole you have dug, one part peat moss to two parts native soil, they say. I snuck a bit of top soil in because I didn't have compost and I wanted more in the mix than clay and peat.

I did break up the clumps of clay and removed stones larger than my thumbnail. (Now I can start a pebble garden!) And I both tamped the soil down and then watered it in well to help fill air pockets around the roots that are especially damaging in the winter.

Fertilizer: All the experts agree — no nitrogen fertilizer! It encourages top growth just when you want the plant to invest in root growth and acclimatization. Based on several suggestions, I worked some bone meal into the mounded soil and around the bottom. Bone meal contains phosphate, which helps roots grow and strengthen.

Water: I am following orders and watering every day it doesn't rain for the first week or so, then enough to keep the soil nicely moist. I also plan to do a really deep watering when I hear that a there will be a frost in a few days. Then I will keep the soil moist throughout the fall and winter. That said, avoid making it soggy. Ally's Garden suggests you think of a "well wrung-out sponge". That's helpful.

Protection: Mulch yes, but not now, according to Eric de Long of the Cornell Cooperative Extension, Chemung County. "If you apply winter mulch too early, it will hold warmth in the soil and some plants may break dormancy and start growing again. This wastes precious energy on new growth that will be killed by colder weather."

The Outlook for Survival

I've followed the rules as best I can and I will take care to water and mulch as advised. It is possible the azalea may not flower next spring due to the transplant shock, but now that it doesn't have to compete for water and nutrients with the cherry tree, it should thrive far better than before. Here's hoping!

Kristina Goodrich, Extension Master Gardener

All Photos by Kristina

Thinking about Next Year's Vegetable Garden

Whether you have an existing vegetable bed or beds, or you want to start planting one next spring, you need to start planning now. New or existing, there are some basics in planning for site selection and plot size. You should plan what vegetables you want to plant and know how much sun they require, and position your beds accordingly. Some vegetables, like tender lettuces can tolerate some shade, but need partial sun. An important thing to remember is it is better to be proud of a small garden than frustrated by a big one. Even seasoned gardeners sometimes wonder why they planted 20 tomato plants when 3 or 4 would have sufficed. So plan carefully and start small. Plant only what you know your family will eat.

In planning your garden, you need to *know your soil*. If you have existing beds, test your soil now. Your local Extension office can provide you with a soil test kit that will have directions on how to take a soil test and where to send it. It will come back with recommendations for amendments you may need for your specific plantings. If you are building a new bed this fall, you will need to wait until you have amended soil to do a test. Next fall, after your first season, may be a good time for your first soil test. Every 3 years is the standard for soil testing, unless you are having problems you can't solve.

Crop Rotation is essential for keeping your soil from being depleted of nutrients, becoming susceptible to soil borne diseases and to help reduce insect infestations. There is a 4 step system of rotation that requires little more than a basic understanding of what part of the plant you eat. Divide your garden into 4 simple groups:

1. Plants grown for *leaves or flowers*, such as lettuces, spinach, broccoli, cabbage.
2. Plants grown for *fruit*, as in tomatoes, peppers, squash, potatoes. (Tomatoes and potatoes are in the same family, so they are put together).
3. Plants grown for *roots*, such as carrots, turnips, radishes, onions.
4. *Legumes* that feed the soil (nitrogen fixing) as in beans, peas, certain cover crops.

Even small gardens can be rotated. The four areas can simply be different sections of the planting, although it is harder to keep disease from spreading. Further info on crop rotation can be found at:

- Crop Rotations at downsizer.net
- Crop Rotations in the Vegetable Garden (University of Illinois)
- Planning the Vegetable Garden (pdf 240kb) (University of Tennessee)

If you are starting a new bed, fall is the optimum time to build because of the amount of free organic materials, such as fallen leaves and general yard waste. By letting the garden sit and break down all winter, in spring it will be ready to plant. Fall rains and winter snow will keep the materials moist, which helps them to break down faster.

A new bed can be marked off, hand dug or tilled, but there is an easier way and that is '*lasagna*' gardening. It is a no dig, no till, organic method that results in rich crumbly soil with very little work. The name refers to the method of building the garden, which is adding layers of organic materials that will 'cook down' over time and result in soil that help your plants thrive. It is also known as *sheet composting.*

There is no need to remove sod or weeds or even dig. The first layer can be either corrugated brown cardboard or 3 layers of newspaper laid directly on the grass in the area you have selected. Water this layer to keep it in place and to start the decomposition process.

Materials which are perfect to make the layers include:

- Grass clippings (green-nitrogen)
- Fallen leaves (brown-carbon)
- Fruit and vegetable scraps (green)

- Shredded newspaper (brown)
- Garden trimmings (green)
- Coffee grounds and tea bags (no staples)
- Weeds if they haven't gone to seed

Alternate layers of brown and green. In general, you want your brown layers to be twice as deep as your green layers, but there is no need to be finicky. Just layer browns and greens and you will have a lasagna garden. What you will want at the end of the layering process is a 2 ft. tall layered bed. It will shrink down in a few weeks' time, and by spring you will have a bed ready for planting.

Winter rye and oil seed radish cover crops.

If you have existing beds, remember it is never good to leave the soil bare during the winter. Cover crops are planted to manage soil erosion, soil fertility, soil quality and biodiversity among other reasons. There are summer cover crops, such as buckwheat; cover crops that are winter killed, like oilseed radish; some that fix nitrogen, like field peas or hairy vetch, and some that are just beautiful, like crimson clover. They are all good for the soil with various qualities and can be turned back into the soil in early spring and used as *green manure*. If you can't plant a cover crop in the fall, put a layer of straw or mown leaves down on the soil for protection.

Now, the air is getting cold and daylight is getter shorter. This is the perfect time for seed catalog perusing. If you don't have any catalogs yet, use the internet to find a company you've heard of or just do a 'vegetable seed catalog' search. If you're lucky, you'll find some that are fairly close to your area. That way you know what they sell is good to plant in your area. Once you order a catalog, or something from a catalog, you will start receiving others over time. You can also buy vegetable plants from local nurseries or box stores in the spring. You can spend a lot of time picking out vegetables you want to grow, but remember, start small, keep it simple, grow what you know will be eaten. Seed catalogs, as well as the seed packets they sell, will have descriptions and specifications, so be sure to read them to make sure you have the place, the room and the time for growth.

Another good idea for your fall 'to do' list is to get a notebook or tablet to use as a 'journal' of sorts. Keeping a record of what you plant is important for your rotation plan. Write down when you plant something and make a note of how many days to maturity. You can find details on the seed pack. Record what problems occurred and what solutions you found. And write down what the weather is like when you make notations. Being able to reference something is a good feeling, and you'll be glad you took the time to record it.

Fall can creep up on us quickly and doesn't last all that long. Before you know it, it's a new year and time to order new seeds. So take the time to plan your spring vegetable garden now! Happy gardening!

Normalee Martin Extension Master Gardener

Yes, Environmentalists Can Have Turf Lawns

Lawns have been getting a bad rap these days: as environmental wastelands that can't support our native pollinators and wildlife; as water guzzlers that drain a valuable natural resource; and as contributors to water pollution from runoff of excess fertilizers and pesticides.

Extension Master Gardeners measure and sample the yard of a Loudoun home for the Healthy Virginia Lawns program.

But talk to Michael Goatley, Virginia Tech professor and Virginia Cooperative Extension Turfgrass Specialist, and he'll tell you a different story. According to Goatley, turfgrass is one of the best filtration systems there is. It prevents erosion and helps reduce our carbon footprint by trapping carbon from the atmosphere. Besides, how many other plants can handle dogs and kids and tag football in the backyard?

Lawns are not the problem, says Goatley, people are. By learning proper lawn care techniques, we can protect the environment and still beautify our lawns. In fact, they'll look better than ever.

Eco-sound lawn care can be summed up with these three guidelines:

1. Start by getting a soil test
2. Mow higher (3 to 4 inches for cool-season grass like fescue)
3. Fertilize cool-season grasses in the fall, not the spring

Step One: The Soil Test

Applying fertilizers and pesticides without knowing what your lawn really needs is not only bad for the environment; it's a waste of time and money.

You can pick up a soil sample kit with instructions from the local Virginia Cooperative Extension office and sample the lawn yourself, sending the kit in for evaluation for a very small fee. But then you have to interpret that information in terms of your lawn's measurements.

Better yet, you can have the Master Gardener Healthy Virginia Lawns team do all this for you for no more than the same sampling fee. They will inspect and measure your property, take soil samples, and send them to Virginia Tech for testing. Within a few weeks, you'll get the results back in an easy-to-read report along with a maintenance schedule based on your property's needs and dimensions.

HEALTHY Virginia LAWNS
A program of Virginia Cooperative Extension

Step Two: The Grass Type

By choosing grasses appropriate for this area, you'll use fewer resources and spend less time and money maintaining your yard. Cool season grasses like tall fescue are best here. Kentucky blue, while beautiful, is high maintenance. A good grass mix can give you the best of both worlds, and Virginia Tech has done extensive research on the best grass blends for our region.

Tall Fescue, a cool season grass, is shade and drought tolerant.

Step Three: The Care

Fall is the best time to rejuvenate your lawn. Between mid-August and early October:

- Use a core aerator to reduce compaction and remove thatch, as shown in the pictures to the left.
- Overseed with an appropriate grass blend to thicken the lawn and discourage weeds.
- Fertilize twice at least a month apart, preferably when you aerate and then in early October.
- If you have heavy clay soil (as most of us in this area do) spreading ¼" to ½" of compost on the yard now will do wonders. Compost adds nutrients, encourages healthy soil and helps break up compacted clay. It also helps retain moisture, which means less watering, and it reduces the need for fertilizer.
- Finally, set your mower to the proper height required for your type of grass. That minimizes the stress on the plants caused by mower scalping. For cool season grasses, that means 3 to 4 inches, which may be your mower's highest setting. The warm season grasses such as Bermuda can take a closer clipping of 2 - 3 inches high.
- Don't water just because your turf turns brown. It may help you win your street's blue ribbon for lawn greenness, but it stresses grass to behave out of character, which weakens them. (And it stresses your pocket book, too.) Cool season grasses are supposed to go dormant in the summer whereas hot-season grasses remain brown until the weather heats up. Watering will only stress them.

Aeration

If you follow these guidelines, you will not over fertilize or indulge in a pesticide frenzy, making your lawn a healthy contributor to the environment. For more information, check out these resources:

Resources

- Michael Goatley's article "Fall Lawn Care" on the Virginia Cooperative Extension website, www.ext.vt.edu VCE's video series "A Lawn to Dye for—How to Create a Perfect Lawn."
- To learn more about "Healthy Virginia Lawns" go to the Loudoun County Master Gardener website at http://loudouncountymastergardeners.org/ and select Programs. Or call the Loudoun County Master Gardener help desk at 703-771-5150.
- VCE's Publications and Educational Resources web page, at http://pubs.ext.vt.edu Lawn & Garden resources list and select "Lawns"

Nancy Caldwell, Extension Master Gardener Intern

Photos by Eric Kephart and Kristina Goodrich

Pest Spotlight: Pest Proofing Your Garden for Spring

As summer winds down, so does the abundance our gardens produce. As we begin to welcome in a new season, is it important for us to take the time and reflect on our successes and, well, not so much successes we had in the garden this past year. Taking a detailed look into this now while its fresh on our minds will help us gear up for an exciting successful season in 2016.

Green Lacewing
Photo by Charlie Sharp

Just as we take care every year to think about winterizing our plants, we should be thinking about how best to prevent pest issues in the future. By following the simple steps below, you can be assured to at least have a game plan going into 2016 to hopefully be victorious in the battle of us vs pests.

Plan, Plan, Plan!

Gardeners are probably more likely than most to spend the cold winter months dreaming of what to plant once the ground unfreezes. Whether it's by designing beds or pouring over seed catalogs, we all get excited about the potential of the new season. Gardeners can also be using this time to not only figure out what and where to plant, but how to lessen the pressure from pests these plants will experience.

- Once you know what you are planting, look into common pest and disease issues. Knowing ahead of time helps you plan what kind of control and options you have.
- Look into suggestions and recommendations made and see if there is anything you can do BEFORE the season even starts, for example using row covers, planting early, etc.
- Have a "game plan" set. Meaning, have all the tools, controls, and ideas of how you want to manage your pest situation set.
- Did you keep a garden journal or log last year? Consult it, see what issues you had last year, and make adjustments accordingly.
- Don't have a garden journal or log? Start one! Think of it as a great excuse to buy a fun new notebook and use it throughout the season to log important information such as planting dates, pest issues, etc.

Clean Up Your Space — But Not Too Much!

It is always recommended that you pull out and remove old plant material before winter. Leaving behind dead roots, stems, and foliage can continually act as viable nutrient sources for pests and diseases that may be harboring in the soil. That being said, be sure to save your brassicas (kale, Brussels sprouts, broccoli, radish, etc.) as they release cyanide compounds that kill wireworms, certain nematodes, and grubs. Also, do keep dead stalks of flowers as a food supply for birds and a bit of ground cover to encourage beneficial insects, many of which are natural enemies to many garden pests.

Give Your Soil a Health Checkup

Since activity is slowing down, now is a great time to get your soil tested to make sure you are on track with what nutrient composition you want/need for the upcoming spring. Some nutrients, like calcium, can be beneficial if added in an area where tomatoes are to be planted as it can help reduce bottom rot and other disease issues. It is also suggested to spread a healthy layer of compost as it helps maintain the temperature, which keeps microbes in the soil happy which in turn will continue to release nutrients and further improve soil quality. Remember, healthier plants are going to be less attractive to pests.

Mulch
Photo by DvortyGirl, Wikicommons

Put On a Winter Coat

Mulch is a great tool for overwintering gardens. Like the compost discussed earlier, it helps maintain the temperature of the soil. It also makes it much harder for winter weeds to move in, which will reduce the amount of work you have going into spring not to mention provide less nourishment/harborage for pests. Select what mulch you want to use based on what you plan on planting, how wet your region is, and what is available.

Extra Blankets Are a Good Idea, Too

Floating row covers can be a great asset once early spring rolls around for added pest protection. The sheets can be draped right over the beds and help protect from not only pests but also unexpected cold snaps that we inevitably get. It is also a sneaky way to plant crops earlier in the season, before a targeted pest species is out and about, which may be a great way to enhance the productivity of the plant. When selecting your covers, look for those that allow for rain and other selected moisture to get in. You can even use an old sheet or blanket in some cases.

Row cover
Photo by Normalee Martin

Amanda Rose Newton, BCE, Extension Master Gardener and Entomologist

Goldenrods, Summer's Final Show

No matter where you look — woods, swamp, stream valley, rocky ravine, prairie — there's a goldenrod exactly suited for that environment. Indeed, in the wild goldenrod can be found virtually everyplace — abandoned fields, ditches and roads, river and creek banks, flood plains, open woodlands, wet soils, dry soils, sand and clay soils. *Solidago,* a member of the Asteraceae (aster) family, is indeed an adaptable genus.

***S. juncea* at the perfect stage for cutting.**
Photo by Fritz Flohr Reynolds
https://commons.wikimedia.org

The name *Solidago* comes from Latin and means "to make whole", a direct reference to its medicinal use by Native Americans, Asians, and early American settlers. It is still used today in some folk medicines. At various times it has been used (sometimes effectively, sometimes not) to sooth sore throats, to heal skin wounds, and in cancer treatments. There actually is some evidence that it has anti-inflammatory and diuretic properties *and* possibly has other medicinal uses as well. For more information about its possible medicinal use, the Milton S. Hersey Medical Center of Penn State University's website is very informative. See http://pennstatehershey.adam.com/content.aspx?productId=107&pid=33&gid=000251

Over the years goldenrod has been blamed for causing seasonal allergies in mid-to-late summer and early fall. Nothing could be further from the truth. Goldenrod is an innocent bystander; the *real* culprit is ragweed (*Ambrosia* spp.), which frequently is found growing alongside goldenrod. Because goldenrod is so obvious, people immediately assume the source of their discomfort is that lovely yellow spray of flowers in front of them; they totally overlook the nondescript ragweed lurking nearby — the *real* culprit! So rest assured, you can grow goldenrod in your garden without discomfort!

There are roughly 100-120 species in the genus, mostly growing in North America (about 95), although a few are native to Central America, South America, and Asia. Of these, 38 are native to Virginia and 20 native to Northern Virginia. Little appreciated in the United States, our native goldenrods had to make the trip to England before their true ornamental value was recognized by dedicated gardeners, and hybridizers there turned their attention to this overlooked flower. Today goldenrod has also caught the attention of hybridizers in the United States, and there are now a few hybrids from both countries available in catalogs and nurseries. Some catalogs and nurseries also carry various species.

Goldenrod is a hardy, fibrous-rooted perennial, easy to grow, undemanding in its care and culture, and totally at home in the garden, where it thrives with minimal care. While the cultivars usually are sturdy, dependable, well-behaved plants to have in the garden, only some of the species are well adapted to our gardens for one major reason: goldenrods grow either as clumpers or from fast-creeping rhizomes. The clumpers, which grow from crowns, are good garden neighbors; the plants with creeping rhizomes, however, can quickly crowd out other plants in the perennial bed. *S. canadensis* (Canada goldenrod), although very beautiful, is one of the most aggressive and should only be grown in a wild meadow where it can spread with abandon. You'll want to choose your species carefully, keeping in mind both their growth habit and the area where they will be growing when you make your selections.

***Solidago* 'Fireworks' with *Artemisia* 'Powis Castle' and asters.**
Photo courtesy of Bradford Leinberger Photography
www.pbase.com/blphotography/guestbook

The small daisy-like flowers are in clusters on stems which take one of four forms: club-like, plume, wand-like, and elm-branched. A fifth form, flat topped, has been reclassified as *Euthamia*, although that new name has yet to become widely used outside of botanical circles. None of the *Euthamia* genus are native to Virginia.

There is a wide range of sizes in the *Solidago* genus, ranging from 12 inches to a massive 72 inches tall, with most growing 24-48 inches tall. Widths also vary, from very narrow to up to 48 inches across.

Depending on the species or cultivar, goldenrods fit easily in the fall perennial garden or border, wild garden, native planting, meadow, butterfly and bee garden, rock garden, rain garden, and open woodland garden. One small hybrid, 'Dansolitlem', sold as 'Little Lemon', can even be grown in a container.

Goldenrod is splendid for cutting at almost any stage of development but particularly just after the yellow florets open. It can be used in large floral arrangements or pieces can be broken off and used in miniature arrangements. It dries exceedingly well, frequently drying right in the vase where it was arranged. If you cut it specifically for preservation, you can simply bunch it and hang the bunches in a warm, dark, dry place for a week or two until dry.

Monarch butterfly on goldenrod. **Photo by Susi von Oettingen, U.S. Fish and Wildlife Service**

As to wildlife — deer and rabbits don't like goldenrod, but goldfinches do. Goldenrods are also favorites of butterflies (including monarchs), several important pollinator bees, and many other insects, such as beneficial wasps, flies, and beetles. As a late-blooming pollinator plant, they are particularly important to the insects and birds which feed late in the season and depend upon them for food before winter sets in or they join the migration southward. For this reason alone goldenrods deserve a place in our gardens. Fortunately, in doing a good thing for bees and butterflies, we're also doing adding fall color to our own gardens!

Depending on the species or the cultivar's genetic inheritance, plants can start blooming in July, with the show continuing through September, October, and even early November. This late in the season, its fresh flowers are particular welcome in the perennial garden as it winds down the annual show and other, earlier plants prepare for winter. Its golden flowers are stunning against a dark background, and it mixes well with asters, another late-bloomer. It's striking with *Callicarpa* (beautyberry) species and cultivars which also are attractive to birds.

Goldenrod hybridizes easily in the wild and sometimes it is difficult to identify a wild-growing species. If you collect seeds to grow from the wild, the resulting plants may or may not have the same form and growth habit as the parent plant. And, since you don't know the plant's genetic inheritance, you have no way of knowing if you're bringing home seeds for a clumper or a traveler. Still, if you want to take a chance with wildlings, the resulting plants probably will be lovely. Just keep an eye on them and be prepared to take action if they start to spread out of bounds. Seeds are collected in the fall, moist stratified in the refrigerator at 40 degrees for 90 days, and then will germinate readily two-three weeks after planting. Goldenrods are easily rooted from 3-4 inch long tip cuttings taken in late spring or early summer and they are easily divided in early spring before growth begins.

Bees and goldenrod — a happy combination. Photo by Ted Bobosh, https://commons.wikimedia.org

Most goldenrods prefer a sunny site in average garden soil which ranges from moist to dry; most will grow well, in clay soil although there are a few exceptions. It is better to avoid overly rich soil which can encourage excessive spreading and floppiness. Some, such as *S. rugosa,* and

S. rugosa 'Fireworks', prefer damp-to-wet areas. A few, such as *S. nemoralis* prefer dry rocky areas with poor soil. And others, such as *S. flexicaulis*, prefer part shade.

Goldenrod is easy to maintain. Rust occasionally can be a problem on some species and cultivars, as can powdery mildew and leaf spot. There are no serious insect pests of goldenrod. Once they are established, most goldenrods are drought tolerant. They don't require fertilizing and, in fact, many will fail in rich soil. Generally, unless you have chosen a traveler, goldenrods are low maintenance plants in the garden. However if you've chosen a species or cultivar with a tendency to spread rapidly, you will have to plant it within a root barrier, divide it every two to three years, or plant it in a place where it can spread without crowding out other plants, such as in a wild meadow. Some goldenrods have a tendency to reseed, but this can be prevented by deadheading, and seedlings can be pulled with little difficulty should they appear.

By carefully selecting your plants you can have goldenrod in bloom from July into November. The parade starts off in July with 'Golden Fleece', 'Golden Baby', *S. flexicaulis*, and *S. juncea* and ends in November with *S. nemoralis* in a meadow, cottage or wild garden where it can spread with abandon.

***Solidago* 'Little Lemon'.**
Photo courtesy of North Creek Nurseries
www.northcreeknurseries.com

Some recommended and easy to find cultivars are:

- *S. rugosa* 'Fireworks' — a golden-flowered early fall (September and October) bloomer, 24-48 inches tall and wide, one of Chicago Botanical Garden's 'Best Plants'.
- *S. sphacelata* 'Golden Fleece' — a dwarf cultivar with golden flowers, growing only 15-18 inches tall and 15 inches wide. It begins blooming in July and continues into September. One of Chicago Botanical Garden's 'Best Plants'.
- *S. flexicaulis* 'Variegata' — a clump forming goldenrod with gold-splashed leaves. This Virginia native selection grows 18-30 inches tall, begins blooming in July and continues through August.
- *S.* x 'Golden Baby' ('Goldkind') — a clump forming hybrid with bright yellow flowers. Its plume-like panicles start blooming in mid-summer (July) and continue through September.
- *S.* x 'Dansolitlem' (sold as 'Little Lemon') — another dwarf cultivar and well-behaved clumper, only 8-10 inches tall with light yellow flowers, blooming in August and September. If cut back after the first flush of bloom, it will rebloom later. (U.S. Plant Patent PP17,297)
- *S. shortii* 'Solar Cascade' — a well-behaved clumper, at 24-36 inches tall and 12-24 inches wide, intermediate in size between 'Golden Fleece' and 'Fireworks'. It blooms in August and September.

If you want to grow the species, some of the better ones which are Virginia natives and are commercially available are:

- *S. caesia* (wreath or blue-stemmed goldenrod) — grows 12-36 inches tall and wide and has loose clusters of flowers along its bluish stems. This Virginia native tolerates poor, dry soil and grows well in both full sun and part shade, which it prefers in very hot summers. It starts blooming in August. Naturally found in woodlands and thickets.
- *S. faucibus* (gorge goldenrod) — a rare Virginia native which prefers part shade. Its natural habitat is rocky outcrops and slopes near streams; if you have a site that fits this description, it will be at home there. It grows 24-36 inches tall and 36 inches wide. It may be a spreader.
- *S. flexicaulis* (broad-leaved goldenrod, zig-zag goldenrod) — an early (July) bloomer ranges from 12-36 inches tall and likes some shade. Naturally found in woodlands and rich thickets.
- *S. juncea* (early goldenrod) — one of the earliest to bloom, with flowering beginning in July. It grows 24-48 inches tall and wide and tolerates poor, dry soils. In nature grows in dry soil along roads, on rocky banks, and in open woods. It may be a spreader.

- *S. nemoralis* (old field goldenrod, Gray's goldenrod) — one of the last of the goldenrods in bloom, flowering into November. It grows 24-36 inches tall. In the wild it is found in dry or sandy soils, old pastures, gravely spots, and dry open woods. A serious spreader, both by traveling rhizomes and self-seeding, this one is not for the formal garden but is useful in a dry, rocky, poor spot where nothing else will grow. In rich soil it is short lived.
- *S. odora* (sweet goldenrod) — a 24-60 inches tall, well-behaved clumper with anise-scented foliage sometimes used medicinally and in teas. During the American Revolution the leaves were used to make "Liberty Tea" in place of imported tea from England. Sometimes grown in herb gardens but also at home in perennial gardens if the soil isn't rich. In the wild it is found in dry fields and open woods.
- *S. rugosa* (rough goldenrod) — 48-60 inches tall, one of the parents of 'Fireworks' (above), a particularly nice hybrid. Useful for wet to moist spots only and can spread aggressively if happy. Naturally grows in thickets, along roads, on embankments, in open fields and along wood edges.
- *R. speciosa* (showy goldenrod) — one of the showiest goldenrods, growing 36-60 inches tall. Naturally found in thickets, in woodland clearings, and in fields.
- *S. bicolor* (white goldenrod, silverrod) — often overlooked in favor of its more conspicuous cousins, white goldenrod has white ray flowers with yellow stamens which give the flowers a pale yellow glow. It's a clumper and occasionally can be found for sale at specialty nurseries.

Solidago speciosa. Photo by Sally and Andy Wasowski www.wildflower.org

These and many other goldenrods are discussed in detail at the Missouri Botanical Garden Plant Finder website at http://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx, an extremely valuable resource for gardeners.

Goldenrod may be the last flower to bloom in the fall, but it sends us into winter with a golden finale, a last minute meal for whatever wildlife is still hanging around the garden when there's a chill in the air, and an armful of dried flowers to enjoy throughout the winter.

Lina B. Burton, Extension Master Gardener

***Solidago* species**. Photo by Liz West. https://commons.wikimedia.org

Paradox of the "Mysterious" Persimmon

Diospyros virginiana. A native woodland fruit tree with yellow-orange or darker red-orange edible fruit; native to the North American northeast all the way southeast to Florida, then westwards through Nebraska down to Texas, zones 4-9. Yet show a random person in our area a persimmon and it most likely will not be recognized. It might as well be an exotic fruit from far away. Little known and barely enjoyed as a fruit where it is native, what is the deal with what should be a desirable persimmon?

***D. virginiana,* American/Common Persimmon**
Photo by Jim Carden

In locales where there are native persimmon trees, people seem to have just ignored and left its fruits to wildlife, or to determined foragers, which in the past were Native Americans who enjoyed using the pulp for bread and puddings. And the trees, highly decorative as they are, especially in the fall, have not been among must-haves for urban/suburban home gardens. Fortunately, there is now a native plant movement that could change that limited visibility of persimmon trees and use of their fruits.

If someone recognizes persimmon as a fruit worthy of a few dollars a pound, that person may be familiar with the Asian version, *Diospyros kaki* (zones 7-10). That is the kind sold in some groceries, in the uncommon-fruits corner, or in more abundance in supermarkets that cater to Asian shoppers. It is in fact only the Asian kind that can be purchased commercially. And so the persimmon, even if there is a native version, remains an unfamiliar or "exotic" fruit to the American palate, its tree seldom planted in the average home orchard.

So, here is a crash course on the persimmon, both as an ornamental tree that is valuable to wildlife, and as a fruit more people should add to their fruit tray. There is a good explanation to the paradox of the persimmon, or at least a theory: Astringency. Pucker quality. Like chewing a dollop of school glue (my own description). Why take the trouble when there are all these other wonderful fruits to be had? Thus, note the following if you decide to give the fruit a try.

There are two types of Persimmon: **Astringent** and **Non-astringent**. The native persimmon happens to be of the astringent type, which requires much waiting to be enjoyed (November/December). . . but worth it because it is more delicious than the non-astringent type. Smaller than the Asian kind, the native version pictured above looks very much ready-to-eat. It is very ripe, soft to almost overripe/mushy whose pulp would have a jelly-like texture. Do not try to eat while it is still hard—the orange color can be deceiving. The surprise will turn you off.

On the right is a photo of the **astringent** Asian type. This one is the variety 'Saijo', Japanese for "the very best one." With the genus *Diospyros* meaning "fruit of the gods" or "divine food," one should pay attention. The Asian tree is self-fertile, and its fruits have few/no seeds unlike the native persimmon that requires two trees to be planted, and have more seeds. This cultivated kind is bigger than the native. The commonly available commercial variety, if you find persimmons in groceries, is most likely 'Hachiya'.

Photos by Maria Daniels

What certainly will make the difference for those curious to try the astringent kind, native or Asian, is biting into one when it is truly ready. The photo on the left is a guide. The flesh should be very soft and jelly-like. Bite into one not ready, well, the theory is that the surprisingly unpleasant pucker effect will quickly turn off a possible fan of the fruit who may never bother to try it again. Fortunately for wildlife, they have a sense for when the gems are ready.

Yet remember, the persimmon tree itself is another matter. In the fall, its glossy green leaves turn into vibrant red, orange, yellow combinations, and the fruits persist hanging in the trees for a long time like little fall lanterns. If not for the fruit, there is still the beautiful tree with a very interesting mature bark to please the gardener.

Photo by Carol Ivory

Photos by Maria Daniels

Next, is the **non-astringent** Asian persimmon. The most common commercially available as a fruit and also as a young tree to grow is 'Fuyu'. This kind provides an easier way to try the persimmon fruit and all it offers — at the very least Vitamins A, C, E, B complex, potassium, antioxidants, and dietary fiber. The cut piece shows this non-astringent kind may be eaten at the still hard or firm stage, much like peaches. No need to wait until it is overripe to enjoy it as a nutritious and delicious treat.

To the curious beginner, seek out the non-astringent Asian kind (looks like a squat tomato) in the produce aisles of your supermarket and see if you like it. It can be eaten while still crunchy like an apple or softened. Then next try the astringent kind and let it really, really ripen to a jelly-like consistency to eat it. If you like that, you can tell if you are ready to give the native kind, also astringent, a try. You may not be able to buy it, but should you encounter it in the wild right there for the picking (no constraints, such as possible spraying of the habitat, safety, tree ownership, or unsure if it is indeed native persimmon), please do not hesitate to try it. The 'Fuyu' ripen between October and December.

That general indifference of the urban/suburbanite should start to change with the increasingly widespread interest in what natives have to offer the home gardener. *Diospyros virginiana* now even has named cultivars (or nativars) like the self-fertile 'Meader' that may be purchased as a young tree. Sporadically available, perhaps, but becoming available.

There is much more to learn about persimmons, the trees, and the fruits that are actually berries, and the fact that they have a pedigree as a native beneficial to wildlife and our woodlands. A good start is to open up to this oddly considered "exotic" fruit-bearing decorative tree and consider planting it on our properties large or small.

Here are a few additional articles:

http://www.mast-producing-trees.org/2009/11/the-american-persimmon/

http://www.dof.virginia.gov/print/edu/Common-Native-Trees.pdf (page 97)

http://www.rodalesorganiclife.com/garden/all-american-tree-fruits

http://www.clemson.edu/extension/hgic/plants/vegetables/tree_fruits_nuts/hgic1357.html

http://www.indyweek.com/indyweek/native-persimmons-are-overabundant-and-underappreciated/Content?oid=1213280

Maria Daniels, Extension Master Gardener

The Trees in Leesburg's Union Cemetery

In *The Remarkable Trees of Virginia* authors Nancy Ross Hugo and Jeff Kirwan write "Cemeteries protect more than the souls of the departed; they protect trees. …big old trees are to graveyards as unmown ditches are to wildflowers: when you find one you usually find the other." This holds true for the historic 164 year old Union Cemetery in Leesburg.

This 25.85 acre cemetery contains many trees; four notable ones are highlighted in this article. Three of these trees form a loose circle around the chapel that is within the cemetery and visible from King Street. Off the front western corner of the chapel is a huge, well-shaped **Sugar Maple** (*Acer saccharum*) that appears to be the largest tree in the cemetery. Soon that beautiful, full canopy will be a brilliant wash of gold as autumn settles in. Most sugar maples attain a height of 50-70 feet; our specimen is estimated at 105 feet. Its canopy spread is 99 feet in diameter, and the trunk's diameter is 57.3 inches. Sugar maples are famous for their maple syrup and maple candy. To make 1 gallon of syrup, it takes about 40 gallons of sap.

Off the east rear corner of the chapel is a beautiful **Sycamore** (*Platanus occidentalis*), sometimes referred to as a buttonwood or American planetree. It is healthy and vigorous with a thick and beautiful canopy and while most sycamores top out between 80 and 100 feet, this tree has a height of approximately 105 feet, while the trunk's diameter measures 39 inches. This is one tree that can be identified from a distance by its mottled bark of brown, green, tan and white that is often referred to as camouflage. Its leaves are usually 5 to 8 inches in length, have 3 to 5 major lobes and wavy, course-toothed margins. Its fruit is 1-inch-diameter balls packed with winged half-inch seeds that mature in late fall and blow about in the winter winds. This fast-growing tree has the largest trunk diameter of any North American hardwood. By the time sycamores reach the age of 300 years, they are usually completely hollowed out while still very healthy. Ancient hollow sycamores provided shelter for early settlers and their livestock.

Directly behind the chapel midway to the fence is a graceful, artfully spreading **Chinese Chestnut** (*Castanea mollissima*). A crop of the green fruit clusters hang heavy on the tree. These eatable nuts are covered with a husk of dense slender spines. The *Chinese chestnut*, a member of the beech family, is a tough tree that thrives in hot dry locations and likes acidic soil. The approaching fall will see this tree turn yellow to bronze in color. The average height of the Chinese variety is 60 feet, while this tree has reached approximately 50 feet. The lustrous dark green leaves can be 6 to 9 inches in length with forward-turned teeth and veins parallel from a midrib. The messy bloom, called a catkin, is fuzzy, up to 7 inches long, and has a strong musty smell. It is an allergy-prone person's worst nightmare.

Over the crest, at the back of the cemetery very close to Old Waterford Road is our fourth notable tree. This tree, a **Slippery Elm** (*Ulmus rubra*), is striking not because of a lovely stature or elegant canopy but because of its gnarled deformity caused by burls—tumorous looking growths, covering approximately 10 feet of the lower trunk. Joe Rankin of Northern Woodlands explains that a burl (or burr)—a rounded outgrowth on a tree — is a condition whereby the tree's grain has grown in a deformed manner into small knots from dormant buds. Think of the grain of a regular tree as yarn and the burl as a ball of yarn all twisted. The tree's cells go haywire and tie themselves into knots as the growth hormones get disrupted and its metabolism is high-jacked by a virus, fungus or bacterium. Crown gall bacterium is responsible for many burls. The bacterium carries a little extra DNA called plasmid that infiltrates the tree's genetics, prompting it to make special amino acids and growth regulators to produce burls. Burls are highly prized by wood carvers and furniture makers. Across the country and the world, burl poachers destroy or damage many trees, even ones in protected areas, by cutting off and stealing the burls. The underground burl market can be very profitable.

Trees are living things and like us, they too have stories to tell. If you just want to enjoy a leisurely walk, try strolling through Union Cemetery and check out the silent sentries standing guard there. You won't be disappointed.

Mame Ward and Penny Clark, Extension Master Gardeners, Tree Stewards
All photos also by Mame and Penny

There is a New Shrub in Town: The Tea Plant

(Camellia sinensis var. sinensis)

From Seed to Plant, A Journey: Year One

A cup of tea has many meanings. For some, it is a morning pick me up, others like to sip it on a cold day, and for others it is a medicinal healing drink. Not many have contemplated the journey of how the green, brown, or black leaves get to your kitchen table.

This past winter I was given a treasure of hundreds of tea seeds, origin: Korea. The seeds were in a cardboard box and it was the middle of February. What to do with them? The adventure began.

Growing a tea plant in Loudoun County seemed overwhelming. There were not many resources for tea growers in the northern parts of the US. Most of the growers are located in Florida, Mississippi, and the Carolinas. Reaching out to these growers and researching the internet helped me to get a sense that it may not be impossible to cultivate "Virginia Home Grown Tea".

This article will describe what has happen this first year.

Seeds

The seeds received were in a raw form seed pod, approximately 2-3 in a pod. In order to determine which seeds would be most viable for planting, I performed a sink test. (I placed all seeds in a gallon pail of water and waited one day to see which seeds floated and which sank.) The floaters were then separated from the mix and I concentrated on planting the sinkers.

TIP: Perform the test, but it doesn't always predict bad results. When I ran out of room in my small greenhouse, I planted the floaters directly into the garden and had about 40% of the seeds germinate from that stock.

Soil

Tea plants thrive at pH 4.5 to 5.5. I had my soil tested by Virginia Tech. The pH in my garden needs to be a bit lower and I plan to add amendments in spring. Tea plants do not like "wet feet", so free draining soil is important. I contacted a local nursery and obtained a soil mixture recommended as a good seed starter. I planted all the sinkers in the starter mix in the greenhouse environment. The floaters were planted directly in my garden.

Planters

Since I had so many seeds, I used various planters. The many containers were about two inches wide but the height varied. My various readings from tea planting sites indicated that tea seeds have a long tap root and that success in getting a healthy plant was in letting the root have as much room as possible.

Shorter pots

TIP: After germination and leaf growth to four, I transplanted the plants out of the greenhouse into larger pots. I found that the seeds that were in the tall pots originally had long healthy roots while the shorter pots grew a plant with curled roots even at the early stage of four leaves. I recommend that seeds be started in tall planters for best results.

Temperature

The tea plant does best in warm weather from 55F to 90F. As I had the seeds planted in my small greenhouse since February, I was concerned in May that I would not get one seed to grow. To my surprise, in mid-June, I started to see cracks in the seeds and little green leaves emerge. The germination did not start until night time temperatures were over 55F. Germination for all the seeds took over a month.

Tall container

Environment

Tea plants like muted shade in summer and protection from the cold in winter. The two garden areas used have tree cover during part of the day. In addition, I used newspaper with pine mulch cover for weed suppression and water retention. I have used soaking hoses to water in the garden and occasionally in hot weather mist them with water. The pine mulch hopefully will help keep the soil pH lower.

Newspaper and pine mulch cover

This winter I am planning to cover the root areas with additional pine mulch and straw. This will hopefully insulate and protect them from a hard frost. I plan to monitor the garden during the winter and assess any winter damage. My hope is that the survivors will be the right choice to use as cuttings for the next generation.

Summary

Tea plants are slow starters and take up to three years to begin to offer leaves for picking when grown from seed. They are an evergreen plant and flower in the fall. Tea plants can grow up to 10 feet and live over a hundred years, so it is important to pick the right place to plant in the garden.

Tea can be cultivated indoors also. Plants can be kept in pots outside during spring and summer and brought indoors to overwinter to protect them from a hard frost. Harvesting young leaves will keep the plant small and container grown.

Garden grown tea plants.

Container grown tea plants.

Whatever you choose, garden or container, the tea plant is an interesting newcomer to Loudoun County. It may take a few years but we may soon be saying that we are sipping "Virginia Home Grown Tea, Loudoun Grown."

Nancy Feeney, Extension Master Gardener

Contain Your Garden!

First of a series of articles about gardening with big containers

My vegetable garden has twelve raised beds that are eight feet long, three feet wide and two feet high, with a framed edge suitable for sitting or leaning on to work in the garden, so much easier on the back. Although I called it a raised bed garden, it is more like container gardening. These containers could be spaced to be wheelchair accessible.

Three of the Big Containers **Photo by Eileen Swicker**

I can regulate the quality of the soil based on what I add to it, such as sand, composted manure, leaf mulch, etc. This year we added a new load of "dirt", and it has a lot of clumps of uncomposted manure that will break down over the winter. The beds pack down over the winter, so it is good to add material in the spring, such as leaf mulch. It improves the soil as well as deters weeds. When I pull up the last of the tomatoes, peppers and beans, I am planning to plant a cover crop of buckwheat. I learned about cover crops at the Master Gardener training this year, and am intrigued by the idea of the plant being killed off by the frost before it has time to set seeds. It can be turned over into the soil as an enrichment in the spring.

In this series of articles, I'll cover the decisions involved in adopting a raised bed plan, including factors affecting construction cost, size, available garden space, preferred plantings and the need for and type of irrigation. The winter article will break down the actual construction as well as decisions on what plants to grow. The spring article will take up the subject of timing the plantings, companion planting, using the irrigation and protection from predators. The summer article will anticipate the end of the warm-weather growing season, preparing for cool-weather crops and getting the beds and irrigation ready for winter.

Our original garden consisted of several 4 foot by 4 foot raised beds, framed with railroad ties, in an area roughly 25 feet by 25 feet in full sun (see second photo). The garden soil was compacted from years of use without amendment and from walking in the beds to reach plants in the middle of the bed. The original gravel paths were covered in weeds.

The idea for the new raised beds came from an article in a 2010 Sunset Magazine on container gardening. Using the existing space of the raised bed garden, I calculated we could manage twelve beds with three foot paths between the beds. Each bed would be three feet wide, so that all of the planting area is easily accessible.

Original Raised Bed Garden **Photo by Eileen Swicker**

The material used to construct the beds will have a great impact on the cost of the job. Among the possibilities is the stone look of cinder block or faux stone, either as stackable pavers or as panels to adhere to a cinder block base. The look is durable, old world and once in place, it needs little maintenance. Wood is another choice, such as cedar, which should last almost forever and ages to a silver grey patina. Pressure treated wood is a less expensive wood alternative. Wood is definitely less expensive than the stone look, and stained pressure treated boards need restaining just every five years or so.

Before construction begins, the gardener should think about the typical preferred plantings. For my family, it is spring and summer vegetables, as well as annual and perennial herbs and perennial plants like rhubarb, asparagus, blueberries and gooseberries. The initial question should be "Will it fit in the raised bed?" I ruled out the fruit bushes. I also ruled out corn and rhubarb, and should have ruled out summer squash, okra and tomatillo. Big, spreading plants will crowd out their neighbors. Perennial herbs and plants like asparagus and strawberries will occupy the same space for several years to come, preventing those beds from serving as a new growing area for plants that should be rotated every year, like tomatoes.

Irrigation should be included in the initial raised bed plan. Soaker hoses are recognized as the most efficient way to water, but are difficult to incorporate into tall raised beds without planning the piping, connection to the sections of soaker hose and a central control. We went for a permanently-installed, oscillating, overhead sprinkler connected underground to a water supply at the house, with a programmable timer installed. The timer allows us to determine the days of the week, time of day and duration of watering. Winter preparation includes blowing out the sprinkler, like any other irrigation system.

Stay tuned for construction details in the winter edition and to consider whether big containers have a place in your garden. Remember to check with your HOA before spending a lot of time planning to make sure you are allowed to build these containers!

Eileen Swicker, Extension Master Gardener

Image of fall **Photo by Edye Clark**

Propagating Native Plants from Seed

In the fall all those flowers we have enjoyed in the summer produce seed, providing an opportunity for a new gardening adventure. Growing native plants from seed can be challenging, satisfying and fun. It also requires research and patience. But the whole adventure leads to a deeper appreciation of nature.

The seeds of most plants in temperate zones have developed a mechanism that prevents them from germinating until conditions are favorable for growth. In our area this means they will not germinate in the fall when the young plants will be killed off by the freezing conditions of winter. This is a survival mechanism.

Seeds must go through a process before they will germinate. In the wild nature takes care of this. Some seeds are held in the flower head until they dry out and fall to earth. There they experience winter temperatures and then germinate in the spring when the soil reaches 70 degrees. Some seeds need multiple cycles of warm and cold and may take two to three years to germinate. Some seeds need to be eaten and pass through the digestive tract of an animal before they germinate. Some seeds are gathered by ants before they dry out and are carried into underground ant nests where they germinate without ever drying out.

Before you contemplate growing any native plant from seed, do a little research and learn how the seed must be handled when it's gathered and treated to achieve germination. These different treatment protocols are commonly referred to as the germination code. I use 2 main resources to learn about how to handle seeds. Prairie Moon Nursery website and seed catalog contain a germination code for each type of seed that they sell. My second resource is a wonderful book by William Cullina, *Growing and Propagating Wildflowers of the United States and Canada*. Cullina is a practitioner who speaks from years of experience and a deep knowledge of plants. He provides information on gathering and handling the seed that makes all the difference.

Photo by Kristi
Jack in the pulpit berries

For a few years I tried to grow Virginia Bluebells, *Mertensia virginica*. I purchased the seed online. They arrived in a little paper envelope, dry and hard, I planted them following the germination code and nothing happened. I did know that bluebell seeds were dispersed by ants, but it was Cullina who pointed out that the woodland seeds dispersed by ants and some others with fleshy fruits cannot tolerate being dried out. These need to be harvested as soon as they ripen and directly planted or stored in damp vermiculite. Bloodroot, twinleaf and wild ginger also fall into the category of ant-dispersed seed. Jack in the pulpit and spicebush, *Lindera benzoin*, have seeds embedded in fleshy fruits that will germinate best if kept moist. Ripe spicebush berries should be plunged directly into the soil in late summer or early fall while Jack in the pulpit seeds should have the flesh washed off before planting. A chemical in the flesh can inhibit germination. The berries also contain a skin irritant so protect your skin with rubber gloves when cleaning the seeds.

Many directions for propagation assume that you will store the seed in your refrigerator for the required 30 or 60 days. Seeds that require moist storage must be mixed with moistened sand, vermiculite or some other medium before being labelled and placed in a plastic baggie in the refrigerator. The moisture level must be just right or the seeds will mold if too wet or dry out if not wet enough. Seeds must be monitored "periodically" for proper moisture level and any that begin to germinate in the bag must be planted immediately in a flat under grow lights.

If this sounds like an unreasonable amount of work, don't stop reading — **there's an easier way!** Do it the

natural way — outside — just take some reasonable steps to protect your seeds. Seeds can be washed away by hard rains, eaten by birds, squirrels and rodents or get too wet and rot. Seedlings that sprout in the wild can literally get lost in the weeds and destroyed in countless ways. If you want to increase the survival rate of your seeds and seedlings, know where they are, and know what they are when they come up, you will want to devise some safe guards. Large scale growers use cold frames and greenhouses but backyard hobbyists can still have fun with seeds.

There are about 20 holes in the bottom of this jug. Photo by C. Ivory

My favorite "greenhouse" is a plastic jug. This is your standard translucent milk, tea or water gallon container. I use a metal skewer heated on the range to make a generous number of holes in the bottom to ensure good drainage. The top is removed and discarded to allow rain, snow or sleet to enter though the top. This is soft plastic so you can use regular scissors to cut the jug leaving a "hinge" on one corner. A layer of coarse gravel in the bottom aids drainage and adds ballast. Add about 2.5 inches of new potting soil. (Don't use recycled soil, you won't be able to sort out the weeds from your valuable seedlings next spring.) Now you are ready to sow your seeds. Using this method, some plants have a very high germination rate. My biggest mistake has been planting too many seeds in a container and ending up with a mass of seedlings that are impossible to thin or separate. Note that most seeds need only a thin layer of potting soil over them and some tiny seeds should just be sprinkled on the top of the soil. Use duct tape to close up the sides of the jug. Using a marker write the name of the plant on the jug. This is important, you will not remember what's in it 5-6 months from now.

Photo by C. Ivory

An alternative to the plastic jug is a small planter. Ensure that the drainage is very good because, as opposed to the jug with the narrow neck, this container will get all the precipitation that falls. Use coarse gravel and top soil and sow the seeds. Then use your ingenuity to devise a cover of hardware cloth and row cover secured with twine, wire and duct tape. The hardware cloth prevents ripping and chewing and the row cover keeps out unwanted weed seeds and protects against hard rain. Label your container.

Tuck the jugs and planters into a protected part of your yard. They can spend the winter under a large shrub or along the side of a deck, on the ground. Start checking them in mid spring by peering into the top of the jug (one of the many reasons I prefer the jugs.) Depending on the growth of your seedlings you can transplant them in the early summer. You also can simply cut the top off the jug and use the bottom as a pot to allow the little plants to grow a little longer before transplanting. Remember that most perennials will not be "blooming adults" until their second year, or perhaps even third year.

Hoptree, *Ptelea trifoliate* started just last fall
Photo by C. Ivory

Herbaceous perennials that I have propagated using this method include: anise hyssop, vervain, black-eyed Susans, coneflowers, golden Alexander, New York ironweed, blazing star, and rattlesnake master. I hope to add Jack in the pulpit to this list.

Woody shrubs that I have propagated using this method are spicebush, hoptree and buttonbush. I have also germinated paw paw, persimmon and sweet gum trees just to see if I could and I did!

Carol Ivory, Extension Master Gardener

Notes from the Help Desk:

Q: What is rubber mulch and is it okay to use in my garden?

A: Mulch is a protective layer that falls over the soil either by nature or by man. We use mulch to suppress weeds, keep the roots of plants cool and retain water, and help reduce soil erosion. Rubber mulch is basically what you get when old tires are ground up and made into mulch. Many of us have seen this mulch used under playground areas as it is soft, and some have seen it used in landscapes.

Photo by Michael Barera, Wikipedia Commons

Dr. Linda Chalker-Scott from Washington State University Extension published a study that outlines the use of rubberized mulch versus a more traditional wood-chip mulch, sawdust, and straw/fiber mulch. As you might expect, rubber mulch didn't out perform any of the other mulches in terms of horticultural practices. In fact, quite the opposite from what manufacturers may want you to believe.

One of the most important things she points out is "It is abundantly clear from the scientific literature that rubber should not be used as a landscape amendment or mulch. There is no question that toxic substances leach from rubber as it degrades, contaminating the soil, landscape plants, and associated aquatic systems. While recycling waste tires is an important issue to address, it is not a solution to simply move the problem to our landscapes and surface waters."

As quoted from Dr. Scott, "The Bottom Line:

- Rubber mulch is not as effective as other organic mulch choices in controlling weeds
- Rubber mulch is highly flammable and difficult to extinguish once it is burning
- Rubber mulch is not permanent; like other organic substances, it decomposes
- Rubber mulch is not non-toxic; it contains a number of metal and organic contaminants with known environmental and/or human health effects"

Please see findings: http://puyallup.wsu.edu/wp-content/uploads/sites/403/2015/03/rubber-mulch.pdf

Our recommendations for mulch can be found in this VCE Publication: Mulching for a Healthy Landscape https://pubs.ext.vt.edu/426/426-724/426-724_pdf.pdf. It details organic and inorganic mulches and the best uses for each.

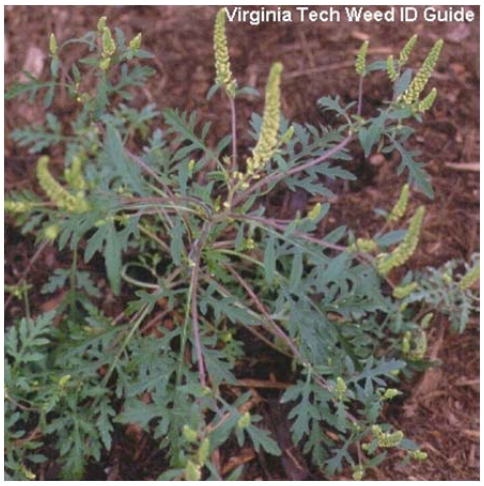
And remember to *Stop the Mulch Volcanoes* around trees!

Barb Bailey, Extension MG

It's Ragweed Season!

Ambrosia artemisiifolia – Common Ragweed, Annual Ragweed

What warped mind, do you suppose, gave the lovely name *Ambrosia* ("food of the gods" in Greek mythology) to the noxious weed that is possibly responsible for more misery in this country than any other plant? Common or annual ragweed is a primary source of the pollen that causes allergic rhinitis, miscalled hay fever, which afflicts millions of Americans every year. A single plant can produce a billion microscopic grains which waft about on every breeze, making it difficult for the sufferer to avoid them. The Mayo Clinic provides helpful recommendations like "Keep windows closed"; "Stay indoors during dry, windy days"; and "Wear a dust mask when doing outdoor activities".



There are about 50 species in the genus *Ambrosia,* all native to the Americas though some have become invasive pests in other parts of the world. A few of the other species, including *A. trifida* (giant ragweed), are also found in Virginia, but *A. artemisiifolia* is the one we are mostly likely to discover in our gardens – the one we need to recognize and remove before it can produce its flowers.

By September common ragweed may be over 3 feet tall with a reddish, erect, usually branched, stem. As its name suggests, its 6 to 12 inch-long leaves resemble the feathery leaves of Artemisia (Wormwood), though they are a dark or medium green, not the pale, gray-green that we often associate with Artemisias. They are pinnately compound and can be either opposite or alternate. Male flowers are 6-inch long racemes at the top of the plant; female flowers are in the axils of the upper leaves and branches. They are dull greenish-yellow and not attractive to insect pollinators.

This is a tough plant. It can endure much abuse and if merely cut back will quickly recover. Seeds can be buried in the ground for 40 years and remain viable. Ragweed is a pest of crops so Virginia Tech suggests various ways for farmers to try to control it, but for the home gardener the only solution is to recognize it and remove it, preferably long before September.

All photographs are from http://oak.ppws.vt.edu/~flessner/weedguide/ambel.htm

Alice Bagwill, Extension Master Gardener