December 2015-Vol.1 No.12

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Holiday Decorating with Fresh Greenery

By Melanie | December 2015-Vol.1 No.12

For many families, selecting a Christmas tree is an annual tradition enjoyed by children and adults alike. Although artificial trees can certainly look real and beautiful, a live tree brings a feel and fragrance associated with the holidays. They are readily available at local garden centers, or in parking lots by the Boy Scouts, Kiwanis, school groups and owners of local Christmas tree farms.

Today, over 32 million Christmas trees are sold each year. The total area of tree farms in the United States has been estimated at over 1 million acres, and about 100,000 people are employed in the live Christmas tree industry. According to a Virginia Tech survey of retail lots in Virginia, only 29% of the trees for sale were grown in Virginia, but this depends on your location. Just because a tree is not grown in Virginia does not necessarily mean that it is not fresh and fragrant. Trees for sale that carry the logo, Virginia Fresh, are certified to be grown in Virginia and meet the highest standards for Christmas tree quality. If this logo is displayed where you purchase your trees, you can be assured you are buying a locally grown, high-quality tree.

Choose-and-Cut Farms provide much more than just a Christmas tree. It can be a great outdoor family adventure with a local farmer who often provides a saw for cutting and even hot chocolate for cold hands. This is usually a less expensive choice than going to a retail lot. The freshness of the tree cannot be denied. To find a choose-and-cut tree farm, check your local newspaper usually right after Thanksgiving.

Others prefer buying a living, balled-and-burlapped tree which can then be planted in their landscape and enjoyed for years to come. These can be very heavy though and cannot be kept inside for too long without drying out.

Important Points to Consider When Selecting a Christmas Tree

Species

There are many different species of Christmas trees normally sold in Virginia, but the most popular are the eastern white pine, Fraser fir, Scotch pine, and Norway spruce. The table below provides some useful information for these species. Fraser fir emerges as one of the best species in terms of needle retention and fragrance, while the Norway spruce has the least desirable characteristics.

Table 1. Characteristics of common Christmas tree species under room conditions. (1 = most desirable; 4 = least desirable)

	Fraser Fir	White Pine	Scotch Pine	Norway Spruce
Needle retention without water	1	1	1	4
Needle retention with water	1	1	1	3
Firmness of branches	2	3	1	2
Fragrance	1	2	2	2
Resistance to ignition	2	3	3	2

Adapted from: Winch, F. E., and G. R. Cunningham. 1969. *Selection, identification, and care of Christmas trees and greens.* Cornell Univ. Cooperative Extension Service Bulletin 983.

Size

Most rooms will easily accommodate a 7-foot tree but rooms with cathedral ceilings can accommodate a much larger tree. Expect to pay more for oversized trees. On many lots and farms, trees are priced according to height, so it becomes especially important to buy a tree that is the right size for your home. Leave room for a topper on the tree as well as the height of the bottom of the stand from the floor.

Freshness

To be able to tell whether or not a tree is fresh is very important. The length of time since cutting and the way the trees have been handled can greatly influence how well they will hold their needles and fragrance once they are put up. In general, each tree should have a healthy, green appearance without a large number of dead or browning needles. Needles should appear fresh and flexible and should not come off in your hand if you gently stroke a branch. A useful trick is to lift a cut tree a couple of inches off the ground and let it drop on the cut butt. Green needles should not drop off the tree. A few dried, inner needles may fall, but certainly the outer, green needles should not be affected.

Care of Christmas Trees

Water

Once you have returned safely home with your Christmas tree, its continued freshness depends upon the type of care you provide. You should make a fresh cut across the bottom, about 1 inch above the old base.

This removes any clogged wood that may not readily absorb water. After finding just the right spot, the tree should be placed in a stand with a large reservoir of water. Depending upon the size, species, and location of the tree, it may absorb a gallon of water in the first day, so it should be checked frequently and re-watered as necessary.

Although some people advocate placing various substances in the water to preserve freshness, we recommend that you simply keep the tree well-watered with pure tap water. As long as the tree is able to absorb and transpire water, it is reasonably fire-resistant. It is important that the tree always be kept watered and not allowed to dry out. If the tree does become dried out, it may not be able to adequately absorb moisture once it is re-watered, and it will shed its needles prematurely. Taking the tree down and cutting about a 1-inch slice off the bottom of the trunk, then replacing the tree in the stand and re-watering, is the only remedy for this problem. Wow! That would be a big job if it was already decorated.

Location

The Christmas tree should be located in a safe, low traffic place, preferably near a wall or corner where it is not likely to be knocked over. It may be necessary to anchor the tree with nylon thread tied around the trunk and through screw hooks fastened to the doorway or window trim. This particularly helps if young children and pets have access to the tree.

Keeping the tree away from heat sources such as hot air ducts, wood stoves, and fireplaces will help to preserve freshness and lessen fire danger. Similarly, light cords and connections used in decorating the tree should be in good working condition. Lights should always be turned off at bedtime or when leaving for an extended period of time. Fresh, well-watered Christmas trees do not represent a fire hazard. Trees that are dried out, however, do.

Living Christmas Trees

Living Christmas trees are unique and should definitely receive special care. Since the root balls are often heavy and cumbersome, it is important that they are not mistreated or dropped. Once the tree is home, it should be conditioned before being brought into a heated room. Leaving the tree upright in an unheated barn or garage for a couple of days should be sufficient. After the conditioning, the tree can be brought indoors and placed in a cool location away from direct sunlight. It is even more important with living trees that the location is away from heat sources such as wood stoves, fireplaces, and heater vents. Living Christmas trees will also need water, although not nearly as much as cut trees.

Prior to moving the tree inside, the root ball should be moistened and kept in a moist condition while the tree is displayed. The root ball should be placed in a bucket or a large pan to prevent soil and water from staining the floor. Living Christmas trees are fairly sensitive and should not be kept inside for more than 10 days.

Before removing the tree directly outside, it should be allowed to recondition in the same manner as when it was brought inside. After a couple of days, it should be ready to plant. If the ground is frozen or if the tree cannot be planted immediately, it should be placed in a sheltered area and the root ball heavily mulched. When planting, the hole should be dug about the depth of the root ball and 1.5 to 2 times the diameter. The tree should be placed in the hole, back-filled with the soil removed from the hole, watered, and mulched with straw, bark, or sawdust. The tree will remain dormant for the rest of the winter and then will start to grow normally with other vegetation in the spring.

Disposal of Trees after Christmas

A Christmas tree is a source of organic waste. Try not to put the tree out with the rest of the household

garbage to be carted off to a landfill. There are other alternatives to disposing of your tree. It could be placed in the backyard, adorned with bits of bread and suet, and used as a bird feeder during the winter. In the spring, the tree could be chipped for mulch or burned for fuel. Those with ponds have found that a couple of Christmas trees, properly weighted down, provide a good habitat for fish. In Charlottesville, the recycling center provides a place each year to dispose of your tree. They are then chipped into mulch.

Decorating with greenery

When I think of the person most knowledgeable about Christmas decorations and wreath making in the Charlottesville area, the name Janet Miller immediately comes to mind. Janet is a former flower arranger who decorated Monticello for 20 years and one of the main teachers of wreath making there as well. In a recent interview with Janet, she had several suggestions for mantles, dining tables and your front door. This is not a “How to” article but hopefully it will provide you with some pointers about materials, ideas and safety issues that will get you started on your own special creations. For a good “How to” article to make a wreath go to http://www.clemson.edu/extension/hgic. HGIC EC696

Wreath

A bold wreath on your front door during the holidays is the quintessential Christmas decoration. The wreath making class at Monticello is a great way for friends to join together and all come out with a unique wreath designed by you with the guidance of experienced teachers. They provide all materials (and I mean a lot of varied, beautiful materials). Sign up early as it fills quickly.

Of course doing it yourself at home is the most common and least expensive option. Janet suggests the easiest way is to start with a plain purchased wreath on which you add additional greenery and decorations. Boxwood will last the longest (note: to prevent spreading boxwood blight unintentionally, either burn or send to the landfill all boxwood trimmings). Magnolia is popular but a wreath made totally of magnolia will not last as long. It can be added as accents but be prepared to replace it as it browns and becomes dry.

The first and often the best place to look for holiday greenery may be in your own landscape. Greenery gathered from your own garden will be far fresher than any that you can buy. When gathering live greenery from your shrubs and trees, remember that you are actually pruning the plants. Distribute the cuts evenly around the plant in order to preserve its natural form. As you gather the material, place the stems in room temperature water to condition them prior to their use.

Add any gathered materials and attach to the wreath by using a glue gun and wire. Below are some suggested accents:

- Pine cones (sprayed gold or silver is an option)
- Apples
- Hydrangea(Best if picked before it turns brown)
- Cinnamon sticks
- Lemons or Limes
- Lotus seed pods
- Nuts
- Sweet gum balls
- Berries (Holly looks good but does not last) Try Nandina
- Cedar
- Pine
- Pomegranates
- Purchased wired bows
- Pyracantha

Dining Table Arrangement

Use any container that you like with or without oasis (the green foam). Bowls and trays are especially easy. Add greenery, pine cones, magnolia leaves spray painted, faux votive candles, apples or other fruit. Even some Christmas tree bulbs can be attractive. Avoid candles that may create a fire hazard if lit or cover with a hurricane lamp shade.

Mantel

Garland, purchased as fresh or artificial is perfect for a mantel. I have often just used cuttings left over from trimming the bottom of the tree. Intermingle Santas, artificial candles, faux berries, apples or other fruit.

Even paperwhites and poinsettias look great.

Be creative, enjoy the process especially if done with the entire family and most of all have a wonderful holiday.

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Winterberry Holly

By Patsy Chadwick | December 2015-Vol.1 No.12

As the days grow colder and autumn inevitably gives way to winter, the ornamental garden needn't be dull or boring. Of the many splendid shrubs and trees that offer color and texture to the winter landscape, *Ilex verticillata* is guaranteed to ignite your imagination and brighten your spirits. This deciduous member of the holly genus is better known as common winterberry holly. Clearly different from its evergreen relatives, winterberry holly sheds its summer foliage in late autumn exposing masses of densely packed red berries along bare stems. Whether displayed as a single specimen or in a mass planting, this shrub practically shouts: LOOK AT ME!! And so we do – with pleasure.

DESCRIPTION

Winterberry holly is native to the entire eastern half of North America. It can be found growing from Nova Scotia to Florida in bogs, swamps, damp thickets, low areas, and along ponds and streams. In wet sites in the wild, it may form large thickets or colonies from suckers. In dry soil, it remains a tight shrub. In the ornamental landscape, this holly prefers average to moist soil, but thrives in a wide range of soil types and conditions.

This slow-growing, multi-stemmed shrub typically develops an upright to rounded habit and grows between 5 and 15 feet tall. The leaves are typically two to three inches long, elliptic, toothed, and dark green. In the fall, the foliage turns yellow or, in some cases, maroon. The berries provide significant color and interest in the winter landscape.

Winterberry hollies are dioecious. In other words, the shrubs are either male or female. Both male and female plants produce flowers, but only fertilized flowers on female winterberry shrubs produce berries. The flowers appear either singly or in small clusters along the stems. Each blossom has a green ovule in the center. Flowers on male winterberries appear in large clusters with several prominent yellow anthers protruding from the center of each blossom.

Sources vary on the ratio of males to females needed for good pollination. In general, one male winterberry holly is adequate for pollinating three to six or more female plants. To ensure pollination, a male winterberry holly must be planted within 40 to 50 feet of a female winterberry holly. Because some males are early blooming and others are late blooming, the appropriate male must be in bloom at the same time as the female. If properly pollinated, the female flowers give way to a crop of bright red berries in late summer to fall. The berries normally persist throughout the winter (hence the common name) and often into early spring.

USES FOR WINTERBERRY HOLLY IN THE LANDSCAPE

- Winterberry holly is an excellent choice for a rain garden because of its ability to tolerate both moist and dry soils.
- Suitable for shrub borders, hedges, foundation plantings, and native plant areas, it looks particularly attractive grouped in mass plantings.
- While attractive in a mixed border, winterberry holly is particularly eye catching when planted in front of taller evergreens. The red berries contrast well against the dark green background. They also show well in front of fences and stone walls.
- Winterberries attract more than 40 species of birds, including cedar waxwings and robins, according to the Arbor Day Foundation website. Overwintering birds generally don't eat the bitter and astringent berries until their other food supplies are gone.
- If you have room in your landscape, plant several winterberry hollies so that you can clip the heavily berried branches for use in floral arrangements.

WINTERBERRY HOLLY CULTIVARS

Although winterberry holly is an attractive shrub, the species is infrequently sold commercially because many excellent cultivars produce larger, more abundant fruit. A few examples of commercially grown female cultivars and suggested male pollinators include:

- **'Berry Heavy®'** – Size: 6 to 8 ft. tall and wide. Just as its name suggests, this female cultivar produces abundant bright red fruit. Its shiny foliage takes on a purplish-bronze tint in autumn. Pollinator: Early-blooming 'Jim Dandy'
- **'Berry Nice®'** – Size: 6 to 8 ft. tall and 3 to 5 ft. wide. It produces deep-red berries in stark contrast to its autumn foliage. Pollinator: 'Jim Dandy'.
- **'Bonfire'** – Size: 8 ft. tall and wide. A hybrid between *Ilex verticillata* (North American) and *I. serrata (*Japanese Finetooth holly*),* this cultivar grows more rapidly than the species and produces masses of small red berries at a young age. Pollinator: 'Apollo,' 'Jim Dandy,' or 'Southern Gentleman'.
- **'Cacapon'** – Size: 6 to 8 ft. tall and wide. This cultivar has a nice upright rounded habit and is distinguished from other winterberries by its crinkled, glossy dark green leaves. It has abundant

bright red fruit and makes a great landscape plant with year round interest. Pollinator: 'Jim Dandy'.

- **'Red Sprite'** – Size: 3 to 5 ft. tall and wide. The smallest of the cultivars, this compact female bears abundant, large, bright red berries and densely spaced, dark green leaves. It is an excellent choice for a smaller garden or for a mixed border. It is also ideal for a mass planting or low hedge. Pollinator: 'Jim Dandy' or 'Apollo'.
- **'Sparkleberry'** – Size: 12 ft. tall and wide. Introduced by the United Stated National Arboretum, this is a hybrid of *I. verticillata* and *I. serrata*. A fast grower with an upright form, it produces generous quantities of large, brilliant red fruit that persist through the winter. Berries facing the sun may fade. Pollinator: 'Apollo' (a hybrid resulting from the same breeding program and the same cross as 'Sparkleberry').
- **'Winter Red'** – Size: 6 to 9 ft. with a slightly narrower spread. This female cultivar has an upright habit and is one of the most popular winterberries grown commercially. It produces abundant long lasting, pea-sized, bright red fruits that are very showy in the winter landscape. Pollinator: Late blooming 'Southern Gentleman,' 'Apollo,' or 'Raritan Chief'.
- **'Winter Gold'** –Size: 7 ft. tall and wide. If you're looking for something a little different, consider this yellow-berried female sport of 'Winter Red'. The berries initially ripen to a pinkish-orange color, which lightens with age. Pollinator: 'Southern Gentleman'.
- **'Apollo'** – Size: 10 to 12 ft. tall and wide. This upright male hybrid of *I. verticillata* and *I. serrata* was introduced by the U.S. National Arboretum and is the late-blooming pollinator of choice for 'Red Sprite,' 'Bonfire,' and 'Sparkleberry'. The new growth is burgundy red.
- **'Jim Dandy'** – Size: 5 ft. tall and slightly wider. This dwarf male clone is a pollinator for early flowering winterberries such as Berry Heavy®, Berry Nice®, 'Red Sprite,' 'Afterglow,' and 'Aurantiaca'.
- **'Southern Gentleman'** – Size: 6 to 9 ft. tall and wide. This late-blooming male clone is the pollinator of choice for late-blooming female clones, including 'Winter Red,' 'Winter Gold,' 'Cacapon,' and 'Sparkleberry'.

CARE AND MAINTENANCE OF WINTERBERRY HOLLIES

- Ideal Planting Time: Early autumn so that their roots can become well established before winter.
- Sunlight Requirements: Full sun to part shade. Full sun will result in better berry production.
- Moisture Requirements: Prefers medium to wet soils but will tolerate average garden soil. If planted in a drier site, they may need to be watered periodically during hot, dry weather.
- Soil pH Range: 3.8 to 6.0 or slightly acidic soil. They will not thrive in alkaline soil.
- Maintenance: None other than an occasional pruning to maintain size or to remove dead or damaged growth. Prune to shape in late winter or early spring before new growth appears.
- Propagation: Winterberries may be propagated from softwood cuttings. From early spring to midsummer, clip 6- to 8-inch long cuttings from the ends of green, pliable winterberry branches. Select cuttings from both male and female plants since both are needed for successful fruit set.

PROBLEMS

Winterberries have no serious insect or disease problems other than occasional leaf spots and mild powdery mildew on the foliage. Neither condition poses any significant problem.

Deer may occasionally browse winterberries but seldom severely damage them. Of the dozen or so

winterberries planted in my landscape south of Charlottesville, I have not observed any damage from deer browsing. However, I have observed damage to two of the shrubs caused by male deer rubbing their antlers on the branches to shed the "velvet." Fortunately, the shrubs recovered in one growing season.

SUMMARY

No matter which cultivar you select, winterberry holly is a glorious shrub worth including in your winter landscape. Better yet, choose several of them if you have room. This tough but beautiful, easy-to-grow shrub lights up the winter landscape with its festive and colorful berry display. Moreover, the birds will appreciate the berries over the winter months.

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The Ornamental Garden in December

By Patsy Chadwick | December 2015-Vol.1 No.12

Winter officially starts this month and the holiday season is upon us. Darkness comes early now and nighttime temperatures are definitely chilly. It's time to check all of the plantings in your ornamental garden to make sure they are well tucked in for the colder weather ahead. Venture out into your garden to tackle any remaining tasks on your **gardening "to do" list:**

- **Remove matted leaves** and any other debris that might harbor overwintering pests in your flower beds.
- **Remove weeds** from your ornamental beds. Common chickweed, henbit, purple deadnettle, and other "winter weeds" sprout in mid to late fall. Pulling these bad boys now will put you ahead of the weeding game come spring.
- **Make sure you have a good supply of sand or sawdust on hand.** As some plants are sensitive to de-icing salts, sand and sawdust are better alternatives for use on icy walkways near plantings.
- If you forgot to do this earlier in the fall, **drain all water hoses and store them** in a garage, garden shed, basement or other suitable place out of the weather. Don't forget to drain non-frost proof outdoor faucets.
- **Check for plants that have been displaced** due to soil heaving after the ground freezes. Replant them, making sure roots are well covered to protect them from freezing temperatures.
- **Watch for standing water in perennial beds** after long periods of rain or snow. Water that collects on the surface of the soil during winter will freeze and can damage perennials. If necessary, dig shallow trenches to help drain excess water away. Make a note to raise the flower bed in spring to improve drainage.

Now that you've tended to all of your outdoor chores, let's talk about **caring for your indoor plants**. During the busy holidays, it's easy to forget about houseplants. Rather than have them suffer in silence, here are a few reminders:

- **Make sure your houseplants have adequate light.** Turn them periodically so that they grow evenly and don't lean toward the light.
- **Increase humidity around houseplants** by misting often or placing the plants on a tray of moist pebbles. Cover delicate plants, such as maidenhair ferns, with a glass bell jar, cloche or terrarium. This makes it easier to care for the plant and can look quite elegant. Don't forget to put the plant on a tray or other waterproof surface to protect your wood furniture.
- **Water houseplants** during the winter months when the soil in the pot feels dry two inches down. Water thoroughly, allowing the excess water to drain away. Hold off on fertilizing your houseplants until spring.
- **Poinsettias** look their best over the holidays when you pay attention to their light, water, and room temperature requirements. They prefer bright filtered light. They will also thrive in a sunny south-facing window, but don't let the foliage press against a cold window pane. Water them regularly, checking to make sure the water drains away from the roots. They like evenly moist, but not soggy, soil. You can prolong the floral display by keeping the indoor temperature at about 68°F during the day and cooler at night.
- **Keep pets away from holiday plants such as poinsettias, mistletoe and holly.** Ingesting

poinsettia foliage is not normally life threatening to pets but the sap can cause mouth and stomach irritation as well as vomiting. Also, if the plant has been treated with a pesticide, the chemicals in the pesticide may cause more serious medical problems for a pet than ingestion of the sap. Mistletoe and holly berries are more toxic than poinsettias and can cause more serious health problems for pets.

- For **advice on selecting Christmas trees** and decorating for the holidays, be sure to read this issue's feature article on" Holiday Decorating with Fresh Greenery."

Last but not least, the holidays are a great time to **share rooted cuttings from your houseplants** with friends and neighbors. Plants make wonderful "hostess" gifts and are a nice alternative to sugary sweets or scented candles. If your friends are (gasp) not "plant people," they'll appreciate your thoughtfulness if you include a few plant care instructions with your gift.

HAPPY HOLIDAYS!!

Mycorrhizae Part II

By Cleve Campbell | December 2015-Vol.1 No.12

After reviewing last month's **Garden Shed** article on mycorrhizal fungi, I sat down at the PC and started doing a little Christmas shopping for my bride; what a more fitting gift than a couple of pounds of fungi to add to the garden. After gleaning a little general information from last month's article on the benefits of mycorrhizal fungi to plants including how the fungi:

- extends the plants root system allowing the plant to absorb nutrients better, particularly phosphorus,
- increases the plants ability to absorb water, making the plants more drought resistant,
- increases the life of root hairs by protecting the roots from diseases,
- improves the physical condition of the soil

I know it will be the perfect and unexpected gift-"the gift that keeps on giving". If you somehow missed reading last month's article, Mycorrhizae Part 1 or if you wish to review the introduction to this friendly alley, go back to the 2015 November Garden Shed issue.

I'm sure this will be the **perfect gift** and a little PC search revealed there must be a zillion fungi products on the market claiming to be the silver bullet, the fix all, from increasing crop production to equipping the plants with a Kevlar vest to protect your plants from an army of pathogens. Yes, I know it's the **holiday season**, the giving season, but being somewhat of a **frugal gardener,** I needed to do a little more research before I pull the trigger and throw a few bucks on a frugal purchase.

My first step is to determine what "variety" of mycorrhizal would benefit the vegetable garden. There are two types of mycorrhizal fungi that I had to choose from: **ectomycorrhiza and endomycorrhiza.** The ectomycorrhiza group includes hundreds of fungal species associated with shrubs and trees, such as pine, birch, hemlock and oak. These fungi, cover the surface roots with a mantle. I can exclude the ectomycorrhiza as a choice for the vegetable garden. (now if I was planting trees that would be a different story). (Brady)

The next type endomycorrhiza with the most important member or this group being **arbuscular mycorrhiza fungi (AMF).** When forming AMF, fungal hyphae (microscopic thin strings) actually penetrate the cortical root cell walls and once inside the plant cell, form small highly branched structures called arbuscules. These structures serve to transfer mineral nutrients from the fungi to host plants and sugars from the plant to the fungus. Most native and agriculture crops can form beneficial relations with AMF. I now have my fungi variety selected for the vegetable garden. (Brady)

My second step is to determine if my vegetable garden would benefit from an **arbuscular mycorrhizal fungi (AMF)** inoculant treatments. Numerous studies at Penn State have shown that arbuscular mycorrhizal fungi (AMF) can provide direct benefits to host crops, leading to increased crop production. As it turns out AMF can have a positive effect on most crops with the exception of spinach and brassicas such as broccoli and cabbage. A research project conducted by the University of California concluded that **organic tomato plants** infected with AMF out performed non-infected plants. A potato research project at Texas A&M found that **potatoes** treated with AMF increased phosphorus, iron and magnesium uptake, greater water uptake, as well as enhanced disease resistance, resulting in greater crop yields.

One of the issues for determining the need for AMF in any situation is they are microscopic and they occur in nearly all-natural and agricultural soils and readily colonize on many plant species. Herein lies a problem. The research articles reviewed often used potted plants with a sterile soil mixture or in field sites where the native AMF populations were very low. Sites were selected where soils were subjected to broad-spectrum fumigation or the soils that had been drastically disturbed such as subsoil layers being brought to the surface during construction activity and soils that had been left bare (fallow) for long periods of time. In those types of situations plants inoculated with AMF out performed the plants that were not inoculated. (Brady)

In healthy biologically active soils little difference was noted between AMF inoculated plants and non-inoculated plants. One possible reason proposed that in soils with sufficient phosphorus levels, the plant was able to supply their needs without the symbiotic relations of the fungi and thus did not form a relationship.

(Brady)

Well, as it turns out, soils in a **natural setting** are full of beneficial soil organisms including mycorrhizal fungi. Soils that are high in organic matter, well drained, low to moderate phosphorous levels and minimally tilled, usually have a healthy and abundant network of mycorrhizal fungi. (Plaster)

Fungicide applications can kill mycorrhizal fungi. In addition, frequent tilling breaks apart the fungal networks reducing their effectiveness and high phosphorus levels render the fungi useless. All of a sudden that vision of last spring's finely tilled seed bed was not such a fond memory, not to mention the numerous trips to the garden in the late spring and summer to chop and till all those weeds, and the late fall tilling to put the garden to bed, OUCH! (Plaster)

Areas with untasseled corn were fallow areas
Photo courtesy of Penn State Extension

Did I mention that I never got around to planting a cover crop last fall? That didn't help the mycorrhizal population in my garden either, as uncovered soil (fallow) can reduce mycorrhizal populations. Remember, mycorrhizal fungi depend on host plants for their nutrition, thus planting a cover crop can help to maintain their population. (Brady)

One method of determining if my soil has an adequate population of mycorrhizal fungi is by performing a soil test. However, it requires a biological test not a chemical test, that measures pH levels, phosphate, potassium, magnesium levels and other chemical properties. An online search on "soil biology tests" revealed numerous commercial labs that perform the test. The price ranges from $100-$400 bucks depending on the lab and the number of biological critters you wish to be identified. The second option is to do a practical test next spring, such as treating potatoe, tomato, pepper and lettuce crop with mycorrhizal fungi and monitor the difference between the inoculated and the non-inoculated crops. If the inoculated plants are more productive than untreated plants, then it becomes obvious. I have a mycorrhizal fungi deficiency in my garden.

I recall seeing inoculants listed in various mail order seed catalogs and online seed catalogs, so I am just a click away from the perfect gift. Could this be any easier? A trip to one of my favorite online catalogs and a quick search on inoculant and I was done. I was able to locate the inoculant products on the first click. My quick search resulted in several choices: one for peas, lentil and vetch, a second choice for soybeans, and third choice " a combination" for peas beans, vetch and more. That is when the red flag went up. I had just read a publication that AMF can have a "positive effect on most crops". The seed catalog said nothing about tomatoes, corn, and peppers or referred to any other crop other than legume crops. Hummm, what's the deal?

After doing a little research, it turns out that legume inoculants and AMF are totally different, legume inoculants are a form of bacteria and AMF, well they are a form of fungi and play an entirely different roll when they form symbiotic relationships with plants. (Plaster)

Legumes have the ability to form mutually beneficial relations with certain soil bacteria of the type or genius *Rhizoba.* The benefit to the plant is that these bacteria can take (fix) nitrogen from the air found in soil air spaces and make it available to the plant via symbiotic nitrogen fixation. The amount of nitrogen fixed can

meet the needs of the plant and leave nitrogen in the soil for the following crops. Mycorrhizal fungi (AMF) aid the plant by foraging for water and nutrients in the soil.

Why the legume inoculants choices in the seed catalog? Well, it appears that Rhizoba bacteria are picky little critters and are fairly specific about which legume species they will select as a host to form nodules. So if you are selecting legume inoculants it's important to select the correct type for your legume. (Plaster)

Now that I have determined that legume inoculants and AFM inoculants are two different critters, a quick online search for mycorrhizal (AFM) products resulted in locating numerous products on the market. Digging a little deeper I discovered that Cornell University has performed numerous research studies on a mycorrhizal strain, *Trichoderma barzianum* strain T-22 sold under the trade name of T-22.

The studies at Cornell University concluded that this strain (T-22) of mycorrhizal fungi increased plant growth and yield by increasing nutrient uptake and fertilizer efficiency. The plants increased drought tolerance was attributed to increased root growth in the treated plants. In addition, according to Cornell, T-22 was shown to act as a biocontrol for certain plant diseases: tomato transplants treated with T-22 at the start of the growing season were substantially less susceptible to early blight than the untreated plants.

Now back to my AMF experiment, I must be vigilant in designing my AMF experiment by selecting the same vegetable cultivars for my test, because final results may vary as not all vegetable cultivars respond to AMF inoculation in a consistent matter. Research performed on green house lettuce suggested that a green cultivar (Batavia Rubia Munguia) reacted in a more positive way to AMF inoculants than did a red lettuce cultivar (Maravilla de Verano). Similar research on the effect of AMF inoculants on tomatoes suggested that different cultivars of tomatoes performed differently when treated with AMF inoculants.

What's not to like about mycorrhizal fungi? They perform like an organic biofertilizer, they forage for water, phosphorus and other nutrients that plants cannot reach, resulting in healthier and more productive plants and they are organic. Next spring, when I roll out the tiller or bag of commercial fertilizer I'm going to think about my fungi friend in the ground and do a lot less tilling and a lot less fertilizing because you just don't do harmful things to a good and valuable friend.

Thanks for stopping by The Garden Shed, and we The Garden Shed team hope you and your family have a safe and joyful holiday season. By the way if you have run out of gift ideas, why not consider a bag of mycorrhizal fungi because it is the natural gift that keeps on giving, Happy Holidays!

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December Tips and Tasks for the Edible Garden

By Cleve Campbell | December 2015-Vol.1 No.12

Happy holidays from The Garden Shed. You've completed all your Christmas shopping and done all your decorating and now looking for a few gardening tasks. Right? The following is our December edible gardening tasks and tips:

- Looking for a gardening gift for that friend that has everything? Consider a gardening journal. Winter is a good time to start a garden journal and document all the trials and triumphs of the gardening season. When the mailbox gets deluged with seed catalogs for next season, your friend will have a record to refresh their memory about what seeds to order and which to avoid.
- If your soil test shows a need for raising the pH, apply dolomitic limestone now so the winter rain and snow can move it into the ground.
- If you have run out of sage, or just want a different flavor, substitute savory or rosemary in your turkey recipe.
- Use a combination of red and green sweet peppers frozen from last summer's garden to give holiday food a seasonal flair.
- If you are planning to lay out newspapers as mulch next spring, glue them end-to-end this winter and store them in rolls. When needed, the paper mulch unrolls easily and won't be lifted by the wind before they can be anchored.
- There are several herbs that can be grown in pots in the home during the winter. Parsley is one of the most widely grown herbs in home gardens and can serve as a houseplant during the winter. The plant will provide fresh green leaves for garnishing or flavoring for egg dishes, soup, fish or potatoes. Chive plants can also be grown in pots during the winter. The leaves are used to season soups, salads and stews. Finely chopped leaves add delicious flavor to sour cream for dip or salad dressing. Plant seeds in pots filled with rich, well drained, and sterilized potting mix. Cover the pots with plastic bags or clear wrap until germination occurs. Put the pots in a warm room, in a sunny, southern window and keep the soil moist.
- You still have time to make herb vinegars with chives, shallots, garlic or any herbs on your windowsill. Use approximately 4 ounces of fresh herbs to 1 quart of wine or rice vinegar. Allow the herbs to infuse for at least two weeks.
- Don't forget to use some of those vegetables still out in your garden: carrots, turnip greens, kale or other hardy vegetables.

Thanks for stopping by The Garden Shed and we look forward to your visit next month. The Garden Shed team hopes you and your family have a safe and happy holiday season.

Source:

Adopted from *The Virginia Gardner* by Diane Relf

Winter Lawn Care

By Melanie | December 2015-Vol.1 No.12

By now, the mowers have been put in the shed and the lawn can be moved to the bottom of the list for the winter time. There are a few items though to remember during this time.

- Keep the lawn clear of lawn furniture, toys or debris
- 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.
- Consider servicing your lawn mower now in preparation for spring and avoid the rush at the repair shop.

Now Bring Us Some Figgy Pudding

By Cate Whittington | December 2015-Vol.1 No.12

Many of us grew up memorizing Christmas carols without giving much thought to what the lyrics meant. As I contemplated a seasonal recipe for this month's newsletter, the familiar verse from the carol, "We Wish You a Merry Christmas," rang in my ears and I began to wonder, "Just what is figgy pudding?"

I contacted an English friend of mine who said, without hesitation, "It's the same as Christmas pudding," the time-honored traditional dessert that is a Christmas day staple of many British tables, as well as my own growing up. Mother always ordered hers well in advance of Christmas. It arrived in a tin, which was opened and set out to steam during dinner. My job as my mother's apprentice was to mix together butter and sugar to form a hard sauce, topped with a sprig of holly and passed around the table with the fragrant mounded dessert.

Hmmmm. I asked myself if Christmas pudding, plum pudding, and figgy pudding were all the same thing. Naturally, I turned to Google to find out.

In a sense, they are. This traditional English dessert dates back to a savory dish called "frumenty." In medieval England, meats, grains, and vegetables were combined with wine to produce something more akin to a soup or porridge. Fruits and spices, added to the mix and stuffed into animal stomachs, acted as preservatives over the long winter months. The dish evolved across centuries into the Victorian cake-like sweet and boozy dessert that bears the name Christmas Pudding or Plum Pudding today. Suet, brown sugar, dried fruit, candied peel, eggs, breadcrumbs, and copious amounts of alcohol are twice boiled and steamed in a large bowl, before being ignited with brandy to the great delight of guests gathered around the holiday table.

Beginning in the 19th century, households across England traditionally made figgy pudding on the Sunday before Advent, commonly known as "Stir-Up Sunday." Some accounts suggest that every family member made a wish while taking a turn whisking the ingredients together.

The web contains quite a variety of recipes for figgy pudding. I tried out several of the ones that did not require a month-long waiting period, including one made with a mix for carrot cake. The recipe I am including here bears no resemblance to the dense fruit dessert delivered in a red and black plaid box to my childhood door every Christmas. Nevertheless, it is delicious and easy to make. I have printed it exactly as it is on the website, but I cut the sugar to 1/2 cup and added some cinnamon, nutmeg, and allspice to mine. I think it would be more authentic without the chocolate, but I left it in. The resulting taste was a little like chocolate chip muffins! Be forewarned that this recipe can easily fill 12 ramekins, not 4 as the contributor suggests. Loaded with butter and sugar, this is no dessert for the calorie conscious. While the caramel sauce is yummy, I found it a bit sweet and unnecessary, especially if topped with cream. Enjoy!

Warm Sticky Figgy Pudding

Ingredients

1 1/2 cups chopped dried pitted dates

1/2 cup chopped dried figs

2 cups water

1-teaspoon baking soda

100 grams (3 1/2 ounces or 7 tablespoons) butter, softened

1-cup superfine sugar

2 eggs

2 1/2 cups self-rising flour

75 grams (2 1/2-ounces) dark chocolate, grated

Butter, for coating ramekins

Ice cream or whipped cream, for garnish

Sauce

2 cups brown sugar

2 cups heavy cream

200 grams (7-ounces or 14 tablespoons) butter

Fresh figs, quartered, for garnish

Vanilla ice cream, optional

Whipped heavy cream, optional

Directions

Preheat the oven to 350 degrees F.

Add the dates, dried figs and water to a medium saucepan and bring to boil over medium heat. Remove the pan from the heat and stir in the baking soda. Let cool for about 5 minutes, then add to a blender and puree.

Using a hand mixer, cream the butter and sugar in a large bowl. Add the eggs and beat well. Fold in the flour, the pureed date mixture and the chocolate.

Put the mixture into 4 buttered, 1-cup individual ramekins, filling halfway or slightly under. Put in the oven and bake for 20 to 25 minutes.

Prepare the sauce by stirring the sugar and cream in a medium saucepan over low heat. Simmer until the sugar dissolves. Raise the heat and bring to a boil, then reduce the heat and simmer for 5 minutes. Add the butter and stir until incorporated.

Remove the ramekins from the oven and let stand for 10 minutes. May be served in the ramekin or unmolded onto a small serving plate. With paring knife cut a cross in the top of the puddings for the sauce.

Pour the sauce into the cross in the center of each pudding, then pour more sauce over the puddings and allow it to soak in slightly. Top with fresh figs and vanilla ice cream or heavily whipped cream. Serve warm.

Recipe courtesy of Jade Thompson Warm sticky figgy pudding recipe

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