Spectacular flower masses and colors, plant form, and evergreen foliage are among the reasons for the popularity of azaleas. In Florida, azaleas bloom from late February to early April, depending on cultivar and seasonal variation. Many azalea cultivars grow well in north and central Florida, but fewer are recommended for south Florida. Azaleas can enhance the home landscape in many ways. They are used in foundation plantings, in mass borders, or as specimen plants. Generally, they are better adapted to informal landscape designs due to their open, sprawling growth habits. When choosing azaleas for your landscape, consider the following factors:

- mature size and form,
- flower size and color,
- flowering season, and
- adaptability.

Flower initiation follows spring growth, and flower bud development continues in late summer and fall. Flower bud dormancy is usually broken by exposure to temperatures below 50°F (10°C) for four to eight weeks followed by warm temperatures. Florida’s warm winter temperatures may not provide adequate chilling for northern hybrids, resulting in sporadic flowering. Due to greater winter temperature fluctuation, sporadic flowering is more common in central and south Florida than in north Florida.

General Culture

**Sun & Shade**

Azaleas perform best in areas with filtered sunlight. Their shallow root system and low tolerance to poor soil drainage make placement and care important. Partial shade under pine trees or strategically spaced hardwoods provides conditions for healthy growth and optimum flowering. Dense shade reduces plant growth and flowering.

Azaleas exposed directly to early morning sun after a hard freeze are susceptible to cold injury. Rapid thawing of frozen twigs and branches may result in bark splitting. Death of branches with split bark may not occur until weeks or months after the injury.

**Soils**

Well-drained, organic soils with a pH of 4.5 to 5.5 are best suited for azaleas. Organic amendments and fertilization are usually needed to modify Florida soils for proper azalea growth. Fertilizers, organic amendments, and pH-adjusting amendments should be incorporated into the planting bed or soil backfill during planting.

Preparation of the entire planting area is best when a number of azaleas are being transplanted together. Organic amendments—such as peat, compost, or pine bark—help increase water and nutrient retention and lower the soil pH. A soil test will determine the pH of your existing soil and provide a basis for fertilizer recommendations.

Ample quantities of iron and other micronutrients may not be available in soils with a pH higher than 5.5. You can modify soils with a pH higher than 5.0 using applications of elemental
sulfur. Excessive rates will injure plant roots, so apply no more than 1 pound of sulfur per 100 square feet of planting at one time, and apply sulfur no more than two or three times a year. Dolomitic lime should be incorporated to raise the pH of soils with a pH lower than 4.5. Soil adjustment should be made based on a recent soil test.

Transplanting
The planting hole for containerized or balled and burlapped azalea plants should be approximately six inches deeper and twelve inches wider than the root mass. An organic amendment--such as peat, composted leaves, or pine bark--can be incorporated into the backfill soil at a rate not to exceed one-third volume by volume. Generally, azalea plants should be spaced three to five feet apart, but the ideal spacing varies according to the mature size of the cultivar.

Azaleas should be planted at or above the depth at which they grew in the container or nursery. An organic mulch applied to a depth of 2 - 3 inches will conserve water and reduce weed problems. November to February is the best season for transplanting, but containerized azaleas may be transplanted at any time if proper care is provided.

Watering
Irrigation is necessary for optimum plant growth during extended dry periods. Plants transplanted during the dry season into sandy soils may require watering of the root mass twice a week. Generally, established plants should be watered every 10 - 14 days during dry periods to wet the soil to a depth of 14 - 18 inches.

Fertilization
Frequent, light applications of fertilizers are necessary in Florida’s sandy soils. Acid-forming fertilizers like 12-4-8 or 15-5-15 should be applied during each season—spring, summer, fall, and winter. Apply approximately ¼ pound to a mature plant or ¼ to ½ pounds per 100 square feet.

Micronutrients should be applied routinely. Complete fertilizers containing micro-nutrients are available and can be used for normal fertilization. Soil and/or foliage application of only micronutrients have proven satisfactory, although soil treatments usually have a more long-term effect.

Pruning
Pruning is necessary to obtain a full, well-branched azalea. Several light prunings early in the active growing season will result in compact growth and numerous branches on the present season’s growth. Terminal vegetative growth stops after flower initiation and subsequent bud development. Pruning after flower bud initiation will decrease the number of spring flowers. Therefore, established plants should be pruned shortly after flowering.

Propagation
Evergreen azaleas are usually propagated by cuttings to maintain hybrid characteristics. Azalea cuttings are rooted most successfully when they are taken after the spring growth has hardened or matured (June). Cuttings 3 - 4 inches long have proved satisfactory. Deciduous azaleas are usually propagated by seed or layering because cuttings are difficult to root.

Problems
Diseases
The most common diseases reported on azaleas include petal blight, leaf gall, and various declines.

Petal Blight
Petal blight is most severe during cool, moist weather. Infection first appears as small, white spots on colored petals or rust-colored spots on white flowered varieties. Spots enlarge rapidly into irregular blotches under moist conditions, causing the blossoms to “melt” into a slimy mass.

Affected blossoms dry and may remain or drop from the plants. The fungus survives in dried blossoms on or in the soil. Removing and burning surface mulch and dead flowers three to four weeks before bloom will reduce disease incidence. Directed ground sprays of a recommended fungicide one month before bloom will provide some control.

Leaf Gall
Leaf gall occurs during wet spring months and is most severe on densely shaded plantings with poor air circulation. Galls may occur on the leaves, stem, or flowers. Small numbers of galls can be handpicked and destroyed at first appearance. Large plantings should be protected by fungicide sprays starting at budbreak and continuing every ten days as needed.
Azaleas decline for various root-related reasons such as root rot diseases or nematode injury. Plants that exhibit stunting, chlorosis, and die-back symptoms should first be examined for problems with planting depth, soil pH or drainage. Plants in poorly drained sites often develop Pythium- or Phytophthora-caused root rot diseases. Feeder roots become mushy and discolored and the outer root layer (cortex) characteristically sloughs off when handled, leaving the string-like root center (stelae).

Root Rot & Nematodes
Mushroom root rot often kills azaleas, especially those planted in sites with tree stumps or buried organic debris. The causal fungus will be visible as white mycelium under the outer bark layer of the crown or major roots.

Slow decline in plant vigor with general stunting may be due to nematode injury of the root system. Root examination will reveal galls or swellings, necrosis of fine roots, and/or general stubbiness of small roots, depending on the nematode involved.

Controls for both nematode and root rot diseases are primarily preventive. Dead or dying landscape plantings should be removed with as much of the root system as possible, and the soil should be sterilized before replanting.

Insects
Lacebugs, white flies, leafminers, spider mites, scale and stem borers are the most common insects that attack azaleas.

Lacebugs
Lacebugs are sucking insects found on the underside of the leaf. The top surface of the injured leaf appears speckled or mottled. Two applications of recommended insecticides at ten-day intervals sprayed on the lower surface of the leaf effectively control lacebug.

Leafminers & Leafrollers
Leafminers or leafrollers feed on azalea leaves during their larval stage. Two applications of a recommended insecticide at seven- to ten-day intervals will control leafminers. Leafrollers can be controlled by two applications of a labeled insecticide at fourteen-day intervals.

Spider Mites
Spider mite injury appears as a bronzing or rusty coloration of green leaves. A mite infection can be verified by placing a white piece of paper beneath the foliage and slapping the leaves with your hand. Mites can be detected on the white paper as moving, small red or brown specks. Two applications of a recommended miticide at five- to seven-day intervals will provide acceptable control.

Scale Insects
Several species of scale insects can be found on azaleas. Some have a white cottony appearance; others are covered with a hard shell. Scales suck the sap from azaleas, resulting in yellow or unthrifty leaves. Two foliar applications of a recommended insecticide at two-week intervals applied during early stages of scale development provide adequate control.

Stem Borers
Stem borers in the larvae stage tunnel into stem and branch tips during late spring and early summer. The young stem will wilt and die back to where the tunnel ends. The best way to control stem borers is to remove infested branches and then apply a properly labeled insecticide.

Red Spider Mite

Drawing of azalea stem borer grub in rhododendron stem.
Program Announcements

Landscape Matters 10AM

**Wildflowers**
Wednesday September 3
Master Gardener Claudie Speed

**Bring on the Pollinators**
Friday October 3 10AM-11:30AM
Pre-registration required by September 24
Becky Jordi

**Location**
Yulee Satellite Office
86026 Pages Dairy Road
Yulee, FL

Plant Clinics 10AM-2PM

Monday Sept 15
Bring us your tired, diseased, insect infested plants yearning to be free of problems. When possible place your plant in a plastic bag to prevent chances of spreading issues to other plants. You will receive current researched based information on proper plant care, disease management and insect control. These sessions are free to the public. No registration required. Come anytime between 10AM and 2PM for expert advice.

Monday Oct 6

Monday Oct 20

Saturday Oct 25 Special Plant Clinic Fernandina Mulch and Stone
474389 East S.R 200 Fernandina Beach, FL 32034 261-7177

**Location**
Yulee Satellite Office
86026 Pages Dairy Road
Yulee, FL

Fall Plant Sale 2014

Our biannual plant sale has Master Gardener-propagated plants, select trees and shrubs, “goodies” for your garden, including custom painted planters and new this year, FNGLA Florida Plants of the Year. Don’t miss the best sale Nassau County has ever seen! All proceeds benefit the Nassau County Master Gardener program and their volunteer community projects in Nassau County. For more information, call the Extension office at 879-1019.

*Join us Saturday, September 13th Fort Clinch State Park Free Park Admission - Program at the Conference Room 9am to 11am, Guided Nature Hike 11:15-11:45*

Registration Cost is $5 per person Learn how to identify and remove invasive plants that may be in your yard, receive a native plant and invasive plant ID cards!

Breakfast will be provided.
Call the UF/IFAS Nassau County Extension Service to register at 904-879-1019

Saturday October 11  9AM -12PM
Demonstration Garden
Yulee Government Complex
96135 Nassau Place  Yulee, FL

**YARDS to PARKS**

One of the greatest threats to our state is invasive exotic plants. These plants are popular in yards but easily spread and take over natural areas. The University of Florida/IFAS Extension and Fort Clinch State Park want to partner with you to put a stop to the invasion.
Hello Everybody! Welcome back to Harvest Gold!

Not too long ago, I saw an old rerun of the Beverly Hillbillies on TV. This particular episode began with Mr. Drysdale waking to the sound of the Clampetts’ voices wafting through his bedroom window early one morning. Mr. Drysdale then heard the clan talking about plowing up their front lawn to plant turnips, onions, rutabagas, and such. In a panic, he quickly slipped on his shoes and his robe, ran over to the Clampett’s, and said to Granny, “Granny, you can’t grow things like turnips…here in front of the house.” Granny bent over, picked up a pinch of dirt, tasted it, and replied to Mr. Drysdale, “Sure you can….That’s turnip growing soil if I ever tasted it!”

Even though I have never picked up a pinch and tasted it, I can guarantee you we have turnip growing soil here in Nassau County. With fall upon us, now is the perfect time to plant turnips, as well as many other fall and winter crops.

To plant turnips, first prepare a row, and then direct seed. Sow as thinly as possible (this is the tough part, because the seeds are so small), and cover with very, very, very little soil. Keep well watered, and soon you will have turnips— they are that easy to grow. Personally, I plant the good-old fashioned cultivar Purple Top on a wide double-rowed bed (some people like to broadcast, which is a good method, too). I do not even cover the seeds; I just lightly tamp down the seeds with the tines of a rake (this knocks enough dirt down on them), and give them a good watering. After the seeds sprout and grow several inches, I thin plants to about three to six inches apart. (If you have enough, sauté the thinned seedlings in minced garlic, a bit of salt and pepper, and a little olive oil, or add a few sprigs to a salad for a spicy, peppery taste.) I then fertilize the plants a little (go easy on the high-nitrogen fertilizer, or you may end up with beautiful tops, but not much in the way of roots). Again, keep well watered. Harvest greens when the leaves are large enough, or as needed, or wait a month or two to begin harvesting roots.

Turnips are members of the Brassicaceae (Cruciferae) family, a family of cool-season crops that includes cabbage, mustard, kale, collards, and many other green leafy vegetables. Turnips are rich in vitamins, minerals, antioxidants, and fiber (especially the greens). Turnips are high in Vitamin A, Vitamin C, and B-Complex vitamins, and one cup of cooked turnips (greens and roots) contains only about 35 calories. Turnip greens are very high in Vitamin K, but for those who must restrict intake of Vitamin K, the roots are very low. In addition, turnip greens are an excellent source of the essential minerals calcium, copper, iron, and manganese.

And now, a bit of turnip trivia for you to share at your next Halloween party: Turnips were the original Jack-O-Lanterns. As we all know, the Jack-O-Lantern originated among the Celts over in Europe. In Ireland, on the Eve of All Saints Day (October 31st), people would hollow out and carve scary faces into turnips and other root crops, put lumps of burning coal or candles inside, and set them on their porches or by their doors to ward off evil spirits. When the Irish came to America, they found the native pumpkins much easier to carve than turnips, and thus an American holiday icon was born.
Speaking of pumpkins, and since we are approaching the Fall Festivals of Halloween and Thanksgiving where we celebrate all that is pumpkin, I will close with a little “Pumpkin Trivia:"

- Pumpkins are indigenous to the western hemisphere, have been cultivated by Native Americans for over 5000 years, and were completely unknown in Europe before the time of Christopher Columbus.
- Pumpkins now grow on every continent except Antarctica.
- Pumpkins, corn, and beans, called the “Three Sisters” by some Native American tribes, were among the most important crops cultivated by Native Americans.
- Native Americans flattened strips of pumpkins, dried them, and wove them into mats.
- Native Americans used pumpkin seeds for food and medicine.
- Florida has its own native pumpkin, called the Seminole Pumpkin (which is excellent for cooking), that grows wild in the Everglades.
- Pumpkins were a major part of the early Colonial diet, and saved many colonists from starvation.
- The Pilgrims made beer out of pumpkins.
- Early colonists cut a hole in the tops of pumpkins, removed the seeds, and filled the insides with milk, spices, and honey. This was then baked in hot ashes, and is the origin of pumpkin pie.
- In Colonial times, pumpkins were often used as an ingredient in the crust of pies, not as a filling.
- The total value of the 2012 United States pumpkin crop was approximately $150 million.
- Approximately one and a half billion pounds of pumpkins are produced in the United States each year (that’s a lot of pumpkin pies!).
- Illinois is the top pumpkin producing state, producing about 95 Percent of the domestic pumpkin crop.
- Most pumpkins and pumpkin products sold in the United States are sold in October and November.

- The vast majority of pumpkins grown in the United States are grown for processing; relatively very few are grown for ornamental sales, or sales in the produce sections of supermarkets.
- Botanically, pumpkins are not a vegetable—they are a fruit.
- Pumpkins are members of the Cucurbitaceae family, which also includes gourds, squash, cucumbers, and melons.
- Pumpkins are low in calories, fat, and sodium, and are high in fiber. Pumpkins are also good sources of Vitamin A, Vitamin B, Vitamin C, Beta-Carotene, potassium, copper, manganese, and iron.
- Pumpkins contain only 49 calories per cup, and are 90 Percent water.
- Pumpkins range in size from less than a pound to over 1,000 pounds.
- The largest pumpkin ever grown was grown in California, and weighed over a ton.
- Pumpkins are very versatile fruits: they can be roasted, baked, made into pies, added to soups, and baked into breads; the seeds can be roasted for a snack; and even the flowers are edible. Pumpkins are also used as animal fodder.
- Pumpkins were once recommended for removing freckles and curing snake bites.
- One of the largest pumpkin pies ever made was over five feet in diameter, and weighed over 350 pounds. It took six hours to make, and the ingredients included 80 pounds of cooked pumpkin, 36 pounds of sugar, and 12 dozen eggs.

Well, as Porky Pig would say, “That’s all folks.” Until next month, Happy Halloween, God Bless, and Happy Harvesting!

Peace and Goodness,

Joseph
Miss Alice’s Mashed Turnips and Potatoes

**Ingredients**
- 4 Large Turnips (Peeled)
- 6 Large Red New Potatoes (Unpeeled) or 6 Large White Potatoes (Peeled)
- ½ Cup Milk
- 6 Tablespoons Butter (Softened)
- 2 Teaspoons Sugar
- ½ Cup Sour Cream (Optional)
- 3 to 4 Cloves Minced Garlic
- Sea Salt and Black Pepper (To Taste)

**Directions**

Preheat oven to 375 Degrees Fahrenheit. Cube turnips and potatoes (once peeled and cubed, you should end up with about equal amounts of turnips and potatoes), and place in a large pot with enough water to cover. Bring to a boil. Cook for 25 minutes, or until tender. Remove from heat and drain. Mix milk, 4 tablespoons butter, sour cream, garlic, and sugar with the turnips and potatoes. Season with salt and pepper. Mash or whip until slightly lumpy or to desired consistency. Transfer turnip mixture to a baking dish. Dot with remaining butter. Cover loosely with aluminum foil, and bake for 15 minutes in a 375 Degrees Fahrenheit preheated oven. Remove aluminum foil, and continue baking for about 10 minutes, or until lightly browned.

**Notes**

If you wish you may cut down on or totally eliminate the potatoes, and substitute turnips instead. Either way, your family will love this dish.

Recipe courtesy of Mrs. Alice Marie Smith
Aunt Henrietta’s Turnip Slaw

**Ingredients**

- 4 Cups Peeled Turnips (Shredded)
- ¼ Cup Red Bell Pepper (Chopped)
- ¼ Cup Green Onion (Thinly Sliced)
- ¼ Cup Mayonnaise
- 1 Tablespoon Apple Cider Vinegar
- 2 Tablespoons Sugar (Or Splenda)
- ¼ Teaspoon Sea Salt
- ¼ Teaspoon Freshly Ground Pepper

**Directions**

In a bowl, combine all ingredients except turnips, and mix well. Pour mixture over turnips, and toss well. Refrigerate for at least 2 hours before serving to allow flavors to blend.

**Notes**

This is a very good alternative to ordinary cabbage coleslaw. Sometimes, I substitute a bit of cabbage for some of the turnip. That turns out well too, and gives a little variation on the slaw.

Recipe courtesy of Mrs. Henrietta Witherspoons
Aunt Wilhelmina’s Turnip Kraut (Sauerruben)

Ingredients
• Medium Purple Top Turnips
• Distilled Water
• Kosher Salt

Directions
Peel and shred enough turnips to fill as many quart Mason jars as you would like. Pack turnips into jars, and add one heaping teaspoon of kosher salt to each jar. Next, fill the jars with hot distilled water. Make sure turnips are completely covered with brine. Put the lids on the jars loosely, and allow the kraut to ferment in a warm place (ideally 68 to 70 Degrees Fahrenheit). Depending on the temperature, the “working” period can last up to six weeks. (Place jars on a plate while fermenting to catch any brine overflow. Check occasionally to make sure turnips are completely covered with brine, and add more brine, made with 3/4 teaspoon kosher salt to one cup of distilled water, if necessary.) After the aging process is complete, add enough hot distilled water to refill the jars if necessary, and tightly screw on lids. Place jars in a water-bath canner, and bring water to a full boil for 20 minutes. Turn off heat, and let cool before removing jars from canner. Serve with pork, hotdogs, heated as a side dish, or in any way you would serve sauerkraut. (You may taste-test the turnip kraut before the aging process is complete if you wish, and if the taste suits you, you may seal or refrigerate jars at that point.)

Notes
My Great Aunt Wilhelmina came to America as a refugee from Baden-Baden, Germany, during the Great War. Among the few precious personal effects she was allowed to bring with her was her mother’s handwritten cookbook containing recipes that had been passed down in the family for generations (Cooking has always been important in our family). This family favorite came from that collection of recipes.

Recipe courtesy of Mrs. Henrietta Witherspoons
Kathy’s Great Pumpkin Cheddar Pasta and Cheese

Ingredients

- 1 Pound Whole Wheat Penne Pasta
- 4 Tablespoons Butter
- 3 Rounded Tablespoons Flour
- 1 Cup Chicken or Vegetable Stock
- 2 Tablespoons Honey
- 2 Cups Milk
- ½ Teaspoon Allspice
- 1 Teaspoon Ground Mustard
- Cayenne Pepper (Optional, To Taste)
- Freshly Grated Nutmeg (Optional, To Taste)
- Salt and Pepper (To Taste)
- 2 Cups Pumpkin Puree
- 2 ½ Cups Shredded Extra-Sharp Cheddar Cheese (Divided)
- Sweet Paprika (For Sprinkling)
- Chopped Parsley (For Garnish)

Directions

Bring a large pot of salted water to a boil, and cook pasta until al dente according to package directions. Drain, and set aside. Melt butter in a large pan. Whisk in flour, and cook for about a minute. Whisk in stock, and reduce down to where there is almost no liquid left. Then, whisk in honey, milk, allspice, mustard, cayenne, nutmeg, salt, and pepper. Cook, stirring often, until thickened and mixture coats the back of a spoon. Taste and adjust seasonings if necessary. Whisk in pumpkin puree (Do not use prepared pumpkin pie mix). Add 2 cups of cheese, and stir until melted. Combine the pasta and the sauce, and transfer to individual casserole dishes, or one large casserole dish. Sprinkle the remaining cheese on top, and then sprinkle with paprika. Broil until cheese is melted and bubbling. Remove from oven, garnish with chopped parsley, and serve.

Notes

This great dish is like Macaroni and Cheese with a fall flavor. Enjoy!

Recipe courtesy of Kathy Warner
Kathy’s Great Pumpkin and Spinach Salad

Ingredients
- 1 ½ Pounds Pumpkin or Butternut Squash (Deseeded, Peeled, and Cut into Wedges)
- 2 ½ Teaspoons Olive Oil
- 2 ½ Teaspoons Honey (Or Brown Sugar)
- Sea Salt and Freshly Ground Black Pepper (To Taste)
- 2 to 3 Teaspoons Sesame Seeds
- 8 Ounces Baby Spinach Leaves
- 3 to 4 Ounces Toasted Pine Nuts

Dressing
- 1 Tablespoon Fresh Lemon Juice
- 1 Tablespoon Honey
- 2 Tablespoons Extra Virgin Olive Oil
- 2 Teaspoons Whole Grain Mustard
- Sea Salt and Freshly Ground Black Pepper (To Taste)

Directions
Preheat oven to 425 Degrees Fahrenheit. Line a baking tray with non-stick baking paper. Place the pumpkin wedges in a large bowl. Drizzle with oil and honey or cane syrup, and season with salt and pepper. Gently toss until the pumpkin is well coated. Place pumpkin in a single layer on the lined tray. Bake, turning once during cooking, for 25 minutes or until golden brown. Remove from oven, and sprinkle pumpkin evenly with sesame seeds. Return to oven, and bake for 5 minutes, or until the seeds are lightly toasted. Remove from oven, and set aside for 30 minutes to cool. Next, combine the lemon juice, extra virgin olive oil, mustard, honey, salt, and pepper in a jar, and shake well. Place the pumpkin, spinach, and pine nuts in a large bowl. Drizzle with the dressing, and gently toss. Serve immediately.

Notes
Very healthy and nutritious, this salad goes well with any meal, or is delicious as a light meal in itself.

Recipe courtesy of Kathy Warner
Gwen and Steve Cowart both enjoy constructing and maintaining their lovely garden spaces. They care very much and have enjoyed learning about using Florida Friendly plants that are drought tolerant and cold hearty.

In their front yard near the Japanese Zen Garden there is an elegant Pindo Palm and also a Sylvester Palm. Gwen painted the concrete bench and lantern with two colors of paint so that they would look like natural stone. The Mexican beach rock and stones on the path present a very pleasant contrast.

Rather than planting grass on the West side of the home, they bought about a pound of annual and perennial wild flower seeds and planted them after adding a layer of top soil. The perennial blanket flowers and black-eyed Susans were the most visual at this time of the summer.

On the side and back of their home is a conservation easement area that is a tributary to Egan’s Creek. What a unique view and an opportunity to see many wild animals such as otters, turtles and birds. Steve and his brother have cut back moist of the invasive vines growing in their forest area.

The small flower garden is also special with many colors that accent each other. Having come from Pennsylvania, they have done a marvelous job of planting beautiful annuals and perennials that are happy here in Nassau County.
July Winner

Beautiful Florida Friendly Gardens

View more photos online at http://nassau.ifas.ufl.edu/horticulture/spotlight/spotlight.html. To be considered for Spotlight on Nassau Gardens, send a digital photo, with a description of your garden, along with your name, address and phone number to ncmg@nassaucountyfl.com For more information contact Rebecca Jordi at 491-7340 or 879-1019.
Lygodium japonicum, or Japanese Climbing Fern (JCF), is an adventive species that was introduced into Florida as an ornamental plant in the 1930’s. In Florida it is currently found in the north and western areas of the state, but is quickly spreading and has been found as far south as Broward and Collier counties. It is also found in the southern areas of Alabama, Mississippi, and Louisiana. Japanese climbing fern is able to engulf shrubbery and ground covers by forming a dense canopy of vegetation.

Old World Climbing Fern (Lygodium microphyllum), was found growing in south Florida in the 1960’s. Since that time, this species covers nearly 50,000 acres today. It infests cypress swamps, engulfing tree islands with 90 foot long fronds. Due to the climate, this species does not die back in the winter, allowing for massive growth.

**Description**

Lygodiaceae includes many plants such as Japanese climbing fern, Lygodium japonicum, and old world climbing fern, Lygodium microphyllum. It is often confused because of the close similarities between the species but is easily distinguished by differing leaf characteristics. Old world climbing fern has unlobed leaflets that are glabrous (smooth, not hairy) below. Japanese climbing fern is a perennial vine-type fern, reaching up to 90 feet in length. Its leaves are lacy and finely divided, arranged opposite on the vine. The vines are green to orange to black and wiry, often infesting trees and shrubs forming dense mats of vegetation. Fronds are tan-brown and persist in winter, but remain green in south Florida. Vines formed from branches arise from underground rhizomes, which are slender, black and wiry. Fertile fronds are usually smaller segments with fingerlike projections around the margins. These bear sporangia (spore producing structures) in double rows under the margins. These are very tiny and easily dispersed by wind.

**Impacts**

Japanese climbing fern can grow in sun or shade, damp, disturbed or undisturbed areas. It can grow so dense that it forms a living ‘wall’, leading to the elimination of seedlings and other native vegetation. Japanese climbing fern was added to the Florida Noxious Weed List in 1999. It is also a major problem in pine plantations, causing contamination and harvesting problems for the pine straw industry. Old World climbing fern infests cypress swamps and other hydric sites, forming a monoculture. This massive infestation displaces all native flora and fauna, completely changing the ecosystem of the area.

**Preventative**

Monitoring is very important in the strategy for the management of these climbing ferns. Constant monitoring can aid in the detection of new populations. Steps to prevent spore movement or formation are the key
in controlling climbing fern. Since the microscopic spores are easily transported via clothing, wind and possibly water, contamination is a constant threat. Control measures should be employed when the fern is not producing spores, which occurs in the late summer/early fall. If control measures must be employed during spore formation and dispersal, then these areas should be treated at a time when workers will not be traveling to other sites in the same day. Take care not to drive equipment through the fern foliage, as this will also help to minimize spore movement.

Cultural
Very little strategies have been observed that limit the spread of climbing fern through cultural methods. Because of the small size of the spores, these can travel over great distances and infest seemingly undisturbed areas.

Mechanical
Hand pulling is one mechanical strategy for the removal of small patches of these climbing ferns, however it will regrow from below the cut as well as from hand pulling. Machinery can be used to remove the large mats of foliage that form over vegetation in areas where compaction is not a concern. Fire will kill it back, but regrowth occurs. Fire also causes major damage to the native vegetation as the fire climbs up the vines into the canopy of the trees and shrubs.

Biological
A rust (Puccinia lygodii) of Lygodium spp. in greenhouses is being looked at as a biological control agent to control Japanese climbing fern, although many of the biological control efforts are focused on old world climbing fern. More studies are being done to determine the efficacy of other biological control agents for Japanese climbing fern.

Chemical
Some research has been conducted on both climbing ferns, and it appears a 2 to 3 % solution of glyphosate (Roundup, etc.) is effective. Another herbicide, metsulfuron (Escort), has been shown to provide excellent control at rates of 0.5 to 1 oz. per acre. Be sure to include a non-ionic surfactant at 0.25% (10 mLs or 2 teaspoons per gallon of spray solution). A combination of these herbicides has provided good control when applied in the fall of the year before a killing frost.
**September Checklist**

**Citrus:** Depending on citrus fertilizer label, apply fertilizer every six weeks or as directed. Check for citrus insects and disease. Weed as needed. Water as needed. Last month to fertilize citrus.

**Fruit:** Weed as needed.

**Flowers:** For instant color plant marigolds and garden chrysanthemums.

**Bulbs:** Bulbs to plant now include amaryllis, Aztec lily, calla, elephant ears, grape hyacinth, iris, leopard lily, narcissus, snowflake, watsonia, and zephyr lily.

**Roses:** Apply organic materials (same as February). Water, water, water. September 1, apply granular rose fertilizer. September 1, prune back just beyond previous cut (about 1/3 down the stem).

**Herbs:** Plant anise, basil, borage, chervil, marjoram, parsley, sesely, and thyme.

**Lawns:** Use a slow release fertilizer such as 15-0-15. Most Florida soils are high in phosphorous, the middle number, so this nutrient is rarely needed. Keep mower heights on highest level all year to promote deep roots. Watch for large patch fungus disease, which attacks lawns when the weather is cool and wet. It is most commonly found in St. Augustine, centipede and Bermuda lawns. The grass dies in roughly circular areas 5 to 6 feet in diameter. In St. Augustine grass, the leaf blades rot where they attach to the runner. Apply an approved lawn fungicide according to label directions.

**Perennials:** This is the time of year to prune. When pruning, make cuts back to the branch angle, or to the ground. If you want the plant to fill in from the base, make the cut about 1 foot above where you want the new branches to begin.

**Trees:** Palms should have a “palm special” fertilizer applied over the root system under the spread of the fronds. The configuration should be 8-2-12-4 (N-P-K-Mg). Ideally this would also include manganese, boron, sulfur, etc. with appropriate formulations. Use a slow release fertilizer. If not using slow release, make monthly applications during the warmer months. Many palms are deficient in potassium, in spite of using palm fertilizers. Apply Muriate of Potash to correct this deficiency. For fall color plant deciduous trees such as bald cypress, Chickasaw plum, crape myrtle, redbud, red maple, river birch, sugarberry, sweet gum and winged elm. Trees to plant include black olive, dogwood, golden raintree, hollies, loquat, southern juniper, sugarberry, and wax myrtle.

**Vegetables:** Snap beans, pole beans, beets, broccoli, cabbage, carrots, cauliflower, endive/escarole, lettuce, cucumber, bulbing onions, bunching onions, radishes, summer squash, and turnips.

Selected from Florida Vegetable Guide by JM Stephens, RA Dunn, G Kidder, D Short, & GW Simone, University of Florida and Month-by-Month Gardening in Florida by Tom MacCubbin
October Checklist

**Citrus:** Check for citrus insects and disease. Apply horticulture oil if insects are detected. Weed as needed.

**Fruit:** Weed as needed. Apply azalea fertilizer to blueberry shrubs at 1/2 pound per 3’ of shrub.

**Flowers:** Buy spring flowering bulbs (narcissus, tulips, etc.) and store in the refrigerator for 60 days. Plant bulbs immediately upon removal. Keep them away from ripening fruit during storage. Plant cool season flowers like dianthus, pansy, petunia, shasta daisy, snapdragon, viola, million bells, status, thunbergia, flowering kale and cabbage. Bulbs to plant include agapanthus, gladiolus, kaffir lily, marica, moraea, society garlic, spider lily, anemone, hyacinth, pineapple lily and Star-of-Bethlehem.

**Roses:** Continue spray program. Water, water, water. Cut and remove spent blooms. Fertilize with liquid fertilizer (same as March).

**Herbs:** Anise, basil, bay laurel, borage, caraway, cardamom, chervil, chives, coriander, dill, fennel, garlic, ginger, horehound, lemon balm, lavender, lovage, marjoram, Mexican tarragon, mint, nasturtium, oregano, rosemary, sage, savory, thyme and watercress can be planted now.

**Lawns:** Do not fertilize the lawn this late in the year. For a green winter lawn that will have to be mowed, overseed with annual ryegrass. Watch for large patch fungus disease, chinch bugs, sod webworms, army worms, and mole crickets.

**Trees:** You can remove diseased or dead limbs any time of year. If you plant a tree this month, remember water is the most important part of early tree care. Be sure to dig the hole wider than deep. Do not fertilize now, wait until next spring. Let the tree put its effort into producing roots.

**Vegetables:** Plant strawberries in late October through November. Plant in rows 36” apart and 12” apart within the row. Elevate rows 6” above existing soil to ensure good drainage. Use pine straw to reduce weed problems and slugs. Beets, broccoli, cabbage, carrots, cauliflower, Chinese cabbage, collards, Kohlrabi, bulbing onions, bunching onions, radishes, spinach, and turnips may also be planted this month.

Selected from Florida Vegetable Guide by J.M. Stephens, R.A. Dunn, G. Kidder, D. Short, & G.W. Simone, University of Florida and Month-by-Month Gardening in Florida by Tom MacCubbin
Q: Can you tell me what is causing the orange spots on my anise and ligustrum leaves?

A: I had a strong suspicion I knew the culprit but I wanted to confirm it with some of my Green Team colleagues. We all came to the same conclusion – overhead irrigation from your well water was causing the pitting. These shrubs, once established, do not require heavy irrigation. If you watered them once a month or never again – they would be fine with it. Watering them when they are growing in harsh, parking lot median environments, similar to most commercial sites, is beneficial. But in your situation, a typical home landscape with dappled lighting and mulched pine-straw areas, these shrubs really require little care. We really cause so many disease and environmental problems for our hardy shrubs by overhead irrigation and too much water. Cap the irrigation heads or turn off the shrubbery watering zones. Unfortunately, the damage on the leaves is permanent since these are evergreen shrubs, but ultimately, they will add new leaves and get taller and these ugly leaves can be removed little by little. Don’t strip them all now, that would cause too much stress for the plant – remember leaves provide food for the plant. One other thing, these shrubs really want to be tall shrub/trees. Please consider letting them grow taller than 3 feet. They will bring much more value to your landscape if you let them develop into 8-15 trees. It will take a few years to get them into the final shape you desire but the results are stunning and well worth the effort. Or, think about taking a couple of them and letting them grow to see the results – then call me back and let me know what you think. I believe you will then allow the others to grow tall too. Anyway, those are my suggestions to you – some food for thought. Plus, I would love to know how much you are saving on your water bill once you make the change. Call me and let me know. Water is one of our most precious commodities and we really need to conserve this natural resource.
Q: I received a plant catalog and they mentioned Christmas fern. Can we grow it here?

A: According to North Carolina State University, it is in cold hardiness zone 9, so you might want to try it. Christmas fern, Polystichum acrostichoides, gets its common name from some parts of the plant remain green throughout the year in Northern states which makes it one of the few available greenery plants for use in decorations at Christmas time. The dark, green leaves (fronds) of the fern grow from 2-3 feet long and are about four inches wide. They are tough, leathery and have a pointed tip. The fronds are attached to a relatively short stalk that is brown at its soil base and green toward its apex. So don't worry if you see the color differentiation – it is perfectly normal. It can grow in dense shade to partial shade, but must be kept out of the sun. Dappled light through tree canopy would be acceptable. Soils of moderate moisture and a more neutral pH are preferred. This pH preference is reflected in the increased densities of Christmas ferns in soils found in areas which overlie limestone bedrock, a similar situation for Northeast Florida. Christmas fern is seldom found in soils too waterlogged, so be sure you do not over-water these plants. All of my ferns are seldom watered except by rain. Christmas ferns, like many other ornamentals, are susceptible to fern scale insects and mealy bugs which can cause extensive damage to the plants if not caught early. Food grade diatomaceous earth (not the powder used in pool filtration) will control the mealy bugs. You can also apply ultra-fine horticulture oil or insecticidal soap for the scale or mealy bugs. Christmas fern is a much better choice of fern than the Class I invasive Boston or Sword fern. Please, please, please, stop planting the invasive fern (Boston) in the landscape and in palms – sorry, I got on my soap box!

Q: I have small to large areas of my St. Augustine lawn which have yellowing blades. They can easily be pulled up and seem to be rotting. Some of the edges look like circles. The smaller areas are about a foot across while other areas are much larger – almost 10 feet wide. What could be the cause?

A: I believe you most likely have a fungal growth called large patch or brown patch, which is commonly found in St. Augustine grass. The fungal agent is called *Rhizoctonia solani*. This disease is most likely to be observed from November through May when temperatures are below 80°F. It is normally not observed in the summer.

Infection is triggered by rainfall, excessive irrigation, or extended periods of high humidity resulting in the leaves being continuously wet for 48 hours or more. This disease usually begins as small patches (about 1 ft. in diameter) that turn yellow and then reddish brown, brown, or straw colored as the leaves start to die. Patches can expand to several feet in diameter. It is not uncommon to see rings of yellow or brown turf with apparently healthy turf in the center. Turf at the outer margin of a patch may appear dark and wilted.

Avoid excess nitrogen during potential disease development periods. Limit readily available forms of nitrogen, such as soluble liquids or quick-release nitrogen sources, just prior to or during these periods. Instead, use slow-release nitrogen sources. Apply a balanced fertilizer containing equivalent amounts of potassium and nitrogen, preferably a slow-release potassium form. Irrigate only when necessary and do so only in the early morning hours when dew is already present.

Since mowers can spread this disease, mow diseased areas last, and wash turf clippings off the mower before proceeding to the next site. Chemical controls are listed in the publication attached, be sure to follow the directions on the label and alternate the type of chemicals used. But nothing will change if the watering and fertilizing practices are not corrected. [http://edis.ifas.ufl.edu/lh044](http://edis.ifas.ufl.edu/lh044)
Q: Please give me some information about Chinese cabbage. I am considering planting it here.

A: Chinese cabbage is a cool season vegetable which means it should be grown here from fall to early spring. It grows best with short days and moderate to cool temperatures (60 to 70°F). Direct seeding is possible, especially for the fall, in loamy to sandy soil. It is critical to keep the soil moist during seedling establishment. It is also desirable to have an area protected from the wind when seeding cabbage. Although cultivars will vary in their response to temperature, they can bolt or form seed stalks when the temperature falls below 60°F and injury can occur during severe freezes. It is best to prevent this from happening as it may cause the cabbage leaves to become bitter. Most Chinese cabbage is harvested by cutting the entire plant just above the soil line. Old, ragged, and decayed outside leaves should be removed. The heads or entire plants are then ready for washing, using, or storage. Chinese cabbage is a fairly new vegetable to the United States since we have been planting it for only the last 100 years. There are two common types of Chinese cabbages called the Pekinensis (pe-tsai) group or the Chinensis (bok choy or pak choi) group. Pekinensis contains celery cabbage, Chinese white cabbage, Peking cabbage, pe-tsai, won bok, napa or nappa (Japanese), hakusai (Japanese), pao, hsin pei tsai (Mandarin), bow sum and bok choi (Cantonese). The Chinensis group contains celery mustard, pe-tsai (Mandarin), pak choi (Cantonese), chongee (Japanese), and Japanese white celery mustard. Chinese cabbage can be sautéed, chopped, stirred fried and even eaten raw. The shape of the cabbages varies widely as does the taste. The Chinese and Japanese have been working on breeding programs for generations and we can take advantage of their hard work. The attached publication from the University of Florida contains specific cultivars of each of these groups – please refer to it for the best choices to plant in our area. http://edis.ifas.ufl.edu/pdffiles/MV/MV03600.pdf

For more Garden Talk” questions answered by Ms. Jordi, see our website at nassau.ifas.ufl.edu/