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Our National Flower, The Rose

By Cleve Campbell | June 2015 - Vol. 1 No. 6

This little adventure involving the rose began several months ago when my wife and I along with several friends were invited to a neighbor's house for dinner. After a wonderful dinner, our host went to the closet and dug out an old beat-up box that contained the game "Trivial Pursuit.". Some of you may recall this trivia game. The one question that stumped all of us was "What is America's official national flower?" There were all kinds of guesses, but no one got the correct answer. The answer: the rose. So, friends, the rose is right up there with the bald eagle.

Later that night on the short ride home, my wife suggested that we plant a "rose bush." Now I must admit that I had heard that roses are high maintenance, prone to diseases and pests, and require a lot of pruning. Well, I thought, that's just what I need — another high- maintenance, time-consuming project. So I meekly asked, "Why do we need a rose bush?" To which my bride responded, "Roses are beautiful and since it is the national flower, we should have a couple." Well, it must have been that last glass of Cote du Rhone wine that made me reply, "The bald eagle is our national bird, but we don't own one of those! And matter of fact, it's illegal to own one." I can still feel the glare in the car as my wife responded, "No, I don't have an eagle; just a turkey." Needless to say, the rest of the trip home was relatively quiet.

Well, my only hope in getting out of the rose-shopping trip was to prove that the rose is not our national flower. No such luck. In 1986 Congress enacted Public Law 99-499, which decrees that "the flower commonly know as the rose is designated and adopted as the national floral emblem of the United States of America…." What? Didn't they have gridlock in Washington back in the 1980's? Well, apparently they did, since it appears that there had been numerous debates between supporters of the rose and supporters of the marigold. Unconfirmed rumors suggest that without the support of a national floral society and their work in organizing a massive pro- rose grass roots movement to champion the rose, the majestic marigold might be our national flower today.

Well, you guessed right — off to the local nursery I went to make a rose bush purchase. I was greeted at the nursery by a familiar voice asking, "How may I help you?" When I said that I was looking for a couple of rose bushes, I got that dreaded response: "What kind?" Since I now knew that the rose was our national flower, I lamely responded, "I was thinking along the lines of red, white and blue."

"Okay," responded the clerk, "we have a good inventory of hybrid teas, floribundas, grandifloras, climbers, and Knock Out's. What specifically were you looking for?" I could see that this rose purchase was not going to be as easy as I had figured. I had no clue what he was talking about, so I quietly responded, "Thanks for the help. I think I need to go home and talk to my wife. I'll be back later."

On the way home I kept repeating those unfamiliar terms: hybrid teas, floribundas, grandifloras, Knock Out's, climbers. What in the world was he talking about? Clearly, I needed to do a little homework before selecting a rose.

As it turns out, there are 3 major categories of roses: species roses, old garden roses, and modern garden roses.

Species Roses

Species or wild roses are the ancestors of the cultivated roses, and they continue to flourish today. It is

estimated that there are 150-200 non-hybridized or wild roses in existence today. They range in size from ground covers to shrubs to climbers. They are hardy and disease-resistant. They are self-pollinating, producing seedlings that (unlike hybrids) duplicate the parent plant. The flowers can be very large and single, or small and in clusters.

Species roses often have only 5 petals and all show yellow stamens at the center. The petals can range in color from white to pink to crimson. Almost all bloom only once, in early summer. The availability of species roses is limited, with perhaps the most available being *Rosa rugosa* because of its superior hardiness, disease resistance and extremely easy maintenance. The species have been widely hybridized.

Old Garden Roses

The American Rose Society defines an "old garden rose" as a rose that was known before 1867, the date that the first hybrid rose was introduced. These are the roses found in your grandmother's garden, not the hybrids commonly seen in modern landscapes. This group of roses, also known as "antique" roses, prevailed in European gardens in the eighteen century. The roses in this class include damask, Gallic, musk, China, tea, alba, centifolia, Portland, noisette, Bourbon and hybrid perpetual. Each class of Old Garden Rose can have hundreds or thousands of cultivars. For example the hybrid perpetual was thought to have over 4,000 varieties available in the 1880's.

The size of old garden roses range from small single blooms to huge doubles that may reach 6 inches (Bennett). Often overshadowed by hybrid tea roses in this century, old garden roses appear to be experiencing a comeback. The revival is in part because of historic interest, color and fragrance. Unfortunately, one of the characterstics most closely associated with roses — fragrance — was often hybridized out of the modern rose in favor of flower color and shape. Also, old garden roses often retained more resistance to insects and disease problems, while these attributes may have been neglected in modern hybrids developed primarily for showy blooms. Many old garden roses show a resistance to black spot and other diseases but resistance varies considerably among varieties. Most old varieties tend to be long lived and stable and often require less fertilizer, spraying and nurturing than the modern hybrids. Well, what's to improve on? For one thing many of the old garden roses only bloomed once in a season, and often the rose plants were vigorous and sprawling, requiring lots of room. The blossoms, often were single, not the more desirable double. Also, the stems were often short and not suitable for cut flower arrangements.

Modern Roses

The Modern age of growing roses began officially when a new class of roses was developed from a tea/hybrid perpetual cross. The year was 1867; the hybridizer was Jean-Baptiste Guillot, and the rose was the hybrid tea. Thus began the modern rose era. The hybrid tea rose is the rose most thought of when one mentions roses or Valentine's Day. It is a favorite of most florists and is thought to be the most popular rose sold; however, the hybrid tea rose is just one of many classes of the modern rose.

Hybrid Tea Roses– What's not to like about a hybrid tea rose? Hundreds if not thousands of cultivars have been developed since they were first introduced in 1867. They are in almost continous bloom during the season. In general the buds are pointed, long and borne one per stem. When you ask the florists for long stem roses, it's probably going to be a hybrid tea rose. The size of the plant can range from 3 to 7 feet. Hybrid teas are high maintenance; they require a regular program to prevent and control black spot and mildew diseases. They also require constant pruning during the growing season. .

Polyantha is a rose that descended from China roses and an Asian species rose called Rosa multiflora. Polyanthas are very hardy and produce large clusters of small flowers, which may be single or double and white, pink, yellow and even orange in color. Polyantha roses tend to have dwarfed bloom and bush features.

It is hardy, disease resistant and is a continous bloomer thoughtout the growing season.

Floribunda is a cross between a polyantha and a tea rose. Plants are vigorous with large masses of flowers that resemble miniature hybrid teas. Clusters are abundant and provide a mass of color. Floribundas are elatively short compared to the hybrid tea, about 2 ½ to 3 ½ feet tall.

Grandiflora This group of roses is a cross between hybrid teas and the floribundas rose. Grandiflora rose plants are generally taller than hybrid teas and bear five to seven blooms on each stem. They make excellent cut flowers and bloom more frequently than hybrid teas. Like hybrid tea roses, grandiflora roses must be monitored for insects and diseases.

Miniature roses generally grow no more than 12-18 inches in height, with some cultivars reaching a maximum height of 6 inches. They are also sometimes referred to as patio roses. They are natural (genetic) dwarfs and have become popular in recent years. Their leaves and flower characteristics are smaller versions of the larger rose types such as hybrid teas or floribundas. Miniatures are grown on their own roots rather than grafted like the larger roses. Their cultural requirements are similar to those of other plants with the exception that they require less space. They make excellent edging plants, especially in front of large plants. They can also be grown in containers indoors with special care. Miniatures are heavy bloomers and produce roses throughout the growing season.

Climbing roses are vigorous growers that send out long shoots or canes that can be trained over fences, arbors, or trellises. They are grouped into several types including ramblers, everblooming, climbers, climbing hybrid teas, climbing floribundas, pillar, and creeping.

Shrub or landscape roses is a catchall category for those roses that don't fit into other categories. In general, shrub roses are very hardy, disease resistant and require little maintenance, depending of the variety. They can vary in height, from 4 to 12 feet, with many canes and thick foliage making them ideal for hedges as well as background and mass planting. David Austin roses and Knock Out Roses fit into this category.

The American Rose Society offers the following advice on selecting a **planting location** for your roses:

Take time to check out the location before you plant your roses. They need at least 6 hours or more of direct sun during their growing season. Morning sun is better because it dries off the dew quickly and helps prevent diseases. A heavily-shaded area will result in foliage growth but few flowers; mildew and black spot diseases are more prevalent in shady areas.

Good air circulation is essential. It aids in rapid evaporation of morning dew, thereby aiding in disease control.

Avoid planting roses near trees and shrubs that have vigorous root systems that can rob you roses of water and nutrients. Roses are poor competitors against this type of intrusions.

Roses prefer slightly acid soil with a pH range of 6.0 to 6.5. Take time to do a soil test. You can get a soil testing kit from your local extension office.

Roses love water but do not like wet feet. Good drainage — both subsurface and surface — is essential. Think about installing a raised bed.

Thanks for joining us in The Garden Shed. Hope to see you again next month.

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Tomato Diseases

By Cleve Campbell | June 2015 - Vol. 1 No. 6

As the days grow longer and the summer heats up, I wait anxiously for that first ripe, sun-warmed, sweet tomato. For many of my gardening friends, myself included, summer really doesn't start until that first summer-ripened tomato is plucked from the vine.

One thing I have learned about growing tomatoes over forty years of gardening is that many things can go wrong in the tomato patch; some can be fixed and some can't be fixed, and no tomato crop is perfect. Growing tomatoes is not for the gardener seeking perfection. A certain amount of loss is normal, and just like the stock market, some years are more enjoyable than others.

Over the years I have found that there is little point in chasing perfection with chemicals. Many problems can be prevented if tomato varieties are carefully chosen and properly cared for; they are less susceptible to disease and pest problems. And one important lesson I have learned is that healthy plants don't always start, stay or end that way. Even in the most challenging year, I try to remember: problems in the tomato patch are an opportunity to learn and to prepare for next year. And the most important thing I've learned is that even in a bad year, those garden tomatoes sure taste a lot better than those from the supermarket.

This month in The Garden Shed we are going to take a look at some common tomato diseases that occur in Virginia. They include: early blight, septoria leafspot, verticillium and fusarium wilts, late blight, tobacco mosaic virus and bacterial spot. One common cultural or physiological disorder — blossom end rot — will

also be reviewed.

Early Blight

Early blight (VCE Publication 450-708), which is caused by the fungus *Alteraria solani*, is common in Virginia. It occurs to some extent every year wherever tomatoes are grown. Don't be confused by the name "early" as the disease may occur at any time during the growing season. Early blight causes irregular, brown leaf spots (lesions) that range in size up to ½ inch in diameter.

One of the first symptoms of early blight is the appearance of dark spots on the lower more mature leaves: concentric rings in a bull's eye pattern that can be seen in the center of the diseased area.
Photo: Paul Bachi, University of Kentucky, Bugwood.org

The most important diagnostic indicator of early blight is the formation of dark, concentric rings within the lesion, giving the spots a target-like or bulls eye appearance, and often causing the leaf to turn yellow, dry up, and fall off. The lesions initially appear on the lower, older leaves near the base of the plant and can progress rapidly up from the lower foliage to new growth during wet weather. Early blight may also produce symptoms on the plant stems and fruit. Dark, sunken, leathery lesions appear on the stem-end of the fruit. On older fruit, these lesions reach considerable size and the rot extends deep into the flesh of the fruit. Heavily infected fruits usually drop to the ground. Other vegetables in the garden that are susceptible to early blight include: potatoes, peppers and eggplants.

The fungi responsible for this disease can survive up to a year in the soil as well as in infected vine residue, seeds, and weeds left in the garden over the winter. In the spring and summer, spores of these fungi can be splashed or blown to tomato leaves. Warm temperatures, abundant rainfall and high relative humidity favor disease development. The disease is more aggressive when plants are weakened or stressed by poor nutrition, drought or by the wounds of pests.

***Early blight** migrating from the bottom leaves to the top of the plant. Photo: Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org*

Septoria Leaf Spot

Septoria Leaf Spot is caused by the fungus, *Septoria lycopersici*, characterized by several small, gray, round leaf spots with dark borders. A few black, pinhead dots may be seen within the spots.

Septoria leaf spot. Photo: Bruce Watt, University of Maine, Bugwood.org

Like Early Blight, the spores survive in residues from diseased plants. Septoria leaf spot can occur anytime during the growing season. Septoria leaf spot diseases first develops on the older leaves nearest the ground and continues upward on new leaves as the growing season progresses. Heavily-infected leaves may scorch and wilt, giving the plant the appearance of a wilt disease. The fruits are rarely infected; however, the leaf loss reduces fruit yield and quality, and the exposed fruits are more susceptible.

Control of Early Blight and Septoria Leafspot

1. Remove all infected plant material (including infected fruit) from the garden and destroy it. Never compost plant material suspected to be infected with Early blight or Septoria leaf spot.

2. Both early blight and septoria are soil-borne diseases, so whenever possible **do not plant tomatoes in the same place year after year.** If not possible to rotate to a different plot, rotate to a different section of the garden; if possible, avoid planting in areas where potatoes, peppers or eggplants were planted in the prior year.

3. **Consider using stakes or wire cages** to support tomato vines. By keeping the vines off the ground you can reduce the chance of diseases by reducing soil splash on the leaves and fruit. Caged plants are less prone to the spread of disease from plant-handling than staked plants. Why? Staked plants are handled more frequently than caged plants, and that handling results in more open wounds, which are a way in for diseases.

4. **Give your tomato plants space** — at least 3 feet — to allow good air circulation, which will reduce the humidity around the plant. Both early blight and septoria leaf spot are more aggressive in a humid environment.

5. **When pruning tomatoes, disinfect your pruning tools** frequently to avoid spreading spores from plant to plant.

6. **Healthy plants tend to resist diseases** better than plants stressed from lack of water or nutrients. Tomatoes planted in well-drained and properly fertilized soil, will be less prone to early blight and infection. As a general rule, at midseason, full-grown tomato plants require about 1 inch of water per week. Add water gradually, allowing the water to soak into the soil. **Avoid overhead irrigation**, which can lead to an increase in diseases. Watering early in the day will allow the plants to quickly and thoroughly dry. Do not allow the soil to become so dry that the plants wilt. Avoid fluctuations of too much and then too little water. Adding a layer of organic mulch such as straw, leaves or grass can reduce water evaporation, help reduce weeds and reduce soil splash when it rains. Avoid using grass clippings from a lawn recently treated with herbicides.

7. **Try planting early blight resistant tomatoes.** Tomato varieties suggested to be early blight resistant by Virginia Cooperative Extension Publication 450-708 include Mountain Fresh, Mountain Supreme and Plumb Dandy. When purchasing seeds or plants, look for the symbol “A” on the seed packet or plant label, which denotes resistance to Alternaria solani or early blight. Remember, resistance in vegetable varieties does not mean they are completely immune to those specific diseases. It suggests a specific variety has greater tolerance to a particular disease. Disease-resistant varieties may still be affected by the disease, but they typically have less damage than a non-resistant variety.

Late summer is a great time to look at disease resistant varieties, to see how they react to disease pressure and how productive they were. Presently, the Virginia Cooperative Extensive does not have a recommendation for Septoria Leaf spot resistant tomato varieties.

Late Blight

Late blight (VCE Pub. ANR-6) is caused by the fungus-like organism *Phytophora infestans* and is a very destructive disease in tomato and potato crops. The pathogen is best know for causing the devastating Irish potato famine in the 1840's, resulting in the deaths of more than 1 million people and causing another million people to leave Ireland. In many areas of Virginia, this Late blight is not generally an issue, however; in 2014 there were reported Virginia outbreaks in Floyd, Rappahannock, Loudoun Counties.

The late blight pathogen attacks all above ground parts of the tomato plant. The first symptoms of late blight on tomato leaves are irregularly-shaped, water-soaked lesions, often with a light halo or ring around them. Unlike early blight and septoria leaf spot diseases, these lesions usually begin on the younger, more succulent leaves in the top portion of the plant canopy and then migrate down the plant to the lower leaves.

Late Blight
Photo: Gerald Holmes, California Polytechnic State at San Luis Obispo, Bugwood.org

During periods of high humidity, white cotton growth may be visible on the underside of the leaf. Spots are visible on both sides of the leaves. As the disease progresses, lesions enlarge causing leaves to brown, shrivel and die. Late blight can also attack tomato fruit in all stages of development. Fungal garden spores are spread between plants and gardens by rain and wind. The fungus' ideal weather is temperatures in the upper 70s F and high humidity. Complete defoliation can occur within 14 days under ideal conditions.

Unfortunately, there is no cure for Late blight. Once you observe the symptoms, all infected plants should be removed from the garden. Never compost the plants. Instead, burn them or place them in a large plastic bag and place it in the sun to bake for a few days before putting it in the trash can.

Late Blight
Photo: Edward Sikora, Auburn University, Bugwood.org

Verticillium and Fusarium Wilts:

Verticillium wilt is a disease caused by a fungus- *Verticillium albo-artum* that attacks over 200 plants, including tomatoes, potatoes, eggplants, strawberries and raspberries. The fungus is soil-borne and

can reside in the soil for many years after it is contaminated; therefore, rotating crops is essential to controlling this disease. The fungus enters the plant though the feeder roots and grows water-conducting vessels (Xylem) in the stem. As the vessels become clogged and collapse, the water supply to the leaves is blocked. The first symptoms usually appear on the older bottom leaves. The leaves become yellow, dry up and drop prematurely. The upper shoots may also wilt during mid-day. Leaf tips curl upward at the margin and defoliation may continue up the plant. At an advanced stage of infection, the internal portion of the stem at the base of the plant will appear dark and discolored. The disease may continue until the plant is wilted, stunned or dead.

Verticillium Wilt
Photo: Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org

Fusarium Wilt

Fusarium : Like verticillium wilt, fusarium wilt is a caused by a fungus that is soil-borne and passes into the feeder roots and moves upward in the xylem of the stem, blocking the water-conducting vessels and causing the wilting of the leaves. The first indication of the disease in small plants is the drooping and wilting of lower leaves with a loss of green color followed by wilting and death of the plant. Often leaves on only one side of the stem turn yellow at first; yellow leaves gradually wilt and die. The stems of wilted plants shows no sign of soft decay, but when the stem is cut lengthwise. The woody part next to the green outer cortex shows a dark brown discoloration of the water-conducting vessels.

Fusarium Wilt
Photo: Edward Sikora, Auburn University, Bugwood.org

Unfortunately, once a tomato plant shows symptoms of a wilt disease, it cannot be cured of the problem. It should be pulled up and removed from the garden. Removing old and diseased plant debris during the growing season and at the end of the growing season won't eliminate it the next year, but can help reduce the population of the diseases that overwinter in the soil over time. Because verticillium and fusarium wilt fungus all survive in the soil for several years, it will be hard to prevent the disease each year. Crop rotation can help but is often of limited value in the home garden because of limited space. If you experience wilt problems this year, if at all possible, avoid planting tomatoes in the same spot next year. Along with avoiding the infected area next year, you need to avoid planting plants in the same family, such as peppers, eggplant and potatoes. These vegetables are all closely-related and can be infected by similar diseases. If you have wilt problems in a raised bed, one solution may be to remove the contaminated soil and replace it with new dirt.

Doing battle with verticillium and fusarium diseases takes some careful planning at the beginning of the growing season when selecting varieties and deciding where to plant in order to avoid infected areas. When selecting which tomato varieties to grow, select the ones that are disease-resistant. How? Well, when you look at a plant label or seed packet, look for the letters that serve as a code for which disease it is resistant to. Verticillium wilt resistance is represented by the letter "V" and fusarium wilt resistance is indicated by the letter "F." You will find that some varieties have resistance to more than one disease, while others may have no resistance at all. A photo of a comparison of a resistant plant and a non-resistant plant to fusarium wilt may be viewed at the following link, https://extension.umd.edu/growit/fusarium-wilt-tomato-vegetables.

The recent interest in growing heirloom tomatoes may result in an increased incidence of fusarium and verticillium wilts as generally these plants are less disease-resistant than hybrid tomatoes. However, in recent years a movement has been underway to graft the tops of heirloom tomato plants to rootstock that is disease resistant. Heirloom-grafted tomato plants have recently become available at several local nurseries and through several mail order seed catalogs. The following link provides additional information on grafted tomato plants: www.ces.ncsu.edu/fletcher/programs/ncorganic/research/grafting_techniques.pdf

Tobaccoc Mosaic

Tobacco Mosaic Virus

Tobacco Mosaic (virus): Symptoms are intermingled patches of normal and light green or yellowish colors on the leaves of infected plants. Tobacco Mosaic damages leaves, flowers, and fruit, causing stunting of the plant. Several strains of the virus are known to cause different symptoms. The virus is highly infectious and readily spreads by any means, even in a minute amount of sap. The most common means of transmission is by handling contaminated plants. The virus may also be present in certain types of tobacco; therefore, use of tobacco may also be a source of the virus.

Presently, there are no known efficient chemical controls that eliminate viral infection from plant tissues once they do

Photo: University of Georgia, Bugwood.org

occur. Tobacco mosaic virus is the most persistent plant virus known. It has been known to survive up to 50 years in dried plant parts. Therefore, sanitation is the single most important practice in controlling tobacco mosaic virus.

Control of Tobacco Mosaic Virus:

1. Remove and destroy infected plants. Pull plants with mosaic symptoms immediately. Remove the debris from the garden area and destroy.
2. Keep your garden weed-free. Some weed may be harboring the virus. These represent potential sources of the disease.
3. Always wash you hands thoroughly and disinfect tools. Before handling plants, wash with soap and water, especially if you use tobacco products.
4. Plant resistant varieties of tomatoes. Varieties that are resistant to tobacco mosaic virus are labeled “T” resistant.

Bacterial Spot:

Bacterial Spot can involve several different species and strains of bacterial. Some bacteria attack both tomato and pepper while others only attack one crop or the other. Bacterial spot can lead to severe damage to tomato and pepper plants. The pathogen attacks all parts of the plant — leaves, flowers, fruits and stems — causing spots or blemishes on these plant parts; however, most damage occurs on the leaves. Outbreaks of bacterial spot can result in leaf drop and poor fruit-set in the garden. Defoliation due to leaf spotting can increase the incidence of sunscald on fruit. In addition to the poor appearance of the fruit, fruit injury allows entry of secondary fruit-rotting organisms, causing further damage to the fruit.

The disease begins on older leaves at the base of the plant. Many small dark spots may first appear; the areas between the spots often turn yellow. Leaf spots often appear on both sides of the leaves. The spots quickly spread and kill the leaves. Dead leaves usually stay attached to the tomato plant.

Bacterial Spot
Photo: Howard F. Schwartz, Colorado State University, Bugwood.org

Fruit blemishes begin on green fruit as small water-soaked spots that are one-eight to one-fourth inch in diameter. Centers of these lesions become irregular and slightly sunken with large scabby surface. Often the disease extends into the seed cavity. Secondary decay organisms may invade the bacterial spot lesions, resulting in fruit decay. The disease only affects green fruit; once the fruit turns red and the acid content increases, the fruit is no longer susceptible to the disease.The bacterial spot infection often originate from contaminated seeds or transplants or plant debris remaining in the garden from previous diseased plants or on volunteer tomato or pepper plants. The bacteria can spread from plant to plant by wind, rain, overhead irrigation, tools and humans.

Garden sanitation is an essential component to controlling Bacterial Spot infections:

1. Do not work in the garden when plants are wet; if you are moving wet leaves around you may be spreading the disease with contaminated water from the leaves.
2. If you are pruning a plant and suspect that it may be infected, always disinfect your tools before

moving to the next plant.

3. At the end of the gardening season, remove all plant material, including weeds, from the garden.
4. If you start your own plants from seeds, use a sterile mix. If you are re-using pots or trays, sanitize them with a disinfectant such as a 1 part bleach to 9 parts water solution.
5. Whenever possible, do not plant tomatoes in the same place year after year. If not possible to rotate to a different plot, rotate to a different section of the garden. If possible, avoid planting in areas where potatoes, peppers or eggplants were planted in the last year.
6. Give your plants plenty of space. The longer leaves stay wet, the greater the risk of bacterial spot. Leaves will dry faster when there is good airflow; this helps reduce the severity of bacterial spot.

Blossom End Rot

Blossom End Rot
Photo: David B. Langston, University of Georgia, Bugwood.org

Blossom End Rot (VEC Publication 450-703) is a troublesome cultural problem that many of my gardening friends and myself have experienced. Unlike the various other problems discussed, blossom end rot is not caused by a disease organism; rather, it is a physiological disorder that occurs when there is insufficient calcium available to the developing fruit.

Initial symptoms of blossom end rot generally appear as water-soaked areas near the blossom end of the fruit (the end opposite the stem). Initially small, the water-soaked spot enlarges and darkens rapidly as the fruit develops. The spot may enlarge until it covers as much as 1/3 to 1/2 of the entire fruit surface. As the spots grow, the tissue becomes shrunken and soon dries out, becoming flatten or concave. The infected area becomes black and leathery (See Photo). The fruit does not soft rot unless the spots are invaded by a secondary fungi or bacteria, but that frequently happens. These secondary organisms are sometimes mistaken as the root cause of the problem. But as the name of the disease implies, symptoms appear only on the blossom end of the fruit and no other parts of the plant.

While the occurrence of blossom end rot may indicate a calcium deficiency, in reality, the soil may have adequate calcium; however, for various reasons, the plant may not be able to absorb enough calcium to supply the rapidly-developing fruit. The cause of the problem may be one or a combination of the following environment factors:

1. Low soil pH
2. Low calcium levels in the soil
3. Extreme fluctuations in moisture
4. Damaged roots
5. Excess nitrogen fertilizers

Prior to planting, the main preventative measure is to have a soil test done to determine if adequate calcium is present in the soil. Also, it is recommended that a pH level of approximately 6.5 (VCE Publication 450-703) be maintained. The lower or more acid the pH, the less available the existing calcium is to the plant. If the results of your soil test indicate a low pH and low calcium levels and lime is recommended, it

should be worked into the soil 2-3 months before planting to allow time for it to become effective.

Maintain a uniform supply of soil moisture by watering plants during periods of drought. The general rule of thumb is that tomato plants require about 1 inch of water per week. Mulching will often help to maintain even levels of moisture. Also, weeds will compete with the plants for moisture and should be removed.

Avoid cultivating closer that 1 foot to the plant to avoid damaging roots.

Do not over-fertilize, especially with high-nitrogen fertilizer, as it can cause problems with the uptake of calcium. Use nitrate forms of nitrogen or consider using an organic fertilizer. Also, avoid over- fertilization during fruiting.

In summary: the diseases we chatted about in this article may seem a bit daunting to the new tomato-grower; however, there are many proactive things that the gardener can do to prevent the diseases. Best of all, **the preventive measures work on all the diseases discussed!** Don't be discouraged!

The first proactive step that a gardener can do is to provide the conditions the tomato plants need to be happy. Healthy and happy tomato plants are able to fend off diseases far better than stressed or weak plants. So fear not. Just be sure to follow the disease-preventive measures:

- Select a site with full sun (at least 8 hours of sun).
- Provide good soil, amended with organic mater, nutrients, and a proper pH around 6.5.
- Select disease-free plants and varieties that are disease- resistant.
- Practice crop rotation as much as possible and good sanitation in order to limit the spread of the disease.
- Provide constant levels of water, though drip integration and by mulching.

But if a problem develops, diagnose it. If you are not sure what disease you're dealing with, take a sample of your diseased plant (in a bag) to your local Extension Office. They will not only help with diagnosing the problem, but also offer recommendations on possible solutions. There are several diagnostic tools online that also may be of help. Texas A&M has a very user-friendly tool that may be of help. The link to that web site is: http://aggie-horticulture.tamu.edu/vegetable/problem-solvers/tomato-problem-solver/

Many of the web sites listed offer fungicide solutions to the various diseases. If you elect to treat with fungicides, be sure that it will control the disease your plants have, and that it is safe to use on tomatoes. Use the rate indicated on label and follow the application instructions. Remember that the pesticide label is the law.

Happy gardening and thanks for joining us in The Garden Shed. We hope to see you again next month.

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Tips and tasks in the vegetable garden

By Cleve Campbell | June 2015 - Vol. 1 No. 6

June is a busy month in the vegetable garden — there's planting, weeding, mulching, harvesting, looking for that little extra space to plunk in that one more pepper or tomato plant. Did I say weeding?

But let's start with planting. June is a good month for planting beans and squash and plenty of other vegetables. Take a look at the handy-dandy chart below, which was developed using the Virginia Cooperative Extension Publication 426-331, "Vegetable Planting Guide and Recommended Planting Dates."

June 1-6	**June 7-13**
Bush Beans	Bush Beans
Pole Beans	Pole Beans
Lima beans	Lima beans
Wax Beans	Wax Beans
Cucumbers	Cucumbers
Eggplant*	Egg Plant*
Muskmelons	Muskmelons
Okra	Okra
Peppers	Peppers
Pumpkins	Pumpkins
Southern Peas	Southern Peas
Sweet Corn	Sweet Corn
Summer Squash	Summer Squash
Winter Squash	Winter Squash
Sweet Potato	Sweet Potato
Tomatoes*	Tomatoes*
Watermelon	Watermelon
June 14- 20	**June 21-30**
Bush Beans	Bush Beans
Pole Beans	Pole Beans
Lima beans	Lima beans
Wax Beans	Wax Beans
Cucumbers	Cucumbers
Eggplant*	Egg Plant*
Muskmelons	Muskmelons
Okra	Okra
Peppers	Peppers
Pumpkins	Pumpkins
Southern Peas	Southern Peas
Sweet Corn	Sweet Corn
Summer Squash	Summer Squash

Winter Squash	Winter Squash
Sweet Potato	Sweet Potato
Tomatoes*	Tomatoes*
Watermelon	

*** Denotes Transplants**

The suggested dates may vary for different areas.

June Tasks

Thin seedlings of carrots and beets to proper spacing, about 4-5 inches to avoid crowding.

Apply organic mulches such as leaves, straw and clean grass to conserve water, suppress weed germination, and enrich soil as the mulch decays.

Repeat plantings of corn and beans to extend the harvest season.

Monitor soil moisture. As a general rule, vegetables require about an inch of water per week during the growing season. Soaker hoses or drip irrigation make the most efficient use during dry spells.

Asparagus — stop harvesting when spears become thin.

Photo Credit: Cleve Campbell

Growing lettuce under a shade screening material will slow bolting and extend the harvest season. Also try planting bolt-resistant varieties such as Muir, Sierra and Nevada.

Sow new warm-season vegetable seeds after harvesting.

Continue to **mound soil up around the potatoes** to prevent them from being exposed to the sun and turning green. You can also add a layer of straw or leaf mulch to help control weeds.

Tips:

Herbs planted in average soil **need no fertilizer**. Too much fertilizer may reduce flavor and pungency.

To control earworms on corn plants: apply several drops of mineral oil to the corn silk every 3 to 7 days.

Thin overloaded fruit trees; this will result in larger and better fruit at harvest time.

Renovate the strawberry patch after harvest. Mow the rows, thin out excess plants and apply mulch for weed control.

Clethra alnifolia

By Patsy Chadwick | June 2015 - Vol. 1 No. 6

Go native! Try Clethra alnifolia. We all appreciate plants that provide both beauty (form) and utility (function) in the landscape design. *Clethra alnifolia* is one such plant that provides both. Its graceful form, dark green foliage, fragrance, and generous floral displays keep the ornamental garden looking fresh and inviting in the summer months. As a native species, it functions as an excellent source of nectar and seeds for a variety of wildlife.

The name *Clethra* translates from the Greek word for Alder, which is a type of tree. *Alnifolia* translates as "Alder-foliaged," because the leaves bear a faint resemblance to the leaves of the genus *Alnus*. *Clethra* goes by several common names, including sweet pepperbush, hummingbird plant, coastal sweet pepperbush, white alder, summersweet *Clethra*, or just simply summersweet. I prefer the last option — summersweet. Is

that a great name for a plant or what? Just as its name suggests, it blooms in summer and it has a spicy, sweet fragrance.

DESCRIPTION

Clethra alnifolia

Form – Summersweet is a small to medium size, deciduous, suckering or colony-forming upright shrub. Depending on the cultivar, it typically ranges in size from three-to-eight feet tall.

Function – This shrub is useful as a single specimen in the ornamental garden. It is equally as attractive when planted as a grouping, a hedge, a foundation planting or as part of a naturalized landscape. This native species can be found in every state on the east coast from Maine to Florida and as far southwest as Texas. It provides nectar for hummingbirds, bees and butterflies in the summer and seeds for birds in the winter. As an aside, the *C. alnifolia* species may provide more nectar for pollinators than the cultivars. Deer and other four-footed pests appear not to have any interest in this plant.

Foliage – Although late to leaf out in spring, the medium textured, dark green foliage is very attractive. The serrated leaves are two–to–three inches long, elongated to ovate in shape, and arranged in an alternating pattern along the branches. In autumn, the foliage turns golden yellow.

Flowers – The showy, fragrant flowers bloom on current year's growth and are arranged in bottlebrush-like racemes at the tips of branches. The blossoms on the *C. alnifolia* species are white. However, a couple of cultivars have attractive pink blossoms. After the shrub finishes flowering, it develops delicate, one-eighth inch, non-showy seed pods, which resemble peppercorns. As you might guess, this is the plant characteristic that prompted the name "sweet pepperbush."

CARE AND MAINTENANCE

Although slow growing, summersweet is easy to grow in average or wet soils that are consistently moist and acidic. Despite its preference for moist soils, this versatile plant is fairly drought tolerant once it is established in the landscape. While it prefers full shade, it will tolerate everything from full sun to full shade. You can't get any more flexible than that. I've had good luck growing it in full sun in the morning and shade in the afternoon. A generous layer of mulch over the root zone helps keep the soil cool and moist.

Good soil preparation is key to making this shrub happy. Dig a hole that is three–to–four times as wide as the root ball, but only as deep as the root ball. Spread out the roots in the hole, fill in the soil over the roots, and water in well. Cover with two–to–four inches of mulch to retain a steady moisture level while the plant is getting established.

Other than an occasional pruning, this shrub requires little in the way of maintenance. Prune in late winter or early spring before flower buds form. Cut out any damaged or dead branches at ground level. If you're not sure whether a branch is dead, try clipping off the tip. If you see white wood inside, the branch is still alive. To control the overall size of the shrub, prune about one-third of the longest stems back to the ground but do so randomly so that the shrub retains a natural look.

Summersweet can be easily propagated from stem cuttings in early summer or from seed that is planted in either spring or fall. If you are propagating from stem cuttings, take three-to-four inch long stem cuttings in

the cool of the day from well-watered plants. Cuttings rooted in early summer have a better propagation success rate than cuttings started later in the summer. For those of us who like a challenge, harvest the ripe, brown seed capsules of the species and plant in the fall or spring.

Summersweet spreads by root suckering, but because it spreads slowly, it can be easily managed. Just remove the suckers with clippers or loppers.

Pests rarely bother this plant. Occasionally, they may suffer an infestation of spider mites. However, if the plant is kept well hydrated, spider mites tend to leave it alone.

CULTIVARS AND OTHER CLETHRA SPECIES

In addition to the native species, a number of *C. alnifolia* cultivars may be found at garden centers, including:

- '**Hummingbird**' – A dwarf cultivar that tops out at about three feet and is wider than it is tall. The white blossoms are larger than the native species, open earlier, and appear in racemes that average four–to–six inches in length. This is a good choice for a small wildlife garden.
- '**Sixteen Candles**' – A dwarf selection similar in size to 'Hummingbird' but with white flowers that are held more upright than "Hummingbird.' It is also ideal for a small garden.
- '**Pink Spires**' – A pink-flowering cultivar with flowers that are as fragrant as the white form. This cultivar can grow six–to–eight feet tall. One of the largest cultivars, this shrub can be used to fill a large space.
- '**Ruby Spice**' – A sport of 'Pink Spires,' this cultivar has beautiful, deep rosy pink buds that open up to paler rose-pink blossoms in four-inch long racemes. On average, 'Ruby Spice' grows four–to–six feet tall and wide. The shape is generally oval but may be round.
- '**Vanilla Spice™**' – An upright to rounded form with large white flowers that are approximately twice the size of the native species. This cultivar grows four–to–six feet tall and three–to–five feet wide.

In addition to *C. alnifolia* and its cultivars, you may possibly encounter two other native species of *Clethra* in garden centers: *C. tomentosa* and *C. acuminate*.

- *C. tomentosa* (also referred to as *C. alnifolia* var. *tomentosa* or downy sweet-pepperbush) is similar in appearance to summersweet. It is more heat tolerant than *C. alnifolia* and has hairier leaves and twigs. Two cultivars of *tomentosa* are 'Cottondale,' which has very long flower stalks, and 'Woodlander's Sarah,' which has white-spotted leaves.
- *C. acuminata*, also known as mountain sweet-pepperbush or cinnamon *Clethra*, is not currently easy to find in garden centers. In the wild, it can be found in rich, moist woods or in dry, rocky outcrops throughout the southern Appalachian Mountains, where it prefers the cooler areas of zones 6 and 7. According to horticulturist and author Michael Dirr, this shrub would be a good choice for a semi-shaded garden nook. Taller than *C. alnifolia,* it can reach 10 to 15 feet in height and is a very attractive plant.

Several other species of *Clethra* exist in other parts of the world, but they are generally not grown in this country.

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June Ornamental Garden Tasks and Tips

By Patsy Chadwick | June 2015 - Vol. 1 No. 6

June is one of the busiest and most rewarding months for the ornamental gardener. It's busy because there's so much to accomplish before the really hot weather descends upon us. It's rewarding because, at the end of the day, you can take pride in the landscape you have created. Just don't become overwhelmed by all the work that needs to be done to create that perfect landscape. After all, gardening is not a competitive sport – or is it?

Garden centers are bursting this month with lots of ornamental plants to choose from. As you select bedding plants (annuals) or perennials for your garden, don't be dazzled by all the colorful blooms. While it's nice to see the color of the blossoms, it's more important to **buy good quality plants**. Look for plants that are well proportioned with sturdy stems and healthy, disease-free, pest-free foliage. If possible, carefully slip the plant out of the pot and check the roots to make sure they are well developed but not root-bound. Healthy roots should be white. If the plant has brown or black roots, that's a bad sign. Just put the plant down and quietly step away.

With so many plants to choose from, it's easy to become overwhelmed. Before buying anything, **think about the plant's requirements for sunlight, water, and soil**. If you have a shady yard, for example, don't buy a plant that needs full sun. If you don't have a lot of water to spare for gardening, then don't buy a water "hog." If your soil is alkaline, don't buy an acid-loving plant. If you have a deer problem, think twice about buying hostas, daylilies, or other plants that Bambi might find tasty.

The nursery trade is flooded with **new varieties of annuals and perennials** every year. Be daring and try something new. Just avoid buying one of this and one of that. Otherwise, your garden may take on a jumbled look. For example, annuals that are used to cover a large space in the garden look much more appealing to the eye if you plant just one color in a big swath. Tip: If you chose wax begonias as bedding plants, the bronze-leaved varieties tend to do well in full sun whereas the green-leaved varieties can tolerate some shade.

Consider planting a few herbs in the ornamental garden to add interesting color accents. For example, purple-leaved basil, such as 'Purple Ruffles,' harmonizes well with yellow, pink, or lavender-blue flowering plants. 'Pesto Perpetuo,' which is a green-and-white variegated form of basil, is another good choice for adding texture and visual interest. Chives are particularly charming in the ornamental garden with their airy globes of lavender blossoms. Gently mounding golden oregano and golden marjoram as well as creeping thyme also add color and interest and serve as useful ground covers. Use your imagination and try incorporating other herbs that appeal to you.

As annuals become established, **deadhead spent flowers** to encourage the plant to produce another round of flowers. Yes, pinching or snipping off dead blossoms probably sounds tedious. However, a few minutes spent deadheading each week will keep those annuals blooming well into the growing season.

Except for Irises, which can be divided later in the summer, **divide spring and early summer flowering perennials** after the blooms fade. Instead of cutting the clump into two or more pieces with a knife or sharp-edged shovel, try gradually prying the roots apart with two spading forks placed back to back. This technique takes more time and effort but damages fewer roots than cutting the clump apart.

Leave foliage from daffodils and other spring blooming bulbs in place until it turns brown and

begins to dry. Do not braid or tie the foliage. It needs to continue photosynthesizing in order to provide nutrients for next year's blossoms. If you set out bedding plants to cover the bare spots left by the bulbs, be careful when you are digging in the soil to avoid damaging the bulbs.

For **containerized plants**, keep close tabs on their water requirements. This is particularly critical if you're planning to go away on vacation. Group containerized plants together near a hose or other water source so that it will be easier for your neighbor or other helpful person to water your plants for you in your absence. Place the plants where they will be out of the afternoon sun. This will help them conserve water. Don't forget to check all hanging baskets daily, particularly those that are in full sun, and water as needed.

Water trees and shrubs deeply and infrequently to help them get through the summer heat. This is particularly important during the first few growing seasons after a tree or shrub is planted. It's also important for all plantings during drought conditions.

Stake taller plants, such as foxglove, yarrow, and delphiniums to prevent them from flopping over. This is particularly critical if your garden is in a windy site. Likewise, some asters, chrysanthemums, and other mounding plants that tend to flop over may require support.

If you want to **propagate new plants** from woody shrubs, trees or perennials, now is the time to take stem cuttings. To learn about propagation techniques, see Virginia Cooperative Extension Publication No. 426-002, "Propagating by Cuttings, Layering and Division," http://www.pubs.ext.vt.edu/426/426-002/426-002_pdf.pdf.

Inspect rose bushes for insect damage from aphids, mites or thrips. Aphids may be eliminated simply by directing a strong water spray from the hose on the rose bush. If Ladybugs are present in the environment, they may eliminate aphids without any intervention on your part. Otherwise, spray the shrubs with insecticidal soap to kill the insects. Be sure to follow the instructions on the container before applying.

Protect bees and other beneficial insects from harm because we depend on them to pollinate our ornamental plants and food crops. If it's absolutely necessary to use a pesticide, spray in the evening after bees have returned to their hives.

As the weather grows warmer, **mosquitos** make their appearance on the scene. Contrary to what some people believe, mosquitos cannot breed successfully in moving water. They can, however, breed in a puddle of standing water, such as that found in your birdbath or in a saucer under a potted plant or in a drain pipe, especially if the water remains in place for more than a week. With that in mind, monitor all potential mosquito breeding places and remove standing water immediately.

Don't get excited if your **bleeding heart** (*Dicentra spectabilis*) foliage turns yellow and starts to die back. This is normal behavior for this plant, which generally goes dormant by mid-summer. Just cut the yellowed foliage back to the ground. If this leaves a large gap in your landscape, fill in the space around the roots with some annuals or later blooming perennials or perhaps some ferns or hostas. Everblooming varieties do not go dormant.

Now that you've planted, weeded, and watered your garden and patrolled the area for pests and diseases, you deserve a treat. **Bring a few blossoms indoors** to admire. The best time to cut flowers for bouquets is early in the morning or late in the day when temperatures are coolest. Cut the stems at an angle (for better water uptake) and place them in water immediately. If you can't bear to cut those beautiful posies, consider cutting just a few and then filling out your bouquet with interesting or colorful foliage from perennials such as ferns and hostas or branches from shrubs, such as abelia and spirea.

June Lawn Care

By Melanie | June 2015 - Vol. 1 No. 6

Yes, that is what David Chalmers of the Virginia Tech Department of Crop and Soil Environmental Services says. When I started taking care of my beautiful new sod lawn, I wanted it to look neat, so I bagged and bagged and bagged….too big of a lawn to do easily. I did however, save the clippings in a compost area to distribute after they dried. Living in the woods allowed me to store leaves and grass without having to bag it and put it in the landfill — what a waste of good clippings! Some states such as Missouri actually have laws against this.

Part of the reason I write these monthly articles is to educate myself by doing research on lawns. When I realized I could save time by using my zero turn mower on the sod areas, I checked into buying a bagger for it. Whoa, was that expensive! While taking the Master Gardener class, I came to understand that it is actually preferable to leave the grass clippings on the lawn, saving labor and time, but more importantly, promoting a healthy lawn. I hope this article will make all of us better land stewards.

The Environmental Protection Agency (EPA) estimates that yard waste accounts for 18% of refuse that is being dumped into landfills, with 75% of it being grass clippings. It is difficult for municipalities to take on this removal project except with leaves and limbs. Grass clippings decompose quickly and can emit foul odors if not handled correctly, making it difficult to take on as a community.

Thatch

There is a long held belief that leaving clippings on the grass causes a buildup of thatch. Academic research shows this idea is not true. Leaving clippings is actually beneficial for the lawn because clippings can return nutrients and microorganisms back to the soil. Thatch forms when turf roots, stems and leaves are sloughed faster than they can decompose. Grass clippings are nearly 85% water and usually decompose faster than other grass plant parts. Microorganisms and earthworms can digest thatch. If the thatch is excessive (greater than 1/2 inch), this brown, spongy material prevents water and air from penetrating to the grass roots. This buildup is worsened by growth encouragement practices such as applying high rates of fertilization and frequent excessive watering. In addition, poor soil aeration and low soil pH inhibit microbial decomposition. If thatch is a problem, use a vertical mower or power rake, available at your local rental company, to reduce the layer. A vertical mower cuts through the thatch with rotating blades or stiff wire tines. The resulting loose material can be added to your mulch or compost pile.

Mowing

Can any mower mulch the clippings? Yes, any mower can do the job if the lawn is mowed frequently before the grass becomes too long. The clippings must be cut small enough to filter down into the soil. The traditional side discharge mower can be safely adapted by trading the bagger for a part that keeps the chute open safely. Mulching mowers, a type of rotary mower that chops clippings before they fall into the lawn, are a good choice.

Mow when the grass needs it and remove only one-third of the leaf height at one time. This may mean more mowing (about every 5- 6 days) in the spring will be needed; but during our hot summers, the need will decrease to probably every 10 days. Also, keep the mower blades sharp and mow when the grass is dry.

Source of fertilizer

This “grasscycling” technique will provide some nitrogen which is released slowly. It will not produce a “greening up effect” but will help improve the soil’s water holding capacity and fertility. Less time and money spent on the lawn is a good thing! However, this will not substitute for fertilization of warm-season grasses in the fall and cool-season grasses in the summer.

Are there reasons ever to bag the clippings?

- If the lawn is heavily diseased, removing clippings may reduce the diseased organism load
- If the lawn is mowed when wet or excessively long, the clippings will mat together and could damage the lawn under the clumps of clippings.
- If your mower does not have a method to operate without a bagger.

Clippings as mulch or compost

If clippings are too long to leave on the lawn, they can be used for mulch or compost. If you spread them out as mulch, be sure to have only a 1 inch layer and use dry grass. If the grass is wet, try to spread it out to dry. Greater thickness can inhibit the penetration of oxygen and moisture to the soil and foul odors may develop as well as heat.

The same problem can also develop if large amounts of fresh clippings are put in the compost pile all at once. Try mixing clippings with dry leaves at a 1:1 ratio before composting. The nutritional value of grass compost depends on the proportion of grass to a carbon source such as dry leaves. If the compost has more turf grass clippings than dry leaves, it will provide more plant-available nitrogen and phosphorus. Lastly, do not put grass clippings in the compost that have been treated with herbicides within the last 2 weeks prior to the mowing.

6 Reasons to practice “grasscycling”

- It improves lawn quality when we allow the clippings to decay naturally, providing valuable nutrients.
- It saves time and work.
- All lawn mowers can grasscycle.
- Grass clippings are a free source of slow release fertilizer
- There is no need to spend tax dollars on landfilling grass.
- It is a simple, easy opportunity for every homeowner to do something good for the environment.

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Crispy Asparagus Appetizers

By Cleve Campbell | June 2015 - Vol. 1 No. 6

I have always thought of asparagus as a harbinger of spring. My mother served it with lemon and butter alongside the Easter lamb and new potatoes. She preferred very thin green stalks, so I understood them to be the pick of the crop.

I left home and moved to Holland as a young adult. Spargelzeit, or asparagus season, arrived in April after my first long, dark winter in Amsterdam. The Dutch flocked in droves to Germany's Baden region for its annual White Asparagus Festival. I joined them in a cultural awakening, learning that not everyone agreed with my mother's assessment of what makes the best asparagus spears. In place of thin, green stalks, I learned to savor the newly harvested crop of *white* asparagus. Fat white stalks, smothered in Hollandaise. The Germans call it 'white gold' and far prefer it to the green variety most commonly sold in our North American markets.

White asparagus is harvested when its stalks are still underground. Light deprivation prevents the production of chlorophyll. As a result, the green color is absent from the stalks. Since asparagus becomes woodier the longer it is left to grow, some prefer the slightly milder taste of the tender white stalks.

White and green asparagus may be used interchangeably in recipes. I think there is no better way to cook asparagus than to roast it with a little olive oil, lemon juice, salt and pepper. Leftovers are delicious when paired with shaved Parmesan and tossed with salad greens.

The following recipe is one that always gets raves when I serve it as an appetizer. It is easy and delicious. Prosciutto may be eliminated for a vegetarian treat. If using prosciutto, you may want to cut down on the Parmesan as they are both rather salty.

Crispy Asparagus Appetizers

Serves 6

Ingredients:

6 long thick asparagus spears, trimmed

Sliced proscuitto, optional

6 sheets phyllo dough

3 tablespoons unsalted butter, melted

½ cup grated Parmesan cheese

Freshly grated nutmeg

Salt and pepper

Directions:

Preheat oven to 400.

Blanch asparagus spears in boiling salted water for 2 minutes or until tender-crisp; drain.

Rinse in cold water and pat dry with paper towels. Season with pepper.

Roll each asparagus spear in prosciutto, if desired.

Brush one sheet of phyllo dough with melted butter and sprinkle with 1 tbs. of Parmesan cheese and a pinch of nutmeg. Place the prosciutto-wrapped asparagus on the short side of the phyllo and roll it up. Brush the roll with butter. Sprinkle with additional cheese. Place on a baking sheet. Continue with the remaining spears.

Bake on top shelf of oven for 10-12 minutes or until golden brown and crisp. Remove to wire rack and cool slightly. Serve whole or slice at an angle into bite sized pieces.

Adapted from *Black Tie to Blackeyed Peas, Savannah's Savory Secrets* (2000)