The earliest written account of bird feeding in the United States dates back to 1845, when Henry David Thoreau reported feeding birds at Walden Pond. The first commercially-made bird feeder was designed for hummingbirds and went on the market in 1926. Today, more than 50 million Americans put out a billion pounds of bird food each year.

In most cases, native plants are best-suited to provide food for birds and require little maintenance. One of the most effective ways to attract birds to your backyard is to use native plantings to provide the natural habitats that have supported them for thousands of years. However, bird feeders can be used to supplement the food provided by native plantings. They also provide a way to observe birds at close range.

Before placing bird feeders in your backyard, consider the bird species you would like to attract. Different birds are attracted to different bird feeders and foods. The following suggestions are useful guidelines, but it is best to experiment. Try a variety of feeders and foods located in different spots around your yard.

**Types of Feeders**

A wide range of different bird feeders is available. Some are non-selective and used by a variety of birds; others are more selective, attracting only one or two specific species. If you are interested in attracting a wide diversity of birds to your yard, consider installing at least two of the different types of feeders discussed below.

**Tube feeders** - These hanging feeders can be filled with a variety of different seeds. A tube feeder is a hollow cylinder, usually made of clear plastic or glass so that the seed is clearly visible, with multiple feeding ports and perches. The feeding perches of most tube feeders are located below the feeding ports. Because these perches are generally fairly short, usually only small birds such as chickadees, titmice, wrens, and finches can eat from tube feeders. Some tube feeders have perches above the feeding ports. These are only suitable for small birds that can feed hanging upside down, such as goldfinches and chickadees.

**Hopper feeders** - These large feeders, as with tube feeders, are primarily used to provide seed. They come in many whimsical designs, but the most common resembles a small barn with clear plastic sides positioned in a V shape. These sides funnel the seed.
downward and out as it is eaten. Hopper feeders typically hold a lot more seed than other feeders and require filling less often. The quantity of seed they hold can attract squirrels, however. Hopper feeders attract all the same species as tube feeders, along with larger birds like blue jays, cardinals, grosbeaks, and woodpeckers.

**Platform feeders** - These tray feeders are comprised of a flat, raised surface on which seeds, fruits and other foods are spread. Some have roofs, which help keep seeds dry. Although it is important to keep all feeders clean, extra care must be taken with platform feeders. This feeder type has been cited in studies as having a higher rate of disease transmission among birds because their droppings collect on the platform and mingle with the food. To reduce the risk of disease transmission, use a platform feeder with a wire mesh bottom to allow droppings to be washed away during rain. Platform feeders located close to the ground can be used to attract a slightly different bird audience that includes ground feeding doves, juncos, blackbirds, towhees and sparrows. Platform feeders located higher above ground will attract many of the birds that visit tube and hopper feeders.

**Suet feeders** - Woodpeckers, bluebirds, cardinals, chickadees, jays, nuthatches, titmice, and wrens are all regular visitors to this type of feeder, which is usually a simple wire cage sized to hold a suet cake. The birds that visit the feeder cling to the wires and peck at the suet inside. Look out for bottom suet feeders that are specially made for clinging birds like woodpeckers and nuthatches that can hang upside down and feed.

**Nyjer feeders** - These feeders are filled with nyjer (also called niger or thistle), a small seed very popular with American goldfinches, purple finches and pine siskins. However, most other birds will not feed from them. There are two general types of nyjer feeder. The first looks similar to a tube feeder, the only difference being that the feeding ports are much smaller. The second, often referred to as a “thistle sock,” consists of a fine mesh bag. Feeding birds cling to this bag to extract the seed. More robust “thistle socks” are made from metal mesh. The birds that visit nyjer feeders are only present in Florida during the winter. Therefore, you only need to put them out in your yard between October and March.

**Nectar feeders** - Nectar feeders are primarily used by hummingbirds. They are designed to mimic the flowers from which these birds get their nectar and are usually filled with sugar water. They come in a variety of shapes and sizes, but most feature plenty
of red, since this is a very attractive color to the tiny birds. Orioles, cardinals and woodpeckers will also use nectar feeders with larger feeding ports. Nectar feeders must be frequently cleaned because the sugar water they contain rapidly ferments and poses a serious threat to feeding birds. See cleaning section below for cleaning instructions.

**Fruit feeders** - These hanging feeders come in a mix of styles. All are designed to hold large fruit pieces consumed by bluebirds, orioles, house finches, woodpeckers, and a range of other species.

**Food**
The type of food you stock in your feeder determines which birds you will attract. Some birds like seeds, fruit, or insects, others suet, and a small number nectar. A vast number of companies produce bird seed mixes that vary in content, cost, and quality. Although common, bird seed mixes are not usually the best choice. Seed mixes frequently contain more unwanted food, such as milo, oats, and red proso millet, than desirable food, such as sunflower. When these mixes are used, birds will empty your feeder quickly eating only the seeds they like and scattering the rest on the ground. Usually a single seed or making your own seed mix is preferable. When purchasing seed for birds, do not buy any coated with a red or pink dye. Seeds intended for planting are often treated with a fungicide called capstan and are marked with the red dye as a warning. Capstan is extremely toxic to birds.

**Sunflower** - Black-oil sunflower is the preferred seed of many birds and is generally the best all-around attractant. Its kernels are high in energy. In addition, its small size and thin shell make it easy for small birds to handle and crack. Striped sunflower seeds are larger and have a thicker shell making them difficult for small birds to consume.

**Safflower** - The shell of safflower is thicker than black-oil sunflower, making it harder for some birds to crack open. However, it is a favorite of cardinals and grosbeaks, and nuthatches, finches, and titmice enjoy it, too. Cardinals and grosbeaks both like to feed from hopper and platform feeders. This makes these feeders a good choice for offering safflower.

**Millet** - Many of the small-beaked ground feeding birds such as quail, doves, juncos, towhee, and sparrows enjoy white proso millet. However, cowbirds, house sparrows, European starlings, and a number of other, unwelcome bird species enjoy millet, too. These species can congregate in large numbers and become a nuisance at feeders. Red proso millet is typically an unwanted food, and birds will frequently discard it in preference of other seeds.

**Cracked corn** - Corn is a less desirable feed because

Platform feeders are comprised of a flat, raised surface on which seeds, fruits and other foods are spread. Credit: E. Willcox.
corn kernels rapidly soak up water, leaving them vulnerable to rot and contamination by aflatoxins, which are extremely toxic to birds even at low levels. Therefore, corn must be stored with care in situations where it is to be used as bird food and should not be used in feeders in wet or damp weather. Medium cracked corn is as popular as white proso millet with ground-feeding birds such as quail, doves, jays, juncos, towhees, and native sparrows. It is also enjoyed by larger birds including crows, turkey, ducks, and cranes. It can be fed in small amounts, mixed with white proso millet, on platform feeders and in hopper feeders. Be aware that, as with millet, it can attract unwelcome species such as cowbirds, house sparrows, and European starlings.

**Nyjer** *(niger or thistle)*- Goldfinches, house and purple finches, and siskins are extremely fond of nyjer and will select it in preference to most other foods. However, it is expensive compared to other seeds, costing around $1.50 a pound, leading to its nickname “black gold.” Nyjer seeds are very small compared to other seeds. Their small size, along with their cost, makes it important to provide them in specially designed feeders made of mesh or with small feeding ports. A good nyjer feeder will allow many birds to feed at once, while not allowing excess seed to be wasted. Commercial nyjer seed is grown in Africa, India, and other areas of Southeast Asia and exported around the world. As nyjer is an exotic species, and the seed can be contaminated with noxious weeds, it is sterilized using intense heat prior to being imported into the United States. This prevents the nyjer and other contaminating seeds from germinating.

Milo, wheat and oats- Low-priced bird seed blends frequently contain milo, wheat, and oats. However, most birds prefer to eat other foods and will discard these on the ground where they accumulate and attract rodents. The only birds that really consume these seed types are quail and doves.

**Suet**- Suet is rendered animal fat. It provides a high-energy food source popular with woodpeckers, chickadees, titmice, nuthatches, wrens, kinglets, northern mockingbirds, brown thrashers, starlings, jays, and certain warblers. Like corn, peanuts have a high chance of harboring aflatoxins and must be kept dry. They can be

There are two general types of nyjer feeder, one, often referred to as a “thistle sock,” consists of a fine mesh bag. Credit: B. Edmonds.
provided in feeders similar to those used to feed thistle but with a larger mesh, as well as tube, hopper and platform feeders.

**Sugar water**—Sugar water is used as a substitute for the nectar consumed by hummingbirds. Orioles, cardinals, and woodpeckers will also feed on sugar water. It can be made by mixing and boiling four parts water and one part sugar. Do not use honey to make sugar water as it can spread a fungal disease lethal to the tiny birds. Alternatively, convenient, ready to mix nectar packets and bottles of concentrate can be bought from many stores. Nectar containing red coloring should be avoided. The coloring can be toxic and is not necessary to attract hummingbirds, providing the feeder has some red colored parts.

There are a range of other bird foods you can try. Bluebirds and orioles like mealworms. These birds, along with house finches and woodpeckers, also like fruits such as apples, oranges, peaches, berries, and bananas. Be creative, try a variety of foods, and see what birds you can coax into visiting your yard.

**Feeder Location**

When deciding where to locate your feeders, there are a number of things you will need to consider. You will, of course, want to make sure you have a good view of the feeder from where you intend to watch visiting birds. You should think about the different birds that will visit the feeders and their feeding styles. Some birds feed on the ground and others at shrub and tree height. To minimize crowding and attract the greatest diversity of species, provide low platform feeders for ground feeding birds, and hopper, tube, niger, suet, and raised platform feeders at different heights for shrub and treetop feeders.

If you have a small garden, where it is not possible to locate feeders away from your house, birds may frequently strike your windows. In such situations, research suggests it is preferable to locate feeders closer rather than farther away from windows, within 3m of a window is considered best. Most birds collide with windows as they leave a feeder. Placing feeders close to your windows will prevent visiting birds from building up enough momentum to cause serious injury if they strike the window when they try to fly away. Mobiles, decals and other decorations hanging outside windows also help to prevent bird strikes.

Many birds using feeders like to have shrubs and trees nearby where they can perch or escape from aerial predators such as hawks. However, placing your feeders among or too close to shrubs and trees puts feathered visitors at increased risk from ground predators, particularly domestic cats. Locate feeders 10–15 feet from bushes to provide perching spots and a place to escape from aerial predators without giving domestic cats hiding places close enough for them to pounce on unsuspecting birds.

If you have the space, consider placing several feeding stations throughout your yard. This is effective for two reasons. First, some birds like to feed near vegetation and others out in the open. By placing a number of feeders in different places, you will draw a greater diversity of birds. Secondly, it will help prevent overly aggressive individuals that chase other birds from controlling access to all feeders.

**Cleaning**

It is essential to maintain a clean bird feeding environment in order to discourage disease. You should clean your feeders at least once every two to
three weeks to ensure they do not accumulate moldy and decomposing seeds, bird droppings or other contaminants that can make birds sick. The heat and humidity of Florida are perfect conditions for mold growth. Therefore, during periods of warm or wet weather, it may be necessary to clean them more regularly. To clean glass, ceramic and plastic bird feeders (except hummingbird feeders) use a 10% bleach solution (1 part bleach to 10 parts hot water), taking care to ensure they are completely dry before refilling. To clean wooden bird feeders use hot soapy water and a bristled brush. You should change the sugar water in hummingbird feeders at least every 3 to 5 days to prevent deadly fermentation and mold growth. In hot weather or direct sunlight, the fermentation process speeds up. Under these conditions it may be necessary to change the sugar water more often. Hanging feeders in the shade can help slow the fermentation process. To clean hummingbird feeders, use hot water and a bottle brush. Unlike other feeders, hummingbird feeders should not be cleaned with bleach, soap, or any type of detergent to prevent contamination of the nectar when they are re-filled. Clean the ground below your feeders regularly to prevent a build-up of hulls, uneaten seeds, and other waste. Moldy or spoiled food is unhealthy both for birds and outside pets, and bird food scattered on the ground can attract unwanted rodents.

**Squirrels**

Squirrels are a nuisance at many bird feeders. They become a real problem when they take over a feeder, scaring away birds and tossing seed around. Squirrels are extremely agile and any bird feeder hanging from a tree is likely to become a squirrel feeder. They also have strong teeth and can chew easily through plastic and wooden feeders to get at their contents. When selecting a feeder, look for one that has squirrel-proof features such as metal feeding ports and perching posts or that has a domed overhang to prevent squirrels from gaining access. You can also install your feeders on a pole with a baffle that prevents squirrels climbing up from the ground to access food. The pole, with attached feeders, should be located 10–15 feet away from tree trunks and overhanging limbs as squirrels are capable of jumping up to 10 feet. If you store your supply of bird food outside, it is best to keep it in a securely closed metal container. Squirrels can chew through containers made even from heavy plastic.

**Cats**

House cats kill hundreds of millions of birds annually in the United States. To help keep visiting birds safe, locate feeders away from areas of ambush cover, such as shrubs and brush, where cats can lie in wait to attack. A cat’s instinct to hunt is not related to hunger. Even a well-fed cat will hunt. Generally, putting a bell on your cat’s collar will not prevent it from capturing birds. If you are keen to convert your yard into a haven for feathered visitors, keep your cat indoors where it cannot hunt wildlife, preferably all the time, but at a minimum between sunrise and three hours after sunrise, when birds feed most heavily and congregate around bird feeders. Try providing inside cats with a sunny window seat so that they can bask and watch birds safely without harming them or coming to grief themselves from traffic, disease, and fights with other animals.

**No Birds Visiting Feeders?**

Be patient: when you first place feeders in your yard, it may take some time for birds to find the new food source and start using the feeders. If no birds visit your feeder within 1–2 weeks of setting it up, try sprinkling some seeds on the ground to help them find it. If the birds still do not come, it may be that they are uncomfortable with the feeder location. In these situations, moving feeders to a new place can help. Including more bird-friendly native plants in your landscaping and garden can also draw birds, which will then use your feeders.
Making healthier food choices, saving money, growing better crops, conserving water and energy—if you’ve learned how to do it, chances are you learned it from Florida Extension. If you’ve ever been to a 4-H youth development camp or gotten help from a Master Gardener, you know Florida Extension.

On our 100th Anniversary, Florida Extension is proud of its accomplishments, and we look continuously towards the future, finding solutions to the challenges we’ll face over the next 100 years and sharing them to make life healthier, happier and more prosperous for you.

The Smith-Lever Act of 1914 established the Cooperative Extension Service, which allows us all to benefit from the knowledge of our land-grant universities. Extension has helped millions of Floridians by tapping the latest information from the research engines of the University of Florida and Florida A&M, converting it into practical knowledge we use every day.

SOLUTIONS FOR THE NEXT 100 YEARS

- Improving agriculture
- Conserving water
- Protecting natural resources
- Managing invasive pests
- Enhancing family life
- Educating youth through 4-H
- Promoting food safety & nutrition
- Overcoming natural disasters
- Educating gardeners
- Creating beautiful spaces
- Living sustainably
Program Announcements

Landscape Matters 10AM-11AM

Perennials
Wednesday May 7
Master Gardener Shirley Lohman

Herbs
Wednesday June 4
Master Gardener Claudie Speed

Plant Clinics 10AM-2PM

Monday May 5
Monday May 19
Monday June 2
Monday June 16
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 - 2PM for expert advice.

Location
Yulee Satellite Office
86026 Pages Dairy Road
Yulee, FL

Saturday May 10
Ace Hardware Fernandina Beach

Spring 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.

Spring Plant Sale 2014

Saturday May 31 9AM-12PM
Demonstration Garden
Yulee Government Complex
96135 Nassau Place Yulee, FL

Master Gardener Program

Do you love plants, trees, and gardening? Would you enjoy volunteering your time to help teach youth and newcomers in your community? Then perhaps you should become a University of Florida/IFAS Master Gardener Volunteer! It requires 75 hours of volunteer time to be given back to Nassau County Extension the first year and 35 hours every year thereafter. Ten sessions held on Wednesdays will begin at the end of July and end with graduation the beginning of October. CD Manuals will cost $65. If you are interested and would like an application packet please call 879-1019 or 491-7340 or e-mail rljordi@ufl.edu.
Rebecca L. Jordi, Nassau County Extension Director/Horticulture Agent recently hosted her colleagues from the Northeast Florida Area. The Horticulture Agent group, called the NE FL Green Team met at White Oak Conservation Center. They met to discuss district issues - water, plant diseases, insects, etc. They also planned future regional classes and meetings for Master Gardeners; and fine-tuned an evaluation survey for water conservation. After their business meeting, the group had a tour of the area dedicated to animal preservation. Nassau County Extension has developed a strong partnership with White Oak Conservation Center and conducts sessions for their summer camp.
More and more people are considering including edible plants to their landscapes. Nothing is more rewarding than seeing a tree you planted produce fruit. You simply walk out to your yard and pick the fruit once it is ripe. Consider adding some stone fruit trees. You get the benefit of a lovely shade tree in the summer and wonderful fruit in the spring, summer or fall. You may be wondering first of all, “What is a stone fruit?” Stone fruits are fruits with large hard seeds found in fruits such as peaches, plums, nectarines, apricots and cherries. However, in Northeast Florida, cherry and apricot are not typically grown here with much success.

It is thought the Spaniards originally brought peaches to Florida in the 1500s when they settled in St. Augustine. Franciscan monks were probably the first to introduced peaches to St. Simons and Cumberland islands around 1571. Although cultivated peaches covered almost 4,000 acres of Florida in the 1960s and ‘80s, hard freezes took a hard toll on the cold-sensitive trees. Since then, the University of Florida stone fruit breeding program and other institutions such as Auburn University have developed more cold hardy and unique varieties which are able to have lower chilling hours. Some of these varieties are distributed around the world.

One of the most notable new peach characteristics found in the local grocery store are varieties are called “non-melting.” The “melting” varieties are known to be ripe when they became red, soft and juicy. However, these are not practical for transporting from field to grocery as the fruit bruises easily. The skin breaks open which makes for problematic shipping and a short shelf-live at the retail market. To solve those problems, non-melting varieties were developed which enables the flesh to stay firmer even when ripe.

“In non-melting peach varieties, even if it is red it doesn't necessarily mean it is ripe. Smell the fruit and lightly press the end of the fruit to see if it is soft. Then you will know if it's ripe,” said Dr. Mercy Olmstead, Assistant Professor and stone fruit specialist from the University of Florida. Produce managers should also know the specific peach variety sold in the store. Peaches with “Gulf” or “UF” in the name will be non-melting varieties. You probably have also heard the of “cling” peaches. These are the peaches in which the flesh “clings” to the peach pit. Most of the varieties developed by UF are cling peaches. The flesh can be very sweet but it is firmer than the melting varieties. The “melting” peach flesh easily separates from the pit.

Before you buy a peach, plum or nectarine tree for planting in the landscape, you should know which varieties produce best in your chill unit zone. Each of these stone fruits requires a certain number of
“chill units” to leaf out and bud normally. Nassau and Duval counties are high chill unit zones and get 500-600 chill units on average each winter season. Stone fruit varieties requiring 400 or more chill units will grow best in north Florida.

“Too many chill units can result in freeze damage to the blooms and tree death,” said Dr. Olmstead. This will ultimately reduce the amount of fruit produced that year.

Peach varieties recommended for north Florida are ‘UFGlo’, ‘JunePrince’, and any in the ‘Gulf’ series which are Gulfcrest, Gulfcrimson, Gulfprince, Gulfking or Gulfsnow. Because the UF and Gulf varieties are patented they can only be purchased from licensed nurseries. For more information on these varieties and to find nurseries go to [http://hos.ufl.edu/extension/stonefruit](http://hos.ufl.edu/extension/stonefruit) or contact your Nassau County Extension Service.

Unfortunately, plum and nectarine varieties currently available only have chill unit requirements between 200 and 300. Therefore, plums and nectarines planted north of Orlando need to be carefully protected from prolonged bouts of cold weather.

“Prune your trees twice a year. The best fruiting wood is pencil width and one year old so prune to keep wood small and young,” said Dr. Olmstead.

If you have problems with your trees, please bring in live specimens of insects or leaf clippings to your county Extension office for identification assistance and recommendations. Homeowners with a few trees should contact Rebecca Jordi, UF/IFAS Environmental Horticulture Extension agent. If you have a small farm with an orchard, please contact Amanda Burnett, UF/IFAS Agriculture/Natural Resource Extension Agent. Both can be reached at 904 879-1019 or 904 491-7340. The main office hours in Callahan are 8am-5pm Monday –Friday. Check out the University of Florida publication on stone fruit for orchards and homeowners: [http://edis.ifas.ufl.edu/mg374](http://edis.ifas.ufl.edu/mg374)

Now, we hope we have piqued your curiosity and maybe you are considering planting a few fruit trees. Now get out there and start digging!
Hello everybody! Welcome back to Harvest Gold! I remember when I was going up, Sundays were always reserved for two things: Church and family. We started out by going to Church, and then it was back home to have Sunday Dinner. My Grandmother would put on a Sunday feast that would rival any Thanksgiving dinner you ever saw! After dinner, the adults would go into the living room to relax for a while, while us kids would go outside to play. A couple of hours after that came the highlight of Sunday family time—the ride through the country. We would all pack up in the car, and head towards Kings Ferry. Back then, there were not as many houses on Kings Ferry Road as there are now; probably no more than a dozen or so between Hilliard and Kings Ferry. Along the ride, my grandfather would always point out the old oak tree that stands sentinel over the spot where the one-room schoolhouse of his youth once stood, and the palms that mark the spot of his family’s old homestead. When we got to Kings Ferry, we would then cut over to US 1 via Lake Hampton Road, but before returning home, we would stop at the fish camp on Lake Hampton to get an ice-cream treat and take a walk on the boardwalk extending over the lake. These were happy and carefree times! During the springtime and early summer, these rides were especially enjoyable, because we all took along buckets to pick the blackberries that seemed to grow in abundance along the fence lines on our route. Even though we would get pretty scratched up from the thorns on the blackberry bushes, it was all well worth it because my grandmother would then preserve this bounty for future use, always setting aside a few berries to make a delicious blackberry cobbler to compliment the next Sunday’s family feast.

Several blackberry species are native to Florida, and many people still harvest wild blackberries. You do not find blackberries growing wild as much as you used to. Fortunately, many types of blackberries are available at local nurseries that can be purchased and grown in home gardens, and a good number of these cultivars are even thornless. Several thornless cultivars that have been recommended for Florida homeowners include Ouachita, Arapaho, Navaho, and Natchez.

Blackberry plants are best planted anywhere from December through February, and are usually harvested in May and June. Blackberries prefer a site with good air circulation and good drainage. When planting, cut back shoots to about 6 inches, and plant at the same depth plants were growing at the nursery. In general, erect cultivars are spaced about 2 to 4 feet apart, and trailing cultivars about 3 to 5 feet apart. Although many blackberries are self-fruitful, to insure a plentiful crop,
it is a good idea to plant a couple of different cultivars to insure good pollination. Blackberries do not require much fertilizer, but if you do fertilize, don't over do it. About ¼ to ½ pound of a balanced fertilizer such as 10-10-10 per plant, once in the winter and again in the summer, should be sufficient. Control weeds by mulching with pine bark or pine straw.

During their growth cycle, blackberry plants produce shoots known as canes. New, or first year canes, are called primocanes. Primocanes do not produce fruit until the second year, when they are called floricanes. To promote lateral branching, it is beneficial to tip primocanes once the canes reach about three feet tall. If the plant is especially vigorous, it may benefit from two tipings. Since floricanes dry up and die after fruiting, prune out and discard all floricanes after fruit is harvested. Primocanes can also be tipped at this time.

Blackberries are not only delicious, but also provide many health benefits. One cup of raw blackberries contains only 62 calories, 2 grams of protein, 1 gram of sodium, less than a gram of fat, and no cholesterol. They are also rich in fiber, Vitamin C, Vitamin K, and the essential mineral manganese. Research indicates blackberries also contain compounds that reduce the risk of periodontal disease, promote healthy skin, protect against brain and cell damage, and reduce the risk of heart and cardiovascular disease. Research also indicates that regular consumption of blackberries aids in preventing age-related decline in motor and cognitive function, and may promote greater short-term memory performance. Finally, the dark color of blackberries indicates that they are high in antioxidants, which have been proven to lower the risks associated with many types of cancer.

For more information about these delicious and nutritious fruits, see the EDIS publication The Blackberry at http://edis.ifas.ufl.edu/hs104.

Another berry the family enjoyed when I was growing up is strawberries. I remember my grandfather planting strawberries. He would create a wide row, cover the row with black plastic, cut two rows of holes down both sides of the plastic, and set the strawberries in. Often, he would mulch around the plants with pine straw. These were the best tasting strawberries I have ever had in my life. Store-bought strawberries, like store-bought tomatoes, are never as good as what you can grow at home.

Here in North Florida, strawberries are best planted in the fall, from mid September to mid October. Flowering and fruit production usually begins in November or December, and continues until April or May. There are a number of strawberry cultivars that do well in Florida, among them Strawberry Festival, Florida Radiance, Winterstar, Camarosa, Sweet Charlie, Winter Dawn, and Florida Elyana.

Plant strawberries in full sun on raised beds to promote good drainage. Strawberries can also be planted in various types of containers, such as strawberry pots, planter boxes, barrels, and hanging baskets. If you choose to plant strawberries directly into the garden, the best method is to create a wide raised bed, approximately 3 to 3 ½ feet wide, and plant the plants in double rows along each side of the bed (space plants about 12 to 14 inches apart). Incorporate about two pounds of a balanced fertilizer with micronutrients per 10 feet of row while preparing the bed. Black polyethylene sheeting (1 to 1.5 mils thick) on 48 to 60 inch wide rolls with holes or slits cut into it at the appropriate intervals for the plants can be used to cover the raised beds. This sheeting provides excellent weed control, and keeps the fruit cleaner than if it were lying directly on the soil surface. If you wish, you may also mulch around the plants with
pine straw to give the plant a little extra protection. When setting out the transplants, be careful not to set the plant too deep, covering the crown, or too shallow, leaving the roots exposed. Water well until plants are established. Once plants are established, cut back to about one watering per week while plants are small. Later, when plants begin fruiting, irrigate two or three times per week. (Water using either drip irrigation or soaker hoses in order to minimize the spread of disease.)

Although strawberry plants grow well in North Florida during the winter, and plants usually do not sustain any permanent damage unless exposed to prolonged temperatures in the lower 20’s, flowers and fruit can be damaged by air temperatures below 32 Degrees Fahrenheit. One practical way to prevent freeze damage to flowers and fruit is to cover plants with old sheets or blankets the afternoon before an expected freeze, and remove the covering the next morning after the freeze danger has passed.

Strawberries, in addition to being the most popular berry in the world, are also quite healthy. One cup of ripe strawberries (about 8 large berries) contains only 46 calories. Strawberries contain no cholesterol, are low in sodium, and rich in Vitamin C and B-Complex Vitamins. Strawberries are also good sources of dietary fiber, Vitamin A, Vitamin E, and the essential minerals potassium, manganese, fluorine, copper, iron, and iodine.

Recent scientific studies have found strawberries to be high in anti-oxidants, and suggest that consumption of strawberries helps protect against breast, cervical, colon, and esophageal cancers. Other studies also suggest that regular consumption of strawberries promotes heart and cardiovascular health, helps improve cognitive and motor function, is associated with improved regulation of blood sugar and a decreased risk of Type 2 diabetes, and helps lessen the effects of inflammation related diseases of the eye and inflammation-related arthritis.

For more information on strawberries, see the EDIS document Growing Strawberries in the Home Garden at [http://strawberry.ifas.ufl.edu/growing_strawberries_in_the_flor.htm](http://strawberry.ifas.ufl.edu/growing_strawberries_in_the_flor.htm).

When I was growing up, we had a large huckleberry bush growing up in the field. It was about 10 feet tall, and equally as wide. When school got out for the summer, my grandmother would often give us kids a couple of containers, and ask us go up in the field and pick the huckleberries (I think she probably did this to get us out of the house). Anyway, this was one chore we did not mind doing, because we knew she would turn these delicious huckleberries into a pie, huckleberry turnovers, or delicious huckleberry ice cream.

Huckleberries are simply wild blueberries, and blueberries are one of the few fruits native to North America. Native Americans have cultivated and enjoyed blueberries for thousands of years. European colonists learned about blueberries from the Native Americans, and sent many blueberry species back to Europe for cultivation there. Today, blueberries are cultivated throughout the world, and most of these come from species that originated in North America. The United States produces over half of the blueberries harvested in the world today. In terms of fruit consumption, blueberries are second only to strawberries as the most popular berry consumed in the United States.

There are two types of blueberries that grow well in Florida: rabbiteye and Southern highbush. Rabbiteyes are best adapted for growth here in North Florida, whereas Southern highbush do best south of Ocala. Rabbiteyes are also easier to grow than Southern highbush, and are more drought tolerant, more vigorous, and less susceptible to Phytophthora root rot. Also, if early-, mid-, and late season varieties are planted, harvest season for rabbiteyes can extend from May to July. Early-season rabbiteye varieties recommended for Florida are Beckyblue, Bonita, Climax, and Austin, with Climax being the preferred pollinator. Recommended mid-to late-season rabbiteye cultivars are Brightwell, Powderblue, Titblue, Woodard, Chaucer, and Bluegem.
(Keep in mind, most blueberry species require cross-pollination from another cultivar of the same type, so to insure the best possible harvest, plant at least two different cultivars.)

The best time to plant blueberries is from mid-December to mid-February, and plants should be spaced a minimum of 7 feet apart. Choose a site that receives at least 4 to 5 hours of sun per day, with well-drained acidic (4.0 to 5.5 pH) soil rich in organic matter. When preparing the hole for planting, it is recommended that about ¼ to ½ cubic foot of sphagnum peat moss be incorporated into the hole to help promote the proper pH level and add organic matter to the soil. Once planted, mulch blueberries with a layer of pine bark or pine straw about three inches deep extending about two feet out from the plant. (Pine bark and pine straw mulch not only moderate soil temperatures and aid in weed control, but as they decompose, add organic matter to the soil and help maintain the proper pH level). Water blueberries well until established. Once established, mature rabbiteyes are about as drought tolerant as azaleas, and require little irrigation except during prolonged dry spells.

Do not over-fertilize blueberries. Frequent, light fertilization is best, because too much fertilizer added at one time can kill or injure the plants (believe me, this is true—I have killed many blueberry plants with “kindness” by over-fertilizing—of course, that was before I became a Master Gardener). During the first year of growth, fertilize each plant with about 1 ounce of a good “camellia-azalea” fertilizer spread in a circle about 2 feet in diameter with the plant in the center. Do this four times a year, in April, June, August, and October. During the second year of growth, increase to 2 ounces of fertilizer four times a year spread in a 3 feet in diameter circle. During the third and subsequent years, increase to 3 ounces of fertilizer four times a year spread in a 4 foot in diameter circle.

Blueberries are not only popular, but are one of the healthiest of fruits. A one cup serving of blueberries contains only 85 calories. Blueberries contain no cholesterol, practically no fat or sodium, and are high in fiber, Vitamins C and K, and the essential minerals of manganese and copper. Blueberries are also ranked the highest of any fruit for antioxidants, and because of this are effective in the prevention of certain types of cancer, such as breast cancer, colon cancer, esophageal cancer, and cancers of the small intestine.

Studies have shown that regular consumption of blueberries helps not only to prevent cancer, but aids in promoting overall health throughout the body. Consumption of blueberries has been shown to help improve memory, and slow down or postpone the onset of age-related cognitive diseases such as Alzheimer’s. Regular intake of blueberries also promotes cardiovascular health, has been shown to improve cholesterol levels, helps promote eye health, and has a favorable impact on blood sugar regulation in people already diagnosed with blood sugar problems.

For more information about blueberries, see the EDIS document the Blueberry Gardener’s Guide at http://edis.ifas.ufl.edu/mg359.

Well my friends, that’s about all for today. Grab a few blackberries, strawberries, or blueberries, and enjoy a treat to your health. Be sure to check out the “berry” delicious recipes following this column (sorry about that one—I could not resist!). Until we meet again, take care, God Bless, and Happy Harvesting!

Peace and Goodness,

Joseph
Kathy’s Strawberry Spinach Salad

Ingredients

- 2 Tablespoons Sesame Seeds
- 1 Tablespoon Poppy Seeds
- ½ Cup White Sugar
- ½ Cup Olive Oil
- ¼ Cup Distilled White Vinegar
- ¼ Teaspoon Paprika
- ¼ Teaspoon Worcestershire Sauce
- 1 Tablespoon Onion (Minced)
- 10 Ounces Fresh Spinach
- 1 Quart Strawberries
- ¼ Cup Almonds (Blanched and Slivered)

Directions

Whisk together the sesame seeds, poppy seeds, sugar, olive oil, vinegar, paprika, Worcestershire sauce, and onion. Cover and chill for at least an hour. Rinse, dry, and tear spinach into bite-sized pieces. Wash, hull, and slice strawberries. In a large bowl, combine the spinach, strawberries, and almonds. Pour dressing over the salad, and toss. Refrigerate for about 10 to 15 minutes before serving.

Notes

This is a salad that I often make. Not only is it quite delicious, but between the spinach and the strawberries, is also very good for you. Be sure to chill for a while before serving so that the delicate flavors of the dressing have time to intermingle in sweet perfection.

Recipe courtesy of Kathy Warner
**Vicki’s Pickled Blueberries**

**Ingredients**

- 2 Two Inch Cinnamon Sticks  
  (Broken into Small Pieces)
- 1 Teaspoon Whole Cloves
- 1 Teaspoon Allspice Berries
- 1 ½ Cups Red Wine Vinegar
- 2 Quarts Firm Blueberries*  
  (Rinsed and Picked Over)
- 2 Cups Sugar

**Directions**

Tie the cinnamon sticks, cloves, and allspice in a spice bag or cheese cloth. In a large, non-reactive pot, bring the vinegar and spices slowly to a simmer. Cover the pot and simmer 5 minutes. Add blueberries, and cook over medium-low heat just until the berries are heated through, shaking the pot instead of stirring to avoid breaking them. (This should take about 8 minutes.) Remove the pot from the heat, cover, and let stand for 8 to 12 hours. Pour the blueberries and their liquid into a colander set over a bowl. Remove the spice bag. Carefully transfer the drained berries to sterile jars. Return the liquid to the pot, and add sugar. Bring this mixture to a boil, stirring to dissolve the sugar. Boil the syrup briskly for about 4 minutes to thicken a bit. Cover the berries with hot syrup, leaving a quarter-inch of headspace. Seal the jars with hot two-piece caps. Store in a cool, dry, dark place. Makes 3 pints.

**Notes**

For long-term storage, jars can be processed in a hot-water bath for 10 minutes.

*Recipe courtesy of Vicki Martin*
Miss Alice’s Blackberry Cobbler

Ingredients

- 2 Cups Self-Rising Flour
- 2 Cups Sugar
- 2 Cups Milk
- 2 Sticks Butter
- 3 Cups Fresh Blackberries

Directions

Melt butter in a 9x12 inch baking dish. Mix flour and sugar. Add milk, and mix well. Pour flour/sugar/milk mixture over melted butter. Sprinkle blackberries on top. Bake at 350 Degrees Fahrenheit for about 30 minutes, or until golden brown. Serve with whipped cream or ice cream.

Notes

I have been making this blackberry cobbler for years, and it is a family favorite. Hope you enjoy it.

Recipe courtesy of Mrs. Alice Marie Smith
Miss Bessie’s Huckleberry Pie

**Ingredients**

- 2 ½ Cups Fresh Huckleberries
- 1 Cup Sugar
- ¼ Cup Plain Flour
- Dash of Salt
- 1 Tablespoon Lemon Juice (Fresh or ReaLemon)
- 2 Tablespoons Butter
- 2 Unbaked Pastry Shells

**Directions**

Combine huckleberries, sugar, flour, salt, and lemon juice. Put into an 8 inch pie crust. Dot with butter. Place top crust on, seal edges, and cut slits on top crust to allow steam to escape (instead of a solid top crust, a lattice top makes a nice presentation for this pie). Bake in hot oven at 375 Degrees Fahrenheit for about 40 minutes, or until crust is golden brown. Serve with vanilla ice cream. (Blueberries can be substituted for huckleberries if you wish.)

**Notes**

When my children were young, my mother, Bessie Scussel, often sent them up in the field to pick huckleberries off of the old huckleberry bush we had growing up there. She would then bake delicious huckleberry pies out of these berries. This is her recipe. I hope you enjoy it as much as my family has through the years.

*Recipe courtesy of Mrs. Alice Marie Smith*
Soil Management in the Urban Landscape

by George Hochmuth, Laurie Trenholm, Esen Momol, Don Rainey, Claire Lewis, and Brian Niemann

Soil is the most important building block of a healthy, attractive landscape, serving many important physical, chemical, and biological functions. Soil provides a physical substrate for plant support and holds nutrients and water for plant use. It also facilitates groundwater recharge (water moving from surface water to groundwater) and provides long-term storage for organic matter. Soil also provides a habitat for microorganisms that aid in the transformation and availability of nutrients. Soil is an integral part of any ecosystem, but urbanization often changes soils in ways that negatively affect plant development. Soils in urban areas may have reduced water infiltration, resulting in increased runoff and increased potential for nutrient losses. Homeowners in urban areas often overcompensate for poor planting conditions by applying inappropriate amounts of fertilizer and water. These practices eventually lead to nutrient losses through stormwater runoff or soil leaching, and these lost nutrients negatively impact groundwater and ecosystems in nearby springs, streams, and water bodies.

Ideal soil conditions for planting a new landscape include the following:

- Loamy texture (i.e., mixture of sand, silt, and clay) for holding nutrients and water
- Well drained to avoid standing water around plants and to provide groundwater recharge
- Slightly acidic to neutral pH
- Adequate organic matter to hold water between rain and irrigation events and to provide nutrients for plants
- Little to no compaction so that roots can easily penetrate the soil and oxygen and water can reach the roots
- Low soluble salt content

These conditions are rarely present in home landscape soil, especially soon after construction of a new home. During construction, home sites undergo numerous changes that disrupt the soil and do not leave landscapes in an ideal condition for planting.

What Are the Challenges Associated with Urban Soils?

Before your neighborhood was developed, the soil was most likely naturally formed, consisting of air, water, microorganisms, organic matter, some nutrients, and minerals. The soil may have been part of a natural, forested ecosystem or an agricultural soil. When your home was built, common construction and development practices changed these natural soils to a more challenging environment for growing plants.

Characteristics of Urban Soils

The disturbance of soils after construction occurs in many ways—there is no such thing as a typical post-construction urban soil. However, urban soils

Fill sand is often piled on construction sites to serve as a base for the home’s foundation.
share several common characteristics responsible for the challenges in establishing and maintaining landscape plants and turfgrass:

• Variable soil characteristics and texture
• Compacted soil conditions
• Poor soil structure and low organic matter content
• High variability in fertility and pH levels
• Low biological activity

**Variable Soil Characteristics and Texture**

Often, fill material (sand) from nearby areas is brought to the construction site. This sand is spread on top of the native soil, burying the topsoil layer. The fill sand serves as the base for placing the concrete slab for the home foundation. The fill material is also spread around the site on areas that will become the lawn and landscape. The fill sand has low organic matter and nitrogen content. It also can have a wide range of phosphorus and other nutrient content, and typically has low water-holding capacity. During the final development process, additional sand or topsoil may be imported and added over the sandy fill material. Moving the soil and mixing the soil profile create highly variable physical and chemical characteristics (Figure 2) and can result in considerable compaction in urban soils.

In some locations of Florida, dredged material from stormwater retention ponds is brought on site. This material may have a high clay content, which leads to challenges in establishing new landscapes.

**Soil Compaction**

The construction of a residential home involves human and mechanical traffic, often resulting in soil compaction. Compaction of urban soils reduces air availability to plant roots and decreases the amount of rainwater that can percolate into the soil. The water running off these landscapes can carry soil and nutrients from the site and possibly deposit them in local waterways. Compacted soils can be especially problematic in sloped home sites, leading to more rapid runoff and soil erosion.

Fill sand is typically added to a construction site to raise the elevation, resulting in the burial of the native soil profile. In this picture, note that various fill materials were applied in layers to establish the final grade.

**Low Organic Matter Content**

Organic matter improves soil structure by increasing soil aggregation (the ability of the soil to form clumps) and by improving soil aeration and water-holding capacity. Organic matter in high-quality soil is a major source of plant nutrients such as nitrogen and phosphorus. Organic matter is also the food source for many beneficial soil microbes such as bacteria and fungi that help regulate nutrient availability in the soil. It also supports other animals such as earthworms that help to aerate the soil. Native soil often contains organic matter, but during construction and development, this layer is often buried under several feet of fill sand that has little or no organic matter content. The low organic matter content in urban soils may lead homeowners to apply higher levels of fertilizer and water to compensate for the lost organic matter. This leads to an increased use of water and the potential for nutrient leaching or runoff.
Variability in Nutrient Content and pH Level

Urban soils often contain considerable debris left behind from construction. For example, the pH level in landscape soil can be directly impacted by concrete waste. Soil pH is generally elevated near masonry walls and foundations due to the lime and concrete residues from construction. Concrete debris may also be buried in other areas of the landscape, resulting in pockets of soil where elevated pH makes it difficult to establish landscape plants that need an acidic pH. Plants growing in these high pH soils may exhibit micronutrient deficiency symptoms, such as yellowing of upper leaves similar to an iron deficiency. In addition to the concrete waste, irrigation water typically has high pH levels, which gradually increase the pH of landscape soils over time. Depending on fill material source, there can also be a dramatic difference in the pH and nutrient availability of native soils and fill material.

Low Biological Activity

Healthy soils are critical to build a strong ecosystem and to support wildlife in the landscape. Soils in most new construction sites contain low populations of soil microorganisms. A healthy soil contains a rich mixture of plant (flora) and animal life (fauna). These organisms help decompose organic matter, cycle nutrients in the soil, and retain nutrients for plant uptake. An active soil ecosystem can help reduce the amount of fertilizers required in the landscape. As organic matter and plant materials decompose, they provide food for nematodes, fungi, and bacteria that form the base of the food web.

Ways to Improve Urban Soils and Make Your Landscape Environmentally Friendly

Managing a landscape planted in disturbed urban soils can be challenging. The homeowner should recognize that these soils may create opportunities for pollution from lawn and landscape fertilization. Ideally, a new home buyer can have some control over the landscape soil development before landscape plants are installed. If confronted with poor urban soils, the homeowner has options to improve the health of the landscape plants and reduce the environmental impacts of landscape management. Soil compaction, high pH levels, and lack of organic matter are major factors in urban soil that lead to water and nutrient management challenges. The homeowner can have an impact on these soil characteristics.

Soil Compaction

The first step a homeowner should take is to assess the soil for compaction. Detailed soil tests can be done to make this determination. These tests include measuring soil bulk density and penetration resistance with a penetrometer. Alternatively, the homeowner can observe the landscape for standing water. Clay soils do not drain well, causing standing water. Stormwater pond dredging is often used as a fill on home construction sites. These heavy clay soils cause poor root development.
water or conduct a simple test of soil compaction with a shovel or soil probe. Compacted soil makes it difficult to push a shovel, hollow tube, or metal rod into the ground more than a few inches.

High Variability in Nutrient Content and pH Level

Next, a soil sample should be taken from several areas in the landscape and analyzed separately to determine soil nutrient levels and soil pH. Your local county UF/IFAS Extension office has more information about testing the soil in your landscape. The soil test results can guide you to proper decisions about pH management and fertilizer needs of plants to be installed. Also, during soil sampling you can observe any areas of compacted soil.

Modifying the soil pH, especially high soil pH, is challenging. This is made especially difficult where we irrigate with basic (high pH) well or municipal water. Landscaping with plants tolerant of high soil pH conditions is a good approach. Chemically reducing soil pH with sulfur additions may help, and using “acid-forming” ammonium or urea-based nitrogen fertilizers is beneficial but usually the effect is temporary. Relying on rainfall or harvested rainwater as much as possible also helps to minimize additions of high-pH irrigation water. Organic matter should be added to the soil when replacing plants in the landscape. These approaches help to improve plant growth, increase the efficiency of fertilizer and water use in the landscape, and reduce the likelihood of nutrient losses from the landscape.

Poor Soil Structure and Low Organic Matter

The ideal composition of organic matter in the soil consists of currently living and recently living organisms and fresh, decomposing, and stabilized (fully decomposed) organic matter. As the organic matter degrades, it increases the soil's nutrient- and water-holding capacities. The process of
incorporating organic matter into the soil breaks up compacted soil areas. Organic matter improves soil structure, reduces compaction, and helps moderate soil pH increases.

The best course of action for soil improvement is to build organic matter in the landscape over time to achieve the desired proportions of the various organic matter components. Depending on where it is used, organic matter can be applied by several methods.

For established plant beds, the easiest method is to use compost made from grass clippings and other organic materials. Turfgrass clippings should be put on the lawn where they can decompose and return organic matter and nutrients. Compost can be applied as mulch or topdressing to landscape beds, but use fully composted materials for incorporation into the soil. As a rule of thumb, compost should not have any recognizable pieces of organic matter (e.g., sticks, leaves, wood chips, etc.).

To prepare a new plant bed, compost can be mixed into the root zone before planting. This mixing can be done with a shovel; use a rototiller for larger areas. However, a tiller should not be used in areas that contain established trees or woody shrubs. The root systems of these plants extend well outside the canopy, and a tiller can cause serious root damage. Use the free service “Dial 811” to determine where electrical and data/phone wires are located.

Increasing soil organic matter has positive effects on nutrient and water management in the landscape. Organic matter helps hold water and nutrients in the soil, likely reducing the amounts of fertilizer and irrigation required. Improving soil quality with organic matter reduces the potential for nutrient losses from the landscape, making your home site more environmentally friendly. As improvements are made and the landscape matures, some of these problems such as compaction and lack of microbial biological activity will be resolved.

When attempting to improve soil quality, patience is important, because conditions may take years to improve.

**Plant Selection**

Choosing the right plant for the right place in your landscape is an important part of creating a Florida-Friendly landscape. Sometimes there is little you can do to drastically change the soil in the landscape. Selecting plants that tolerate or thrive in poor soil

![Ideal mixture of soil organic matter components.](image-url)
conditions may be the most effective and least expensive approach. To learn which plants can tolerate high soil pH conditions, see The Florida-Friendly Landscaping™ Guide to Plant Selection & Landscape Design at http://fyn.ifas.ufl.edu/pdf/FYN_Plant_Selection_Guide_v090110.pdf.

Summary

Soil is the basic building block of any landscape, but home construction practices can result in challenging management issues for soils in the home landscape.

Disturbed urban soils can result in poor plant growth, increased water and fertilizer requirements, and increased susceptibility to pests and disease. Elevated pH levels and high soil compaction can lead to serious water quality issues if homeowners do not take the right steps to improve soil quality. The best course of action for homeowners is to start with a soil assessment and soil tests, and then to build organic matter in the landscape over time. The addition of organic matter content increases nutrient- and water-holding capacities and makes the soil easier to till for planting. Correcting soil quality problems in the landscape development stage results in a more Florida-Friendly landscape with reduced water pollution and nutrient loss.
Jerry and Ellen Rice have lived in Callahan for 18 years. Jerry is the gardener and has almost 400 Camellias growing at this time, with the idea of planting more soon. On their farm are also beautiful slash pine trees, lovely dogwood and redbud trees, native Azaleas and red, pink and white Crepe Myrtle.

The most difficult learning experience he has had was getting the soil to the correct PH, which is slightly acidic, by adding fertilizer with nitrogen, phosphorus and potassium.

He has done a good job with adjusting the soil. He also has become an expert at grafting or rooting new plants from the stems. This is important when he wishes to produce another Camellia bush that is the same as the one he likes. Camellia seeds do not make new plants that are the same as the original.

It was amazing to see so many lovely Camellias blossoms with very different colors and shapes. They also are beautiful at a time when most bushes are not in bloom.
March Winner

Jerry and Ellen Rice

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.
Hope Cannon not only has a beautiful selection of perennial plants in her yard, but also uses raised beds for cut flowers, has a serene patio with a small waterfall surrounded by lovely shaded plants and a front porch with a swing and some gorgeous pots of petunias. She lived in Vermont for 40 years but has adapted to the climate change and has enjoyed learning so many different ways to garden here in Florida.

In her yard she has Knock Out Roses that will bloom soon, purple and yellow Lantana, Agapanthus, Encore Azaleas and white Geraniums and Alyssum. Also there are beautiful Yarrow plants and lavender Hydrangea next to a bench with a cute little squirrel sculpture, On the side are 3 raised beds with beautiful annuals that are ready for making lovely flower arrangements, and even a small raised bed for tomatoes and edible flowers. What a fantastic array of beauty.
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.
**Invasive Plants: Chinaberry**
*(Melia azederach)*

*Center for Aquatic and Invasive Plants University of Florida, IFAS*

**Introduction**

A native of Asia, Chinaberry and was brought to the U.S. in the late 1700’s by a French botanist. Chinaberry has been used over the years as an ornamental plant, shade tree, and fuel wood. There are also some medicinal applications for Chinaberry including a peptide isolated from leaf tissue that is effective against the herpes simplex virus. Unfortunately, Chinaberry has all the qualities of a successful weed. This plant is adaptable to many environmental conditions, is virtually disease and insect free, and thrives in disturbed or open areas.

Chinaberry is not currently listed on Florida’s Noxious Weed list, nor is it listed on the Federal Noxious Weed List. Distribution of Chinaberry is not limited to the United States (from Virginia to Florida and westward to Texas) for it is common in Central America, the Virgin Islands, and Puerto Rico. Chinaberry is known to form dense thickets in forests and marshes, displacing native vegetation as it grows. It is also a very common hedgerow tree.

**Description**

Chinaberry is a deciduous tree in the *Meliaceae*, or Mahogany Family with purplish, reddish bark. It is able to grow to 50 feet in height, although trees less than 30 feet in height are more common. Leaves are alternate and 2 to 3 times compound (8 to 18 inches). Leaflets have serrated edges and are 1 to 3 inches long.

In spring, long, fragrant, lilac-like flowers are produced in leaf axils. Yellow to yellow-green round drupes are formed after flowering and can persist after leaf drop in the fall. The fruits are mucilaginous and sticky, with hard, round; marble-like seed. Birds spread seed effectively but the fruits are poisonous to humans and other mammals. Because the seeds are poisonous, birds may become paralyzed after ingesting seeds. Chinaberry also reproduces vegetatively when the tree is cut, producing suckers that form a dense stand of vegetation.

**Impacts**

When Chinaberry was introduced into the U.S. as an ornamental its natural enemies (diseases or insects) were not brought along with it to maintain its populations at low levels. Along Florida’s roadsides, in natural areas and forests, and marshes Chinaberry has the ability to grow rapidly and displace the native vegetation in those areas. Through prolific reproduction via seed as well as vegetative reproduction, it is able to shade out other species by forming a dense thicket. The leaf litter produced by Chinaberry causes the soil to become more alkaline, giving an advantage to those species that fair well in alkaline soils. Chinaberry is also believed to have allelopathic properties, prohibiting other species to colonize the area in close proximity to Chinaberry. Overall
Chinaberry reduces the plant diversity in any area in which it grows.

**Management**

**Preventative**
Controlling Chinaberry is best accomplished when trees are very young, prior to seed production. Because the seed is very hard, it may remain dormant in the soil for several months or years. Therefore, be persistent and visit a clean site several times before declaring it “Chinaberry-free”. Another preventative measure is to control trees along fencerows and neighboring hedges, limiting seed introduction.

**Cultural**
Weeds such as Chinaberry generally invade open or disturbed areas – following a burn, clearing mowing, etc., so these areas are particularly vulnerable to invasion. Therefore, a healthy ecosystem with good species diversity will help to deter infestation. Seeds may be hand picked from trees and discarded properly, however this may not be a realistic or cost effective tactic for larger infestations.

**Mechanical**
Mechanical control is limited to cutting, although mowing prevents seedling establishment in pasture and rangeland settings. It is thought that Chinaberry may be susceptible to fire, but more research must be done to validate this claim. Cutting back Chinaberry must be integrated with chemical control because of its proclivity to resprout.

**Biological**
There is limited research and data on biological control of Chinaberry.

**Chemical**
Herbicides prove to be the best method of control for Chinaberry. Foliar applications of glyphosate or triclopyr will be fairly effective on trees less than 10 feet tall. A dilution of triclopyr (Garlon 3A at 2 to 3% solution or Garlon 4 at 0.5 to 2% solution) in water can be used. Be sure to include a non-ionic surfactant at 0.25% (10 mLs or 2 teaspoons per gallon of spray solution). A 2 to 3% solution of glyphosate (Roundup, etc.) can also be effective.

A basal bark application of triclopyr (Garlon 4) has also been shown to be an effective treatment. Triclopyr can be applied in a 4 to 8-inch band near the base of the trunk in a 15% solution. Studies have shown a cut stump treatment of 8% triclopyr is almost completely effective in eliminating Chinaberry. Herbicides should be applied before the onset of fruit production to prevent seed production. Repeat applications may also be necessary for complete control.
May Checklist

Citrus: Depending on citrus fertilizer label, apply fertilizer every six weeks or as directed. Check for citrus insects; apply ultra fine or all season horticulture oil before 10 am and in early evening if insects are detected. Check for disease; apply fungicide just at new leaf flush or after bloom drop. Maintain 2-3’ unmulched area around citrus trees.

Fruit: Weed as needed. Apply 6-6-6 or 8-8-8 fertilizer if appropriate. Check irrigation to ensure it is working. Make repairs.

Flowers: Annuals to plant this month are celosia, coleus, coreopsis, crossandras, gaillardias, gazanias, hollyhocks, impatiens, kalanchoe, marigolds, nicotianas, ornamental peppers, portulacas, salvia, thunbergia alata, torenias, verbena, periwinkles, and zinnias.

Herbs: Anise, basil, bay laurel, borage, caraway, cardamom, chervil, chives, coriander, culantro, dill, ginger, horehound, lemon balm, lavender, marjoram, Mexican tarragon, mint, parsley, oregano, rosemary, sesame, and thyme can be planted now.


Lawns: Check St. Augustine for chinch bugs. It is the beginning of mole cricket season for bahia, Bermuda, and zoysia lawns. The mole crickets have been busy laying eggs which will start hatching this month. Fertilize with 15-0-15 or 16-4-8 this month. Water restrictions (city water or wells) allow odd numbered houses to water Wed. & Saturday; even numbered houses – Thurs. & Sunday. Non-residential properties water on Tues. & Friday. Remember small amounts of fertilizer work best. Too much nitrogen can attract insects and disease.

Trees: Some magnolias may drop their leaves during the spring months. This is normal, as they replenish foliage. 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 slow release fertilizer if pH is acid, use quick release for alkaline or high pH soils. Many palms are deficient in potassium, in spite of using palm fertilizers. Apply Muriate of Potash to correct this deficiency.

Vegetables: Scout for insects and hand remove if possible. Check the underside of leaves for eggs and aphids. Remember some insects are predators. These predators are important part of keeping the pests from totally taking over vegetables. Vegetables to plant this month are lima beans, eggplant, okra, Southern peas, and sweet potatoes.

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
June Checklist

**Citrus:** Depending on citrus fertilizer label, apply fertilizer every six weeks or as directed. Check for citrus insects; apply ultra fine or all season horticulture oil before 10 am and in early evening if insects are detected. Check for disease; apply appropriate fungicide. Weed as needed.

**Fruit:** Summer pruning to include water sprouts, and fire blight infected wood. Be sure to clean pruners between cuts using alcohol, bleach or Lysol on the blades to prevent transmitting diseases. Apply 6-6-6 or 8-8-8 fertilizer to pears and plums. Apply azalea fertilizer to blueberry shrubs at 1/2 lb per 3’ of shrub. Weed as needed.

**Flowers:** If growth appears too slow and the foliage turns yellow, they may need fertilizer. Too much growth and a lack of flowers indicates the plants have all the nutrients they need and you can reduce nitrogen. Globe amaranth, melampodium, pentas, portulaca, purslane, salvia, zinnia, lantana, buddleia, daylily, verbena, purple coneflower, plumbago, and sun coleus can be planted in full sun. Plant agapanthus, blackberry lily, clivia, gloriosa lily, achimenes, crinum, and iris.

**Herbs:** Bay laurel, culantro, ginger, horehound, lavender, mexican tarragon, mint, parsley, oregano, rosemary, sesame, and thyme can be planted now.

**Roses:** Continue spray program. Apply liquid fertilizer. Cut and remove spent blooms. Check for spider mites. Water, water, water.

**Lawns:** Keep mower blades sharp (once a month is a good rule). Mow the lawn on the highest height for each species – never cut it too short.

**Perennials:** Some pests to check for are grasshoppers and katydids. Both may be chewing holes in plant leaves. Try to handpick them from the plants, or if needed, use a synthetic insecticide as instructed on the label for chewing insects.

**Trees:** Pests may be noticed in many trees. Their damage is minimal and sprays are seldom needed. Look for aphids, borers, mites, etc.

**Vegetables:** June is not the best month to be starting a garden or planting new crops. Wait until August before putting in new plants. You may still plant tomatoes in containers if you want something to harvest. This is a good month to solarize your garden to fight against nematodes and disease causing fungi.

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
Q: I’ve harvested the berries from an East Palatka Holly plant, can you please tell me the best way to germinate the seeds. Thank you.

A: The publication I have attached is the best one I have seen on seed propagation which is from the North Carolina State University by Extension Agent Erv Evans and Professor Frank A. Blazich. Near the bottom of the publication is a table with different types of plants and hollies are on the list. It is important to note, propagation from seed, which it can be richly rewarding, may not give you the exact same characteristics of the mother plant. It is possible to end up with something even more spectacular or it may be less showy, or not as disease resistant, etc. If you are willing to wait in the hope of producing that one fabulous tree, then I say go for it. However, if the idea was to get duplicates of the mother plant, then cuttings would be a much better choice. In addition, you will not have to wait as long to get a small tree as a plant grown from seed. Growing the tree from seed may take years longer and possibly produce a tree with less desirable characteristics. In addition, you may purchase a mature holly tree from one of the local plant nurseries at a fairly reasonable cost. This publication goes into great detail and should be beneficial to any home gardener.

http://www.ces.ncsu.edu/hil/hil-8704.html

Q. What are these white balls on my azaleas?

A. This spring has been exceptionally cool and moist which has provided the perfect environment for Azalea leaf and flower galls to form. The galls cause the leaves or flower buds to become swollen, waxy and fleshy. Homeowners become alarmed when their azalea hedge large numbers of these white, cotton ball forms show up. The galls are caused by a fungus called *Exobasidium vaccinii* which can develop on leaves, stems, or flowers. Azalea leaf gall most often on the tips of the lower branches but no portion of the plant is immune. Leaf galls start out pale green then turn white. This indicates the galls are full of spores. Flower galls are often a pale pink. If you wait until they have turned brown, then the spores have already spread to other parts of the plant. The spores are blown by the wind or rain from one leaf to another and the plant is infected by late spring to early summer. The intensity of the gall formation is directly related to the weather – cool, wet conditions are perfect. Severe cases often occur on plants in dense shade with poor air circulation. To prevent a reoccurrence the following year, galls should be handpicked and destroyed when they first appear. In addition, this same fungus can develop on blueberry and camellia. Save yourself money and time and forgo the fungicide treatments as they really are not needed in home landscapes. We should pay special attention to susceptible cultivars such as Hinodeii, Mother's Day or Herbert and be sure not to plant these varieties too close together or they will become too crowded, reducing air circulation.
Q: I just moved to Amelia Island from the North and I don’t seen peonies growing here. Why not?

A: Well, welcome to Nassau County, Florida. We are certainly glad you decided to live here. Peonies are long-lived, perennial flowers producing large, showy flowers in the spring. It is possible for those people located on the western most part of our county to grow certain older varieties of peonies as they live in cold hardiness zones 8b. However, people located east of I-95, which would be you, are in cold hardiness zones 9a. This area is not well suited for peonies. Peonies grow best in cooler climates. We have long periods of warm, humid weather. Some mail order catalogs provide a chill rating range from 100 to 300 chilling hours per winter for certain cultivars of peony. Chilling hours is the number of cold hours the plant requires. This becomes very important for certain plants such as peonies and fruit trees. If you decide you want to try peonies, select cultivars with a low number of chilling hour requirement. In general, most of the newer peony cultivars do not perform well in the south because they were bred and selected in northern nurseries and do not receive an adequate amount of cold weather here. It might be best to consider other types of flowering plants which grow beautifully here such as plumbago, hydrangea, azalea, or camellia. They produce beautiful flowers and are much easier to grow here.

For more Garden Talk questions answered by Ms. Jordi, see our website at nassau.ifas.ufl.edu/
Q: My friend gave me a small shrub. She said it is a native wild coffee plant. What can you tell me about it?

A: Wild coffee, *Psychotria nervosa*, is a Florida native shrub which gets its common name from the small, red, fruit it produces. Fruit resembles the true coffee bean. The leaves of this plant are generally 6 inches long, with very distinct vein on the upper surface. There are fine hairs along the underside of the leaf main mid-rib. The shiny, dark green foliage gives a rich texture to any landscape. The plant produces small, white flowers which occur at the end of the shrub branches during the warm months of the year. Wild coffee is a moderately drought tolerant plant which grows in partial shade or full shade and well drained soil. If it is grown in full sun, its leaves will be pale yellow. A plant in the full shade can grow into a small tree with an open canopy. It is better suited for cold hardiness zones 10b-11, which remember is south Florida. Wild coffee will require protection during the winter if grown in our area. It looks very similar to the invasive plant called coral ardisia but coral ardisia is cold tolerant.