

Brazilian Peppertree Biocontrol: Small Solution for a Large Problem

By Katherine Oliver, Residential Horticulture Program Assistant



Brazilian peppertree (*Schinus terebinthifolius*), one of Florida's top three invasive plants, was brought to the United States in the 1840s and has since invaded vast areas of southcentral Florida. Considered one of the most aggressive and damaging weeds in the state, it takes over natural habitats and smothers native vegetation. It now consumes about 700,000 acres, which is almost as large an area as the state of Rhode Island. Traditional control methods of removal and herbicide spraying are expensive, labor intensive, and inadequate to the enormous task at hand.

In their native habitat of South America, Brazilian peppertrees are much smaller and less abundant thanks to natural enemies that keep it in check. Scientists from the University of Florida and the US Department of Agriculture (USDA) have been studying insects to use against this pest plant since 2009. Biocontrol offers an environmentally safe and cost-effective management strategy, and intensive research ensures the introductions will not harm native organisms.

Reared at University of Florida's Indian River Research and Education Center in Fort Pierce, the first biocontrol agent for Brazilian peppertree was released just last year, in 2019. It is tiny thrips bug (*Pseudophilothrips ichini*) that feeds at the tips of peppertree plants, affecting growth and reproduction.

So far, the thrips have been released in Miami-Dade, St. Lucie, Brevard, Collier, Hillsborough, and Polk counties. A second biocontrol, a leaf-galler (*Calophya latiforceps*), is due

for experimental release in 2020. Future releases are slated for ranches and farmlands where Brazilian peppertree readily invades disturbed areas and fallow fields.

Whilst biological controls are expensive to rear in the lab, once released they will reproduce and spread at no cost. According to Dr. Greg Wheeler, Research Entomologist with the USDA, these populations will be self-sustaining, limited only by their one and only host plant, the Brazilian pepper. "Research indicates that both biological agents will reduce growth of plants and spread of the weed population by reducing reproduction."

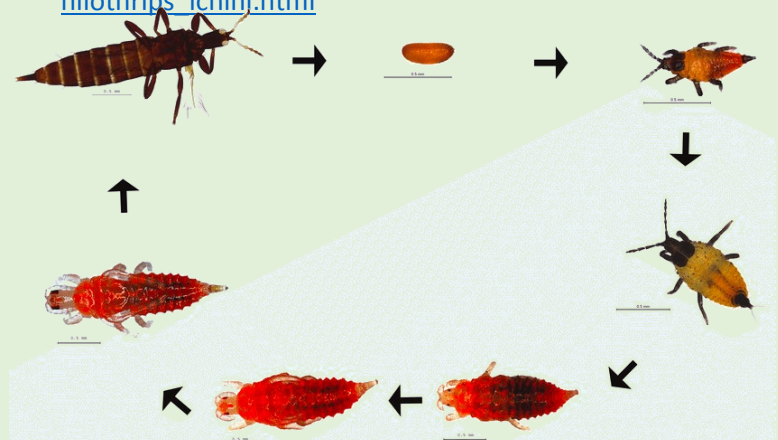
Don't expect overnight results. As they move beyond their release areas, these predatory (beneficial) insects will not suddenly wipe out their host plants. However, they can reduce the peppertree populations to more manageable levels and boost the effectiveness of other control measures. Based on Dr. Wheeler's research, there could be as much as 80% reduction of Brazilian peppertree leaf cover and bud growth over the next fifteen years.

Resources: Brazilian Peppertree Control

<https://edis.ifas.ufl.edu/pdf/files/AA/AA21900.pdf>

Brazilian Peppertree Thrips

http://entnemdept.ufl.edu/creatures/BENEFICIAL/Pseudophilothrips_ichini.html





What's This?

Bridal Bouquet Plumeria (*Plumeria pudica*)

Photos and Text by Nancy Hammer, Master Gardener Volunteer 2014



Many Floridians are familiar with the distinctive *Plumeria* tree (also familiarly called “frangipani” which is just one cultivar of *Plumeria*) commonly grown for its very fragrant summer blooms. These are used in Hawaiian *leis*. A distinguishing feature of the *Plumeria* is that it is deciduous, and its thick bare stems can resemble a coat rack during winter months.

Enter *Plumeria pudica*, commonly called “bridal bouquet plumeria.” This small tree/large shrub deserves to be planted more in Manatee County. It has evergreen or semi-deciduous (depending on where it is planted) fiddle-shaped leaves and blooms its little heart out from spring to winter with clusters of luminescent white flowers. It thrives in full to part sun, and well-drained soil.

I picked up this plant from our annual Master Gardener Plant Fair several years ago and plunked it in a large container. The first year it did not do much, but the second year it took off in height and flowering. The third year it was getting root bound, so we moved it to the landscape. I live out East with occasional frosts, so it does drop its leaves. However, in spring it takes up where it left off. Closer to the Gulf, it may retain its fiddle-shaped leaves year around, unlike the more commonly seen plumerias.

It is easy to propagate from stem segments, so if you are friendly with someone who has one, ask for cuttings. Otherwise, I hope to start some for the next Master Gardener Plant Fair on October 3, 2020.

SOAP AND OIL SPRAY: BUY IT OR MAKE IT YOURSELF?

By Joy Derksen, Master Gardener Volunteer 2004



I grew up with a mother who was a child of the 1929 Depression. We grew our own vegetables and fruits, raised chickens, and used homemade pesticide. Mom kept a jar with water and soap ends which she shook up and sprayed on bugs in her garden.

The University of Florida, after many requests from home gardeners for a homemade soap and oil recipe to use as a pesticide spray, decided to investigate what would be best for homeowners. They wanted to see what worked and what did not work.

What the researchers found was that modern soaps and detergents contain multiple ingredients that did not exist in my mother's day. "Dish detergents are not an organic alternative to pesticides and are not appropriate for pest control in organic or conventional gardening" is one of the conclusions reached by the agricultural scientists. Some of these ingredients can disrupt the plants' waxy coatings, which protects against bacteria, viruses, and fungi. Some of these ingredients cause photo-toxicity (sunburn!) on the leaves. Salts, essential oils, and fragrances added to soaps might kill insects, but can be toxic to the plants, beneficial insects, and animals.

In conclusion, the University of Florida researchers suggest using insecticidal soap products available in stores that have met EPA guidelines and have instructions for the rate and amounts to use.

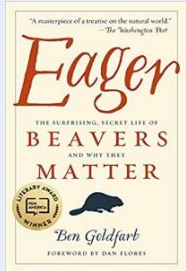
If you would like to see the full research report, it is available here: <https://edis.ifas.ufl.edu/in1248>.



Winter Blues? Curl Up with Some Good Reads for Nature Lovers

By Amy L. Stripe, Master Gardener Volunteer 2008

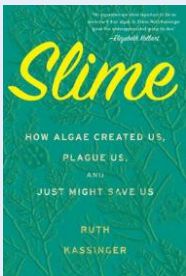
Photo credit: <https://magazine.college.unc.edu/>



Eager: The Surprising, Secret Life of Beavers and Why They Matter

By Ben Goldfarb (Green Publishing)

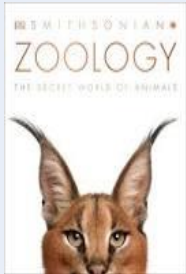
Hugely surprising to me (as a Floridian) is the landscape shifting these rodents, the largest in North America, can achieve. Discovering that a vast majority of the Midwestern U.S. plains were once wetlands due to this critter opened my eyes and made me sympathize with both the beaver and us, his enemy.



Slime: How Algae Created Us, Plague Us and Just Might Save Us

By Ruth Karringer (Houghton Mifflin)

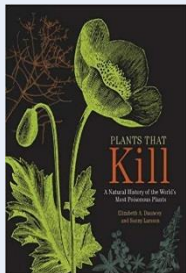
This book documents the critical role algae (in its many thousands of forms) have played in creating and sustaining life on our planet, from nutrient rich seaweeds to crude oils that fuel our power plants. This is a must-read for anyone interested in natural history.



Zoology: Inside the Natural World of Animals

DK / Smithsonian

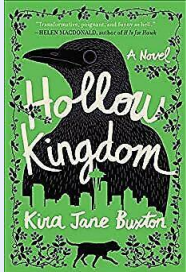
This appears to be the companion book to **Flora: Inside the Secret World of Plants** (also a Smithsonian publication, and one I recommended as a Christmas gift in our November/December 2019 issue of **The Bench**.) This book sports beautiful wildlife photography and describes the unique adaptations of wildlife on our planet.



Plants That Kill: A Natural History of the World's Most Poisonous Plants

By Elizabeth A. Dauncey and Sonny Larsson (Princeton University Press)

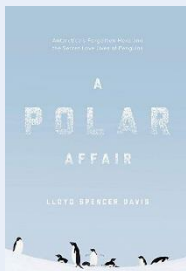
This is a coffee-table book with stunning photos and even more stunning facts about gorgeous toxic plants – classified by mode of action (meaning how they can kill you)! My husband gave it to me for Christmas this last year. I'm trying not to read too much into this.



Hollow Kingdom (a novel)

By Kira Jane Buxton (Grand Central Publishing)

This is a bawdy tale in the first-person voice of a domesticated American crow and his "natural" surroundings, including a drooling bloodhound dog. They sally forth in world filled with natural threats now that their human "owner" is ailing. It does give interesting and amusing insights into the purported cleverness of crows. Warning: strong language!



A Polar Affair

By Lloyd Spencer Davis (Pegasus Books)

Davis, a penguin biologist, weaves a fascinating documentation of polar exploration, polar explorers, and polar animals – with a focus on George Murray Levick (the first naturalist to study penguin behavior) and the penguins he studied. Spoiler alert: Levick discovered - and then covered up - the unorthodox sex lives of penguins. I read it cover-to-cover one rainy Sunday.



Horticultural Hygiene

By Mack Lessig, Community Gardens Program Assistant UF/IFAS Manatee County

As the weather begins to cool down, more and more gardeners are taking to the fields. Floridian gardeners, as a group, relish this time of the year. Our gardens will be full of blooming annuals, delicious herbs, various vegetables, as well as several species of fungi and bacteria. These microscopic pathogens also appreciate these balmy, mild conditions. The temperatures are ideal, moisture is plentiful, and, most importantly, there are lots of human hands to move them about.

Keeping your garden free of these little hitchhikers is dependent on how well you practice garden sanitation. Throughout the year, sanitation practices are important, but they are especially critical in the cooler parts of the year. With that said, there are several strategies that assist with the management of these pathogenic pests in your gardens.

First, bacteria, fungi, and viruses are a normal part of our subtropical climate. The same climate that blesses us with superior growing conditions, also provides for the vast diversity and proliferation of these miniscule baddies. Gardeners are an exceptional vehicle to transport these organisms around the garden. For example, most gardeners will begin working bright and early this time of year. It would be difficult not to see why. The mornings are cool, the plants look beautiful covered in dew, and most crops are ready for harvest. This sounds ideal, right? The problematic pathogens also agree. The cool temperatures foster strong, rapid growth, the dewdrops and wet leaves provide the perfect infection points, and human hands provide free, easy movement between plants.

The first step in garden sanitation is prevention. The outright exclusion of bacteria, fungi, and viruses can be very effective. The simple fact that the pathogen is not physically present in the garden is, in effect, interrupting the disease cycle. How does one exclude pathogens? It begins with disease-free seeds and transplants. When purchasing seeds, look for certified disease-free or trusted suppliers to ensure you are not inadvertently infecting your garden.

While shopping for plants, thoroughly look over the plant and the roots. Avoid plants that have spotted leaves or stems, brown mushy roots, or that appear to be weak and spindly in growth. This preventative first step can go a long way in helping to exclude any pathogens seeking a new home. However, some plant diseases can be particularly sneaky and launch a stealth invasion of the garden.

Consequently, a new set of protocols is required to prevent and manage plant diseases that are already present in the garden. The first habit to adopt is to never work on or near plants that have wet surfaces. Bacteria and fungi have an uncanny ability to move freely in water droplets which allows for the rapid transmission of diseases.

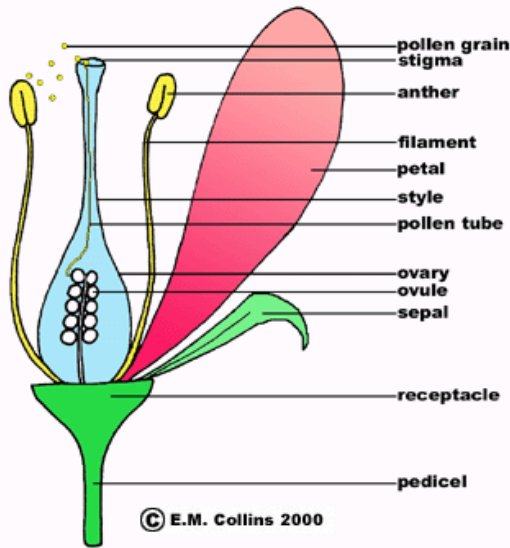
Another strategy is to water early in the morning to minimize the amount of time the leaf is wet. Again, the longer the plant is wet, the more likely it is to become infected with a disease. Something else to consider if there are diseases present in the garden is the sanitation of the growing area and garden tools.

All garden debris including fallen leaves, diseased plants, and picked weeds should be removed from the garden area. These can provide ideal habitats for some fungi and bacteria to develop if left unattended. Garden tools, like shears and pruners, should always be sanitized with rubbing alcohol or a flame before cutting a new plant. This helps to destroy any pathogens that can enter through pruning wounds.

In summary, allow for the plants to dry before working on or near them, water in the morning, remove all garden debris, and remember to sanitize all garden tools. These garden sanitation practices can go a long way in assisting with the management of plant diseases in the garden. For more information on managing diseases in the garden, visit <https://edis.ifas.ufl.edu/mg443>.

Hand Pollination

By Rob Hinz, Master Gardener Volunteer 2016



Vegetable gardens can be enjoyable, useful, and educational, producing healthy food for the table whilst helping to cut food costs. Our focus in this article will be on hand pollinating (mechanical pollinating) vegetables. Hand pollination is useful if plants are grown in greenhouses or if there are limited bees and other insects in the area. Breeding new varieties of vegetables can also be accomplished by hand pollination.

Pollination is needed for vegetable production. Vegetables produce pollen grains in the male structure of the flower, the anther. These grains are then deposited on the stigma or female structure of the flower. Vegetables can be self-pollinated or cross-pollinated. Self-pollination occurs when the pollen from the anther is dropped on the stigma of the same flower or on the stigma of a flower on the same plant. Cross-pollination requires pollen from the anther of one plant to be deposited on the stigma of another plant of the same species. If successful, fertile seeds and fruit will result.



Photo Credit E. Thralls

Wind, insects, other animals, and human intervention can all contribute to the act of pollination. Although plants that produce grains and legumes rely on wind for pollination, vegetables need pollinators. Insects, especially the European honeybee (*Apis mellifera*) and the bumble bee (*Bombus spp.*) are the most efficient and important pollinators of edible crops. Unfortunately, bee fungal and viral diseases, destruction of habitat, and insecticide application have reduced bee populations. In urban areas, pollination of plants may be sporadic due to low insect populations. The home garden in an urban area may lack pollinators, and as a result, hand pollination may be beneficial.

To hand pollinate self-pollinators such as eggplants (*Solanum melongena*), peas (*Pisum sativum*), peppers (*Capsicum annuum*), and tomatoes (*Solanum lycopersicum*), gently shake the plant, or blow lightly on the flowers. Another way is to take a small paintbrush and dab pollen grains onto the stigma. Vegetables such as cantaloupes (*Cucumis melo*), pumpkins (*Cucurbita pepo*), yellow crook neck squash (*Cucurbita pepo*), watermelons (*Citrullus lanatus*), zucchini (*Cucurbita pepo*) and cucumbers (*Cucumis sativus*) all have separate male and female flowers. To pollinate these vegetables, use the same technique with a paintbrush. The paintbrush technique can also be used in creating new varieties of vegetables. It is best to hand pollinate in the morning when humidity is high and pollen is activated.



Photo Credit E. Thralls

Hand pollination produces equal or increased yields of fruit, and fruit can be just as large or larger than insect pollinated plants. In small home gardens, hand pollination may be a useful way to pollinate. However, this type of pollination is time consuming and may not be viable or cost effective for large gardens or commercial operations. There are many variables in producing quality vegetables. For more information on hand pollinating techniques and optimal conditions, see:

<https://aggie-horticulture.tamu.edu/newsletters/hortupdate/2013/mar/hand-pollinating-squash.html><https://edis.ifas.ufl.edu/hs398>,
<https://edis.ifas.ufl.edu/hs1248>,
<https://www.ag.ndsu.edu/publications/lawns-gardens-trees/pollination-in-vegetable-gardens-and-backyard-fruits>.

Unusual Cooking Herbs

By John Dawson, Master Gardener Volunteer 2007

There are over 100 different perennial culinary herbs that will grow in our area and many more biennials and annuals, so why continue to use the same old basics such as basil, oregano, thyme, rosemary, parsley, sage, and bay leaf in cooking? And, I bet that most of us have bottles of old dried herbs that are way past their “best used by” date, so why not switch to fresh from your garden?

Herbs easily lend themselves as ornamental elements throughout your landscape and are easy to grow. They generally don’t take up much space and many are just as happy growing in pots on your windowsill. What you don’t use fresh, you can dry yourself. Experiment and step out of your cooking comfort zone by trying some of the more unusual herbs listed below (all will grow here). Remember, most herbs are added in the last few minutes of cooking, as extended heat destroys the aromatic essential oils providing flavor. Dried herbs have more concentrated flavor, so use at a ratio of 1 to 3 (1 dried for 3 fresh.)

Epazote
(*Dysphania*
ambrosioides)



This Mexican annual herb is used in many bean dishes and is purported to reduce the gas and bloating experienced by many when eating beans and cruciferous vegetables. I have grown this herb and it works for me. It doesn’t have a pleasant aromatic smell and the taste when eaten raw is a bit weird, kind of like citrus, mint, pine, oregano and mustard greens all mixed together. It works best in cooking and adds a Mexican flair to any dish. Although an annual, it readily reseeds itself.

Mexican Oregano
(*Lippia graveolens*)



I know, I know it is called oregano, but it is not. It is in a different genus from the traditional Greek oregano (*Origanum vulgare*) and is more closely related to verbena (Verbenaceae) which has the same pretty pink flowers. I have always been disappointed using fresh Greek oregano because to me, it does not taste like the pizza herb with which I’m familiar; however, Mexican oregano does. It is also a pretty flowering perennial shrub to add to your landscape.

Lovage
(*Levisticum*
officinale)



A tall (7’) perennial plant with a strong celery (*Apium graveolens*) taste. It holds up better in cooking when you want the true celery flavor to stand out. Lovage is a favored European herb and was originally brought to America by New England settlers. All parts of the plant are edible. It is a hardy perennial plant which may serve as a unique backdrop planting.

continued on page 7

Smallage
(*Apium graveolens*)



<https://facultystaff.richmond.edu/>

Smallage is the wild version of our domesticated celery we buy in the store and tastes milder than lovage but stronger than celery. It looks more like a skinnier smaller version of celery. Interestingly, smallage seeds are what you buy in the store as celery seed, as it has a more celery flavor than actual celery seed. If you get lucky, you may be able to grow smallage from your bottle of celery seed if it is still fresh (germination is usually less than 50%). It is a biennial and will re-seed itself. I have found smallage growing wild in a marshy area in Maryland where I used to live.

Mexican Tarragon
(*Tagetes lucida*)



UF/IFAS

French tarragon (*Artemisia dracunculus*) will not grow here, and although Russian tarragon (*Artemisia dracunculoides*) will, it really does not taste like French tarragon. But Mexican tarragon; which is not a true tarragon, tastes as close to French as you can get and comes with a bonus of pretty yellow flowers. Use it in cooking as you would the French. Mexican tarragon is an easy to grow perennial that will fit nicely in your landscape. See <http://gardeningsolutions.ifas.ufl.edu/plants/edibles/vegetables/Mexican-tarragon.html>.

Culantro
(*Eryngium foetidum*)



Rebecca Jorfi, UF/IFAS

Yes, I spelled it right. It is not cilantro (*Coriandrum sativum*), but culantro tastes just like it. Both herbs have a flavor you either love or hate; it is an acquired taste. I used to hate it, kept trying it, and now I love it. Culantro is a biennial herb that easily re-seeds itself. It does best in the heat of summer, when cilantro (grown as an annual) is “bolting” or going to seed. As an added bonus, culantro attracts beneficial insects while repelling aphids. See <http://gardeningsolutions.ifas.ufl.edu/plants/edibles/vegetables/cilantro.html> for more details. Both culantro and cilantro are staples in Latin and Asian cuisines. Culantro will not produce coriander seeds.

For more interesting and unusual herbs – as well as some medicinal uses of herbs – attend our herb gardening workshop on Saturday, February 15 from 10:00 A.M. to 12:00 P.M. Registration is \$5 online (<http://uf-ifas-extension-manatee.eventbrite.com/>) or \$10 in person or call the Master Gardener Volunteers at (941) 722-4524.

February

CALENDAR OF EVENTS



Photo: Garlic vine *Bignonia aquinoctialis* courtesy of UF/IFAS

Date	Time	Event
1 st Saturday	10:00 a.m.-1:00 p.m.	Ask a Master Gardener Volunteer – Island Library – 5701 Marina Drive, Holmes Beach. Visit the Extension Master Gardener information table and get answers to your gardening questions.
2 nd & 4 th Saturday	10:00 a.m.-1:00 p.m.	Ask a Master Gardener Volunteer – Rocky Bluff Library – 6750 US Highway 301 N., Ellenton. Visit the Extension Master Gardener information table and get answers to your gardening questions.
3 rd Saturday	11:30 a.m.-2:30 p.m.	Ask a Master Gardener Volunteer – Central Library – 1301 Barcarrota Blvd. W., Bradenton. Visit the Extension Master Gardener information table and get answers to your gardening questions
Saturday February 8	9:00-11:00 a.m.	Extension Master Gardener Plant ID Tour – Riverview Pointe Preserve – DeSoto National Memorial – Stroll through Riverview Pointe Preserve to learn more about Florida's native plants and inhabitants of a coastal habitat. Suitable for all ages. The hike begins in the parking area of the DeSoto National Memorial Park and enters into the Riverview Preserve at 8250 DeSoto Memorial Highway, Bradenton. To register call the Extension Master Gardener Volunteers at (941) 722-4524.
Saturday February 8	1:30 p.m.-3:30 p.m.	Master Gardener School: Roses in Central Florida – Roses are a symbol of love and beauty at Valentine's Day. Learn the lore of roses, their storied history, and cultivation in Florida including grafting techniques. Included is a visit to the Master Gardeners' Rose Demonstration Garden to emphasize some lessons learned and practical observations on varieties for the area. \$5 online registration - \$10 in person registration fee. Register online at http://uf-ifas-extension-manatee.eventbrite.com/ or call the Extension Master Gardener Volunteers (941) 722-4524.
Saturday February 15	9:00-11:00 a.m.	Extension Master Gardener Plant ID Tour – Rye Preserve - Take a hike through upland habitats along Rye Branch and learn about Florida native plants, natural history, and early settlement of the area. Drinking water, sturdy shoes, and hiking sticks are recommended. Visitor Center open 9am-noon and 1-4pm. Call the Extension Master Gardener Volunteers to register (941) 722-4524.
Sunday February 16	9:00-11:00 a.m.	Extension Master Gardener Plant ID Tour – Robinson Preserve - Stroll through the Robinson Preserve's salt marshes to learn more about Florida's native plants and inhabitants of a coastal habitat. Suitable for all ages. Trail consists of shell paths with little shade. Good walking shoes, drinking water, hat, and sunscreen are recommended. Call the Extension Master Gardener Volunteers to register (941) 722-4524.
Saturday February 15	10:00 a.m.-Noon	Herb Gardening - Start this growing season off with your own herbal garden! Let us introduce you to some of the herbs that thrive in our Florida climate. Explore how to grow and use them in your kitchen. Information will be given on their medicinal values and how they may affect or enhance your health. \$5 online registration - \$10 in person registration fee. Register online at http://uf-ifas-extension-manatee.eventbrite.com/ or call the Extension Master Gardener Volunteers (941) 722-4524.
Wednesday February 19	10:00 a.m.-Noon	Tomato-mania! - This two-hour workshop is designed to provide information and skills for tomato cultivation in the backyard garden. Topics include tomato history and biology, gardening techniques, and common tomato problems. \$5.00 administrative fee. Register online at http://uf-ifas-extension-manatee.eventbrite.com/ For more information, call Mack Lessig, at (941) 722-4524 ext. 1821 or mlessig@ufl.edu .
Saturday February 22	10:00 a.m.-Noon	Master Gardener School: Growboxes - Grow your own vegetables and herbs! We'll show you how to make an inexpensive self-watering planter that makes Florida gardening simple. \$5 online registration - \$10 in person registration fee. Register online at http://uf-ifas-extension-manatee.eventbrite.com/ or call the Extension Master Gardener Volunteers (941) 722-4524.
Tuesday February 25	10:00 a.m.-Noon	Taking the Mystery Out of Micro-Irrigation - an "Introduction to Micro-Irrigation". This will include the pros & cons, along with the learning how to select, install, and operate your own water saving irrigation system. The discussion will include information regarding the components, and how to assemble, and maintain. Come hear the benefits and why it is important to water plants, shrubs and other landscape plants separate from your lawn. Register online at http://uf-ifas-extension-manatee.eventbrite.com/ or call Deina (941) 722-4524 ext: 1828.
Thursday February 27	10:00 a.m.-Noon	Florida-Friendly Landscaping™ Design Your Landscape to Your Site Conditions - Learn about how your soil type, sun exposures, location, drainage, proximity to saltwater and soil pH, among other factors affect which plants would best be suited for your landscape. Register online at http://uf-ifas-extension-manatee.eventbrite.com/ or call Deina (941) 722-4524 ext: 1828 or deina.brinker@mymanatee.org