November 2015-Vol.1 No.11

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Planting A New Tree

By Cleve Campbell | November 2015-Vol.1 No.11

Early winter is an ideal time to think about planting trees in your yard. Why? Because the lack of foliage allows you to assess the space available and determine which species is needed to add value to your home. Landscaping increases the appeal of a home by 5-11%, provides shade, and adds to the pleasure we take in living there. Late fall or early spring planting improves viability although container-grown plants can be put in any time of year except in frozen ground. In fall and winter, growth will be in the root system. In spring and summer, foliage requires extra moisture which necessitates more water.

Consider the space available: Some trees grow tall and wide while others have the particular shape you may want. Plant the chosen tree so that when the tree matures, its branches will remain several feet from your house. This will help avoid clogged gutters or damage to the house from fallen limbs. Remember to look for utilities overhead and underground, and be mindful of septic fields. Ask yourself, how much will other plants compete for sun and rain? For twenty years I wondered why an American holly never grew any taller until three nearby trees came down and the holly took off like gangbusters. A soil test will help you choose the right species for your yard and thus avoid expensive fertilizing. Does the earth stay damp or dry? Consideration of these factors in the planning stages will return dividends for years.

Selecting a specimen that fits your desires and matches the requirements of your site will relieve disappointment later. What do you want your new tree to do? Remain green year-round? Flower? Shield a view or draw attention to itself? Shelter the home from wind, sound, or pollution? Information about the characteristics of a particular species comes from many sources including nursery staff, the tree tag, local planting guides and your extension agent. It's helpful to ask about a particular plant in the nursery since there may be a variety of features developed from the same species.

Obviously you want a healthy tree, so go to a reputable source and decrease the chance of diseases and pests. Although I've dug trees from the property of generous neighbors, I've lost some because it's difficult to get enough of the root. A similar problem arises with trees bagged with burlap. These trees will not have as complete a root structure as container-grown specimens and will need more watering. Notice any damaged bark and odd branching structure that will cause problems as the tree grows. A little homework in the selection process allows you to anticipate the needs of your new addition. We all want quick results, but note that a tree with a one inch trunk will catch up to a much larger tree because it will establish itself sooner and with less maintenance.

OK, you're ready to plant the right tree in the right place. Digging a hole at least twice the size of the root ball will allow horizontal roots to spread, anchoring the plant against storms. Scoring the sides of the hole helps that process along, especially in our clay soil. Ordinarily, we want to match the soil line of the site with the soil line of the new tree. We make an exception to this rule if the ground is either especially compacted or it stays wet. Some trees, such as bald cypress and willow, like wet feet, while others would never flourish if water pools near their roots. If you need to plant a few inches higher than the surrounding yard, pull soil up to the tree's soil line and remember you'll need extra watering in the first year.

Place the tree in the hole with as much of the soil around its root ball as possible. If it's root-bound, you'll see lots of small roots that have pushed against the sides of the container. Make a few vertical cuts in the root ball so that you can spread the roots out. I once neglected to do that. When I dug up a stunted azalea five years later, I found that its roots had never escaped the shape of its container because it could not penetrate our sticky clay.

With a bagged and burlap tree, place the tree in the hole before removing anything. Peel the burlap away but do not attempt to pull it out from under the root. It's not necessary to remove either burlap or any wire basket completely. Just cut the horizontal wire around the top of the ball so it won't strangle the tree or interfere with maintenance in the future.

Fill the hole about two-thirds with only local soil, no amendments. (Roots can be slow to move into native soil if the amended soil provides a more attractive environment.) You can amend the soil of planting beds, but not individual holes. In addition, water tends to stay in the hole with the lighter amended soil rather than flowing out into the dense clay. Water that accumulates in the hole can suffocate the roots or cause root rot.) Adjust the trunk to be upright and water thoroughly at this point to settle the soil. When the water has gone down, finish filling to the soil level. Any left-over soil can make a 3-4 inch berm around the hole. The berm will help later watering to soak into the roots, keep mulch from escaping and form a temporary barrier

to weeds. Regular watering of about an inch a week is essential, especially for spring and summer planting when rain can be sparse and new roots are undeveloped. Three inches of mulch keeps the ground from drying out. Pull mulch away from the trunk — about 3 or 4 inches away — to discourage pests and adventitious roots.

Maintenance during the early years insures a better result. If a sapling leans, stake it with three supports, being careful that the lines are padded to protect the trunk and branches. Leave a little slack to allow the tree to secure itself. Remove the staking after a year. Weeding the mulch will keep the lawn mower and string trimmer from damaging the trunk. Fertilizer may not be required at all for container-grown nursery stock since it's usually included at the nursery. A controlled-release fertilizer protects a new plant's roots from burning and continues to nourish them over time. When next spring arrives, your work will begin to pay off by adding beauty and value to your home.

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Mycorrhizae – Part I

By Cleve Campbell | November 2015-Vol.1 No.11

In the fall of 2012 my wife and I were planting trees, lots of trees. If you were living in Central Virginia at the time, you may recall we had had a little wind storm the previous June. Actually, this was no little storm! It was the first time I had ever heard the word **derecho.** As a result of this unusual storm, we lost many trees, so the following autumn, we began the chore of replanting.

We were planting our first replacement, a native dogwood, and I noticed my wife sprinkling a gray powdery substance on the root ball and in the hole. Hmmm. I just had to ask, "What's that stuff you're adding?" Well, I got that familiar stare, and then she replied, "Mycorrhizae." Well, I needed a little more information about this mystery substance. "Mircorissen what?" I asked. And after being married for some forty odd years, I got the standard response. "Yep, mycorrhizae and it's pronounced: my-kuh-ri-zee."

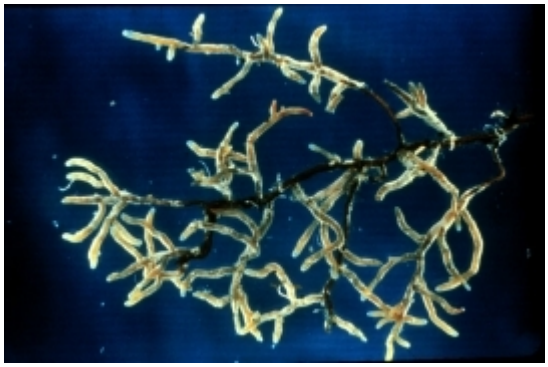
"Okay," I responded, "what is that mycorrhizae stuff you are dumping in the hole?" With a look of disbelief, she replied, "Mycorrhizae is derived from two Greek words, *Mykos* meaning fungus and *Riza* meaning roots." Maybe I shouldn't have asked. I started shaking my head in disbelief, and before I could close my mouth, it just rolled out — "Well, that's just fantastic — you're infecting our new tree with a root fungus. That's just great! At least it will be easy digging when we replace the dead tree. What are you thinking?" I really wasn't interested in her thought process at that moment, but I wanted to throw in a little barb. She slowly responded, "Last week I was reading about the benefits of mycorrhizae to trees. Perhaps you should do a little research and stop complaining." Well, I figured she was right. I needed to do a little research before we proceed to kill the new trees we were planting!

Well, by now I know you are wondering what this has got to do with the edible garden, and I promise we'll get to that in just a bit. But first I needed to do a little fungi research before my wife killed all our new trees — all 28 of them.

As it turns out, mycorrhizal fungi have been around for about 400 million years and they are native to most soils. However, the concept of mycorrhizal fungi is a fairly recent notion. In 1881 a Polish mycologist, Franciszek Kamienski described an association between a fungus and the roots of a plant. In 1885, A.B. Frank, a German botanist, was commissioned by the King of Prussia to discover if truffle production could be increased. He never succeeded in his mission, but described root structures on trees closely associated with truffles. Mr. Frank hypothesized that there was a mutually beneficial relationship — called a symbiotic relationship — in which a fungus and host plant rely on each other: the fungus extracts nutrients from the soil and transmits them to the host plant; the host plant in turn nourishes the fungus. Frank is given the credit for coining the term **mycorrhiza** (this is the singular; the plural is mycorrhizae)**,** meaning fungus root. Back in the 1880's the concept that a fungus could be good for a plant was a revolutionary idea and flew in the face of the conventional thinking at the time. I must admit on that day when my bride was adding fungi to our new dogwood tree, I too did a little head scratching.

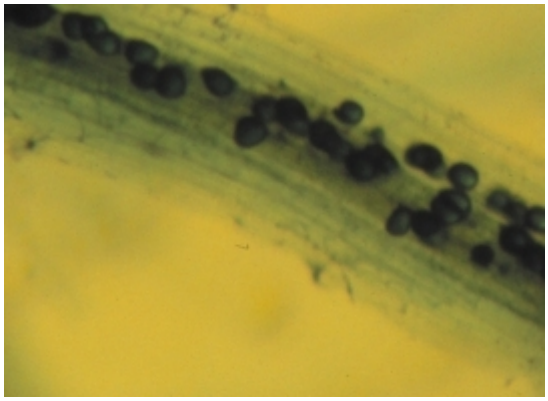
As it turns out, after 130 years and thousands of research papers, mycorrhiza has become an accepted scientific concept, and the symbiotic relationships between fungus and roots have been exploited for applications in agriculture. This interaction results in a recognizable fungal structure — tubular filaments — on or within the roots, and today it is estimated the approximately 90% of all vascular plants live in some association or symbiotic relationship with mycorrhizal fungi.

Mycorrhizal fungi are generally classified into **two general types** based on the position of the thread-like filaments of the fungus: ectomycorrhiza and endomycorrhiza. (Brady &Weil)



Ectomycorrhizae Fungi- The fungal sheath in this photo is white; howverer, they may be black, orange, pink or yellow. (Photo Source: USDA)

Ectomycorrhiza (Ecto=outside) group includes hundreds of different fungal species associated with trees and shrubs such as pine, birch, hemlock, beech and oak. The fungi grows around and between the root cells, the fungus doesn't actually penetrate the root cells. The fungus also forms a considerable mass in the soil surrounding the plant roots. The fruiting, or reproductive, bodies of these fungi are sometimes visible, and we recognize them as **mushrooms**! Ectomycorrhiza are commonly associated with forest trees, pasture fields, lawns, and open woodlands and in places next to water. They are host specific, have many species and can disperse far and quickly. (Brady & Weil)



Ectomycodrrhiza Fungi-
Mircroscopic view of AM fungus, the dark masses inside the cell of this clover root are vesicules.
(Photo Source USDA)

Endomycorrhia, (Endo=inside), the most important and most widespread of the endomycorrhia group are called **arbuscular** mycorrhizae (AM). These fungi actually reside inside the cells of the plant root. Once inside the root cell, they form small, highly-branched structures called arbuscules. These structures serve to transfer mineral nutrients from the fungi to the host plants and sugars from the plant to the fungus. The fungus also forms a considerable mass of hyphae in the soil surrounding the plant roots. This mass of hyphae is often referred to as the **mycelia.** (Brady & Weil)

Root hairs absorb plant nutrients dissolved in soil water, often called the **soil solution.** However, there are some essential nutrients such as phosphorus, zinc and copper that have limited mobility in the soil solution and are often unavailable to the root hairs. AM fungi function as an extension of a plant's root system. In addition to growing within the root, much of the body of the fungus called **hyphae** is in the soil. These filamentous structures of the fungus give the root more "surface area" and are more effective than root hairs at exploring the soil for nutrients such as phosphorus, copper and zinc. The fungus picks up these nutrients and transports them back to the root where they are released by the arbuscules and can be used by the plant. Simply put, mycorrhizae extend the plant's reach, allowing it to get more than it needs to survive, making the plant stronger, especially during drought periods. A stronger individual plant also means the community of plants is more resilient to disturbance. (Plaster)

Most native plants and agricultural crops that have the capacity to form mycorrhizal associations perform poorly in unfertile soil, especially soils with low phosphorus levels and the absence of mycorrhizal fungi. Many plants in the Legume family are especially dependent on mycorrhizal relationships, not only to obtain sufficient phosphorus and other nutrients, but also to enhance their nitrogen-fixing symbiosis with the rhizobia bacteria.

As always in the plant world, there are exceptions to the rule: two plant groups that do **not** form mycorrhizae are the Cruciferae family (mustards, cabbage, rapeseed) and the Chenopodiaceae family (beet and spinach). The presence of AM fungi are most important where soils are low in nutrients, especially phosphorus. (Brady & Weil)

Mycorrhizal fungi obtain carbohydrates (simple sugars) from the host plant. It is estimated that plants "infected" by mycorrhiazae shunt about 15 percent of sugars produced by their leaves to their mycorrhizal symbiont. In return the host plant gains a number of benefits:

- Roots are better able to absorb phosphorus — probably the most certain and important benefit.

- Roots are better able to absorb water, making plants more drought resistant and able to absorb zinc, copper and other nutrients.
- Rootlets that are "infected" by mycorrhizal fungi live longer than uninfected ones.
- Some mycorrhizae protect roots from disease and probably from low levels of toxins, including aluminum and heavy metals.
- Mycorrhizal fungi are particularly effective at aggregating soil particles, so they improve the physical condition of soil for plants. A complex, sticky gooey substance, called glomalin, is produced by mycorrhizae that binds and protects soil aggregates.

(Plaster)

Today the beneficial properties of mycorrhizae have been exploited for applications in agriculture, forestry, horticulture, declamation and biocontrol.

In addition to gathering nutrients and water for plants, mycorrhizae can **infect and connect neighboring plants**, allowing nutrients and transfers between the two plants. Even plants of different species may be connected through hyphae bridges or the mycelium network between the roots of different plants. An example is the **Indian Pipe** wildflower (*Monotropa uniflora*), which is unable to obtain food through photosynthesis; instead, its roots are infected by a mycorrhizae from a nearby tree and the tree feeds the fungus, which in turn transfers some of the sugar to the Indian pipe. (Plaster)

In addition to these benefits, new research is surfacing to suggest that the mycelium network of a myccorhizae may be viewed as a "biological internet" and that plants are able to exchange information using the mycorrhizae network. One research project performed on broad beans supports this notion.

When a pest damages a broad bean plant, the level of plant "volatiles" (methyl salicylate) is increased. The volatiles act not only to repel pests but also to attract enemies such as parasitoids. Increased levels of volatiles were not only observed in a plant under attack from aphids, but also higher volatiles were measured in the **unattacked plants connected to the mycorrhizae network of the plant being attacked.** No increased levels of volatiles were noted in adjacent plants that were not connected to the "biological internet." The study concluded that the aphid-attacked plant was sending out a message about the attack via the mycorrhizae network to the other plants on the network.

Several years ago I was taking a soil class at the local community college and the professor remarked that the emphasis in soil science was changing from soil chemistry to soil biology. Well, my mycorrhizae journey may have just reaffirmed his statement. And as for my bride, well, she may already have made that transition from chemicals to biology.

Thanks for stopping by The Garden Shed and we hope to see you again next month when we go into detail on how mycorrhizal fungi fit into the organic vegetable garden, its effect on individual vegetables, and how to maintain a healthy mycorrhizae population.

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Edible Garden Tips and Tasks for November

By Cleve Campbell | November 2015-Vol.1 No.11

With the arrival of November, the 2015 vegetable growing season is finally coming to an end, and those early tomato seedlings are rapidly become a distant memory. November in the vegetable garden is a clean-up month, and also a time to reflect back on the growing season as to what varieties performed well and what varieties performed below our expectations. Don't forget to make year end notes in your garden journal, what varieties did well and what varieties performed below explications, this information can be very valuable when planning for the 2016 growing season. We will soon be reminded of the upcoming 2016 growing season because in December we will start to receive the 2016 seed catalogs — chock full of pristine and unblemished photos and exciting new vegetable offerings.

Here's my Edible Garden to-do list for November:

- **Root crops** such as carrots, radishes, turnips and parsnips **store well outdoors** in the ground. Just before the ground freezes, bury these crops under a deep layer of leaves or straw. Harvest as needed during the winter months.
- **Keep mulches pulled back** several inches from the base of **fruit trees**, to prevent bark injury from hungry mice and rodents.
- **Fallen, spoiled or mummified fruit should be cleaned up** and destroyed by burying or placing them in the trash. Good sanitation practices reduce re-infestion of insects and diseases in the following seasons.
- **Mulch strawberries** with straw or leaves. This should be done after several nights near 20ºF but before the temperature drops into the teens. Apply the straw or leaves loosely but thick enough to hide plants from view.
- **Now is a good time to collect soil samples** to test for pH and nutrient levels. A free soil testing kit is available at your local Extension Office. The Charlottesville-Albemarle Extension Office is located in the County Office Building on 5th Street Extension, 460 Stagecoach Road, (434) 872-4580.
- Don't forget the **garden hoses: drain and roll up and store on a warm sunny day**. It's hard to get a cold-water hose to coil into a tight coil. Also, be sure and shut off and drain any outdoor water pipes and irrigation systems that may freeze during the cold weather.
- **Rhubarb** plants that are four years old or more can be **divided and transplanted**. A site prepared by deep digging and incorporating compost will pay off with a good yield in upcoming years.
- **Prepare a spot in the garden NOW for early planting of peas.** This way you'll be all ready for planting peas in the spring, before the soil dries out.
- **Tidy up the asparagus bed.** Cut off the tops of the plants to about 3-4 inches above the soil level. Weed and add a winter dressing of compost or aged manure to the bed.
- **Early November is a good time to plant most fruit trees**, especially if a little mulch is added. Local gardening and landscape centers often offer discounts on fruit trees at this time of the year.

- If you have been thinking about installing a deer fence around your vegetable garden, the **fall and winter months are a good time to design and build a deer fence.**

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Sweetbay Magnolia

By Patsy Chadwick | November 2015-Vol.1 No.11

by Pat Chadwick

With all the attention given to global warming these days, most gardeners seek out drought-tolerant plantings for their gardens and that's a good thing. For the gardener who has wet or poor-draining soil, finding plants that don't mind soggy feet may be a challenge. Sweetbay magnolia is one plant that comes to mind for such demanding growing conditions.

BACKGROUND

Sweetbay magnolia is a smaller, less majestic cousin of *Magnolia grandiflora* (Southern magnolia), that beloved aristocratic icon of the southern United States. One of 125 deciduous and evergreen members of the ancient *Magnoliaceae* genus, sweetbay magnolia was introduced into cultivation in the late 1600s and first appeared in European gardens in 1688. Its common name, sweetbay, comes from the sweet-smelling bay-like foliage, while the term *magnolia* honors French botanist Pierre Magnol (1638-1715). Other names for this plant include swamp magnolia and laurel magnolia.

Sweetbay magnolias are native to the southeastern United States where they are found growing in acidic, medium to wet soils, in full sun to part shade. Their range extends north along the Atlantic coast to New York. In the more northern (USDA Zone 5) part of their range, they tend to appear as open, multi-stemmed shrubs or as small 10- to 20-foot trees. In the deep southern part of their range (USDA Zone 9), they are more likely to maintain a tree-like habit and can grow to 60 feet or more. In Virginia, they are most commonly found growing wild in coastal plain areas and are less frequently found in the Piedmont. Although not native to Albemarle County, sweetbay magnolias have reportedly been found growing wild on a single mountain site in nearby Augusta County. In this area, they typically grow 20 to 30 feet or more tall with a similar spread.

DESCRIPTION

- ***Habit***: Sweetbay magnolias are columnar or vase-shaped. They typically grow as multi-stemmed specimens but can be found with single trunks.
- ***Foliage***: The glossy evergreen to semi-evergreen leaves measure three to five inches in length and are dark green on top with a silvery-looking underside. A breeze can make the tree shimmer as the silvery undersides are exposed to the sun. In this area of Virginia, the evergreen nature of its foliage depends upon the severity of our winter weather. While the tree may lose some of its foliage, it recovers nicely in spring.
- ***Blossoms***: The tree typically blooms in May through June and may occasionally send out random blossoms during the summer months. Because it blooms later in the spring, it is a good alternative to earlier blooming star and saucer magnolias, which are subject to damaging spring frosts. The creamy white flowers are similar to those of the Southern magnolia but much smaller, measuring approximately two to three inches in width. The blossoms are cup shaped and have 9 to 12 petals. Each blossom opens in the morning, closes at night, and lasts for two or three days. Although sweetbay magnolias will thrive in partial shade, they prefer a minimum of four hours of direct sun per day in order to produce their best flowers.
- ***Fruit***: The blossoms are followed in late summer by dark red aggregate fruits, appearing as cones measuring about two inches long. These cones eventually split open to expose flattened, glossy, bright orange-red seeds.

Sweetbay Magnolia Seedpods

- ***Bark***: The bark is smooth and green on young branches and ages to a silvery gray, adding interest to the winter landscape.
- ***Cultivars***: In addition to the native species, a number of cultivars are available commercially. 'Henry Hicks' and 'Moonglow' are reported to be more reliably evergreen than the species. Cultivar 'Santa Rosa' has larger leaves than the species.

GARDEN USES AND BENEFITS

Their preference for moist, rich, organic soils and their ability to tolerate wet, boggy conditions make sweetbay magnolias a good choice for planting near ponds, along streams, in swampy areas, or in low spots that collect water. Because they can tolerate periodic flooding, they thrive in rain gardens. Sweetbay magnolias make excellent specimen trees in the lawn, as part of a foundation planting, or at the edge of a woodland setting. The tree's multi-stemmed shrubby form works well in a mixed shrub border. Its smallish size also makes it a good candidate for planting near a patio where it can help filter light or provide a privacy screen. Used in groupings, these trees may help to define areas, such as playgrounds or parking lots, or to hide an unsightly view. Recognized as being resistant to wind damage, sweetbay magnolia is a good choice for use as a wind break.

Despite its preference for moist soil, sweetbay magnolia is drought tolerant once established. Proof of this lies in the accompanying photo of a thriving specimen growing in a dry site south of Charlottesville. With this past summer's drought conditions during July and August, it weathered the lack of moisture well and exhibited only mild signs of stress.

Sweetbay Magnolia Specimen South of Charlottesville

In late summer and early fall, the clusters of red fruit attract squirrels, small rodents, turkey and quail. The fruit is also popular with songbirds such as blue jays, Northern flickers, towhees, and vireos. The blossoms attract a number of butterflies and moths, including the Eastern Tiger and Zebra Swallowtail butterflies.

CULTIVATION

- ***Propagation*** – Sweetbay magnolia may be easily rooted from softwood cuttings.
- ***Planting —*** For best results, plant the sweetbay magnolia in the spring in full or partial shade. It prefers evenly moist, acidic soil, but it will tolerate average garden soil provided the pH is 5.5 to 6.5. This tree grows at a medium to fast rate.
- ***Pruning***– Prune after the plant finishes blooming during the growing season. The plant wants to grow naturally with several trunks, but it can be trained to grow with a single trunk. It needs little pruning to develop a strong structure. Prune any diseased, broken, or dead branches all the way to their base. Thin out crowded branches to allow sunlight and air filtration to the inner limbs.

PROBLEMS

Sweetbay magnolias do not have any serious insect or disease problems. Leaf spots may occasionally appear on the foliage but treatment is not normally necessary. Virginia Cooperative Extension (VCE) Publication 450-237 includes this plant among the problem-free trees that are recommended for Virginia landscapes.

This plant often appears on lists of plants that deer seldom browse. However, no plant is ever completely deer proof. So, if you have a deer problem, be aware that they may nibble sweet magnolia leaves and smaller twigs.

SUMMARY

Sweetbay magnolia is a small, gracefully shaped tree that has a lot to offer throughout the year. This native ornamental bears attractive, lemon-scented flowers in spring and sporadically through the summer. Glossy green foliage persists on the tree nearly all year long. Showy red cone-like fruit provides color, interest, and food for wildlife in fall, and smooth gray bark adds beautiful color and contrast in winter.

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The Ornamental Garden in November

By Patsy Chadwick | November 2015-Vol.1 No.11

November's chilly winds and frosty mornings are sure signs that fall will soon give way to winter. But don't put away those garden tools just yet. There's still a lot to be done in the ornamental garden. Follow this month's "To Do" list to prepare the garden for the cold weather ahead.

***Before the ground freezes**:*

- **Water shrubs and trees deeply.** Well-hydrated woody plants are better prepared to withstand winter weather. This particularly holds true for newly planted trees and shrubs.
- **Continue planting deciduous trees and shrubs.** For planting advice, see Virginia Cooperative Extension (VCE) Publication 430-295, *Tree and Shrub Planting Guidelines*, http://www.pubs.ext.vt.edu/430/430-295/430-295_pdf.pdf.
- **Fertilize trees and shrubs as needed.** This will ensure that food is available to the plants in early spring.
- **Plant spring bulbs.** Tulips and Dutch irises need to be planted in cold soil (less than 60°F) so that they do not send up shoots before roots are established. Plant tulips deeply to help protect them from mice, voles and squirrels.

***After the ground freezes**:*

- **Mulch flower beds.** This will help protect plant roots from cold weather and guard against soil heaving. Remember to keep mulch from touching the trunks of trees and shrubs.

***After a killing frost**:*

- **Cut back late-blooming chrysanthemums.** Leave about three inches of flower stalks above ground. See last month's newsletter article ("The Ornamental Garden in October") for advice on which perennials to cut back in the fall.

***General yard tasks**:*

- **Protect younger trees from deer damage.** Damage may occur when male deer rub and scrape their antlers against tree trunks in an attempt to remove the "velvet." Surround the tree trunk with a physical barrier, making sure the barrier does not rub against the bark or restrict the trunk from expanding as it grows. Options include fences, wire mesh trunk guards, plastic tubes or pipes, or loosely wrapped chicken wire. Deer repellents may also help but a physical barrier is a better choice.
- **Prepare ponds and water features for winter.** Use a pond net to scoop fallen leaves from the water. Prune dead stems and leaves from aquatic plants to prevent the debris from decaying in the water over the winter.
- **Prolong the life of your garden hoses.** Drain them before the onset of cold weather. Wipe off dirt and other debris and store them in a shed, garage, basement or other protected place out of the weather. Also, don't forget to drain outdoor faucets before freezing weather.
- **Clean, dry, and store all breakable items.** Place anything that might be damaged by winter weather, including terra cotta pots, rain gauges, bird baths and garden art, out of harm's way.
- **Prepare your greenhouse for winter.** Now is the time to do some basic cleanup and

maintenance. Clean the windows thoroughly so that the maximum amount of sunlight can penetrate to your plants. Replace any broken or cracked windows. Check all opening panels to make sure they are in good working order. Grease the hinges if needed. If you rely on a heater to keep temperatures above freezing, make sure it is in working order.

- **Inspect your garden and property for natural elements to use for holiday decorations**. Unusual barks, lichens, seed pods, berries, pine cones, ground covers, and even twigs can add texture and interest to holiday centerpieces, wreaths, and mantel decorations.

Carry your tasks indoors:

- **Stop feeding your houseplants and cut back on water.** They grow little, if any, during the cooler temperatures and shorter days of winter. Therefore, they require less fertilizer and water than they do during the summer months.
- **Pot hardy spring bulbs for indoor forcing**. For advice on how to force bulbs into bloom, see VCE Publication HORT-76NP, Fooling Mother Nature: *Forcing Flower Bulbs for Indoor Bloom*, http://www.pubs.ext.vt.edu/HORT/HORT-76/HORT-76.html.
- **Plant amaryllis bulbs for a spectacular indoor floral show in the dead of winter.** They prefer to be planted in a pot that is only slightly larger than the bulb. So, select a pot that allows no more than one inch of space on each side of the bulb. If the pot is too big, the bulb may not bloom. Position the bulb so that the top third is above the soil line. Place the potted bulb on a sunny windowsill in a cool room (about 60 to 75°F). Water after potting. Afterwards, water only when the soil feels dry to the touch. Allow about 12 weeks on average from potting to bloom.
- **Plant paperwhite narcissus bulbs early in November so that the blooms will open by Christmas.** Allow about five to six weeks from planting time to bloom. To plant, place two or three inches of pea gravel in a bulb pan, shallow bowl, or hurricane-style vase. Add water to just below the top surface of the gravel. Position the bulbs closely together on top of the gravel (not down in the water). The bulbs should touch so that they can support one another. Plant the bulbs with tips pointing up and roots pointing down. Each bulb will produce several stems topped with clusters of sweetly-scented white flowers.

Aerating Your Lawn

By Melanie | November 2015-Vol.1 No.11

by Nancy Bolton

Core aeration is a recommended cultural practice to maintain and encourage a healthy lawn. It is especially important for compacted, heavily-used turf and those with thatch buildup of more than half an inch. Aeration is a process that removes small soil plugs or “cores” from your lawn. Each core is 1/2 to 3/4 inches wide and 3-6 inches long. Depending on the machine, the holes are about 2-6 inches apart. These finger-like cores are deposited on the lawn itself and will disintegrate and filter back down into the soil after it rains. Mingling soil and thatch hastens the decomposition of thatch.

What will aeration do for my lawn?

Aeration helps improve root zone conditions by relieving soil compaction while controlling thatch. Compaction occurs in clay-based soils and in those that are heavily used by play or parking. Compaction is most severe in poorly-drained or wet sites after the site dries. This compaction reduces the space in the soil that would normally hold air. Grass roots need oxygen to grow and absorb nutrients and water. The result of this lack of air in the root zone is poor top growth and lawn deterioration.

The Virginia Cooperative Extension experts believe that core aeration benefits your lawn by:

- Increasing the activity of soil microorganisms that decompose thatch
- Increasing water, nutrient and oxygen movement into the soil and allowing carbon dioxide to get out
- Improving rooting
- Enhancing infiltration of rainfall or irrigation (better drainage)
- Helping prevent fertilizer and pesticide run off from overly-compacted areas

How do I know if I need to aerate?

As mentioned, lawns with compacted soil leading to thin turf need aeration. In addition, those lawns that have more than 1/2 inch of thatch also could benefit from aeration. If in doubt, remove a square foot section of lawn at least 6 inches deep. If grass roots extend only into the first 1-2 inches, your soil is compacted. With cool season grasses such as fescue, the roots will be at their shortest at the end of the summer.

When do I aerate?

In Virginia, the best time to aerate for cool season lawns is in the cooler weather of the fall. Spring is an alternative though. Root extension is the longest in the spring, but aerating in the fall aids in the production of new roots. Fall is the time of the year for vigorous growth and lawns will quickly recover from the aeration process. Weed competition is the least at this time as well. Do not aerate frozen ground nor newly seeded or sodded lawns in the first year. Also, do not aerate during drought conditions.

How do I aerate?

- Mow the lawn low — this is something you will never hear me say otherwise!
- If it's dry, water thoroughly — meaning about 1″ of water. Do this about 2 days prior to aeration. It may take more than one watering if it is not being absorbed and there is runoff. The soil should be **moist** — but **not wet** or the cores will stick in the hollow tines of the machine.
- Rent an aerator at a local rental center or hire a landscape company. Be sure the machine has hollow tines that are 4 inches deep.
- Run the aerator in at least two different directions to insure good coverage.

You can **watch a video** that shows how to aerate a lawn. Find the video at "Aerating Your Lawn" Video (this video features Tom Thompson, head of the Department of Crop and Soil Environmental Sciences at Virginia Tech and Head Golf Coach Jay Hardwick and was filmed on the Pete Dye River Course, a top-ranked college golf course on the campus of Virginia Tech).

Other things to know:

- Aeration helps to control thatch.
- It is difficult to core-aerate heavy soils that have stones, rocks or tree roots.
- Mark sprinkler heads or underground cables and lines that could be damaged by the aerator.
- Soil cores are best left on the lawn. It may take 2-4 weeks for them to disintegrate.

- Lawns may be fertilized and seeded immediately after aeration — with or without soil top dressing.
- If your soil is heavily compacted, apply mature compost about 1/4 inch deep before seeding.
- In general, aerate once a year. One time is not a quick fix.

To reduce compaction during the winter….

- Keep the lawn clear of lawn furniture, toys or debris
- Remove leaves from the lawn
- Avoid excessive lawn foot traffic
- Avoid parking a truck or car on any part of the lawn
- Avoid walking on lawn if there is frost or ice
- Ensure that appropriate “ice melt” chemicals are selected to minimize possible environmental effects. Avoid using those with nitrogen and phosphorus.

Sources:

“Aerating Your Lawn,” Virginia Cooperative Extension Publication, pubs.ext.vt.edu/430/430-002

“A Lawn to Dye For — How to Create a Perfect Lawn: Aerating Your Lawn” Video Series, Virginia Cooperative Extension, pubs.ext.vt.edu/CSES/CSES-38

“Bsic Turf Management Principles — Core Cultivation or Aerating,” Colorado State Cooperative Extension Publication, CMG GardenNotes #551

Sweet Potatoes in Orange Cups

By Cate Whittington | November 2015-Vol.1 No.11

by Cate Whittington

As Americans celebrate Thanksgiving Day with family and friends, sweet potatoes are a frequent offering to their communal tables.

Did you know that sweet potatoes (*Ipomoea batatas*) are not really potatoes at all? They are members of the morning glory family. While there are numerous varieties of sweet potatoes, most fall easily within two simple categories: firm (golden skin and pale flesh) and soft (copper skin and orange flesh).

The soft, orange-fleshed sweet potatoes are often mislabeled as yams in our grocery stores, but these two tuberous root vegetables are actually quite distinct from each other. Yams, native to Africa and Asia, are members of the lily family. Their bark-like skin is nearly black, their flesh ranges in color from white to purple, and their size varies from the size of a small potato to more than five feet long!

The following recipe uses the common orange-fleshed sweet potato, high in potassium and Vitamin A. Served in individual orange skins, these ‘cups’ may be prepared a day or two in advance. They add a splash of

delightful color to any Thanksgiving buffet.

This recipe is easily multiplied and tweaked. As sweet potatoes and orange juice both have their own distinctive sweetness, I prefer to omit additional sugars. But, depending upon your sweet tooth, you may want to add a little brown sugar or a traditional favorite—marshmallow topping.

Sweet Potatoes in Orange Cups

Bake sweet potatoes in 400-degree oven for 50-60 minutes.
Meanwhile, cut oranges in half and scoop out the pulp. Reserve the pulp for juicing.

Slice open the baked sweet potatoes, scoop out the contents, and mash in a large bowl. To every two medium sweet potatoes, add:

1⁄2 cup orange juice
2 tablespoons butter
1⁄4 teaspoon each of cinnamon, allspice, and ginger; pinch of salt

Fill empty orange shells with the mashed potato mixture and serve warm.