



Cultivating the Growth of Children

By Jim Haupt, Master Gardener 2015

"Everything is made out of magic, leaves and trees, flowers and birds, badgers and foxes, and squirrels and people. So it must be all around us. In this garden - in all the places." (Francis Hodgson Burnett, The Secret Garden)

The latest research shows what many of us have known all along: getting our kids outdoors is good for them, improving concentration, self-discipline, and increasing self-esteem.

Research from the University of Illinois has shown that "children who spend time in 'green settings' have decreased Attention Deficit Disorder as well as Attention Deficit Hyperactivity Disorder symptoms." In addition, those findings reveal "ADD symptoms decrease when children are in nature and when they interact in a green setting. The greener the setting, the greater the relief."

Gwenn Fried, Manager of Rusk Horticultural Therapy Services at NYU Langone Medical Center, in New York, asserts:

- Gardens engage the senses without overstimulation by exploring colors, textures, smells, and sounds in a calm natural setting.
- Garden activities sharpen gross and fine motor skills
- These experiences allow repetitive activities while offering constant change to challenge.

Gardening helps kids to establish routine and systematic skills by gathering tools, checking on plants (scouting), pulling weeds, and watering.

Noticing subtle changes like ripening tomatoes, new insects, the opening of flower buds, and the changing color in leaves will help in teaching reading and writing skills such as comparison and contrast, and cause and effect relationships. Gardening also can become a shared activity by providing many opportunities for positive social interaction and teamwork.

Creating a "sensory garden" by providing specific plants that stimulate and appeal to sight, sound, smell, taste and touch can become magical and rewarding for children.

Chirping crickets, wiggling worms, fuzzy leaves, colorful scented roses, the taste of mint, and the sound of a rippling fountain attract kids to gardening and make it their personal place.

Other thematic gardens such as salsa gardens, pizza gardens, dinosaur gardens, and herb gardens, that include specific plants aligned to a particular theme can both capture their interest and cultivate their growth.

The Children's Garden at the Manatee County Extension Office, Palmetto, offers children the opportunity to explore a sensory garden, wetlands, a goldfish pond, a large garden sundial, and a garden maze, all in a "green setting." Call us today to schedule an activity with your youth program.

"...and the secret garden bloomed and bloomed and every morning revealed new miracles." (The Secret Garden by Francis Hodgson Burnett)





What's This? ~ Slime Mold

By Joy Derksen, Master Gardener 2004



Slime molds are strange to look at and even biologists find them strange to categorize. At first scientists thought they were fungi—like mushrooms. Now they think that they are more closely related to amoebozoia.

Sometimes this organism lives as a single cell and you would never see it. At other times the cell gives out a chemical signal and cells get together and form a group that results in a slippery yellow mass in your mulch beds. Some start out bright yellow and others are more of a tan color. It will eventually turn grayish brown and produce spores that go off into a dusty cloud when disturbed and disappear. Some grow up to several feet wide.

The one pictured here that showed up in Master Gardener Carol Davis' lawn is called *Myxogastria* or called by its charming common name—Dog Vomit Slime Mold.



Q: This is a photo of the small, white caterpillar currently infesting my back yard, lanai, surfaces of my house and anywhere else they land. They are literally floating around on the air. There is a huge strangler fig in my back yard and I am suspecting these bugs are coming from that tree. The bugs do not seem to be interested in any plant life nor do they bite. They crawl on the aforementioned surfaces, then affix to the surface and spin a cocoon around a blackish body. They are all over the screened in lanai, under the eaves of the house, on watering cans, on just about any surface you can imagine. If I knock off the cocoon, it leaves a residue. They are about 1 inch long, with a white fuzzy body, and reddish.

R.U., Manatee County



This is the Edwards wasp moth caterpillar, *Lymire edwardsii*, a major defoliator of *Ficus* spp. trees. The treatment Bt, *Bacillus thuringiensis*, is available, but may be impractical to apply on a large strangler fig. Bt works when the insect eats it, so the tree would have to be sprayed and reapplied after a rain. For a large ficus, it would be almost impossible and, at the least, cost prohibitive.

The caterpillar likes to pupate on walls so be on the lookout for their cocoon and knock them off with a broom or a stream of water. The moth is on the wing all year round but the caterpillars are around from late summer through the fall. I have included a link to a publication about this moth/caterpillar for you to visit.

<http://edis.ifas.ufl.edu/pdf/files/EP/EP47800.pdf>

Visit our Plant Diagnostic Clinic every weekday except Wednesday, 9am to 4pm at the Manatee County Extension Office, 1303 17th Street West, Palmetto or call us with questions @ 941.722.4524 and ask for a Master Gardener.

Small Pest, Big Threat: Whitefly Biotype Q

By Amy L. Stripe, Master Gardener 2008



Photo Credit: Lance S. Osborne, UF/IFAS

Whiteflies are piercing, sucking insects found in a disturbingly large number of landscapes and commercial agricultural settings. There are four to five species in Florida that do the most damage, affecting fruit trees, vegetables, and certain palms and ornamental shrubs.

I'm sure many of you know of the devastation caused to our commercial tomato industry by whiteflies (in this case both the sweetpotato whitefly - *Bemisia tabaci* biotype B - and the greenhouse whitefly - *Trialeurodes vaporariorum*). These insects cause leaves to yellow and curl, but more importantly, transmit (vector) fatal diseases such as tomato infectious chlorosis virus and tomato yellow leaf curl virus.

You may remember last year's rampant rugose spiraling whitefly (*Aleurodicus rugioperculatus*), which in particular favored live oaks, gumbo limbos, coconut palms and other ornamental trees and plants, leaving behind massive amounts of waxy material on plant leaves and sooty mold (growing on their excrement).

Adult whiteflies are small - 1/16" long - and resemble tiny white moths when disturbed. However, they are more closely related to scale insects, especially resembling scale in their egg and nymph stages.

As if only to make our lives more interesting, a new type of sweetpotato whitefly has been found in Florida. It is called *Bemisia tabaci* biotype Q. Among the smallest of whiteflies - more gnat-sized than small moth-sized - they are less than 1/25th" long.

Whitefly in general can be controlled by spraying an insecticidal soap or oil on the undersides of leaves or with a systemic insecticide as a soil drench. However, Biotype Q is inherently resistant to most pesticides. While it has only been found in commercial greenhouses thus far, the fear is that it may be transported into the home landscape (via a fruit, ornamental, or vegetable plant purchased by a homeowner) and from there it might spread to a commercial agricultural operation.

University of Florida scientists and state agricultural authorities are asking for your help as a homeowner in helping keep an eye out for and control Biotype Q. This includes scouting your garden frequently for signs of whitefly, removing and securely disposing of infested plant material, and applying pesticides that are least likely to develop resistances in the pest, including oils and soaps.

Bring suspicious white flying specimens into our Plant Diagnostic Clinic for identification. Keep specimens in plastic, zip tight bags.

For more information and photographs of eggs, larvae, and adults go to:

<http://stlucie.ifas.ufl.edu/pdfs/Environmental%20Hort/2016/qbiotype.pdf>

More whitefly information is available at:

<http://edis.ifas.ufl.edu/in286> or

<http://edis.ifas.ufl.edu/in695>.

Natural Pesticides – Choosing Your Product

Text and photographs by Norma Kisida, Master Gardener 2012



“First do no harm”

As homeowners become more concerned about the health and environmental effects of synthetic pesticides, they are turning to natural products.

While both synthetic and natural pesticides are very powerful tools, they can have unintended consequences and should be used very selectively and only when necessary. An integrated pest management (IPM) program advocates using the least toxic method to control pests.

After regularly scouting your plants for pests, the first step is to identify the insect. Many insects are beneficial, preying on the "bad insects." If there is a good balance of beneficials in the garden, these predators may move in and take care of any pest problem.

The next decision is whether treatment is indicated; how much damage is the pest insect doing? The damage may be minimal or simply cosmetic.

If you have determined elimination of bad insects is necessary, non-pesticide options include hand picking or pruning off pests, or spraying with a sharp stream of water. Some natural plant-derived pesticides that had been used for many years but were displaced starting in the 1950s by synthetics are now resurging in popularity.

There are traits of these natural pesticides that make them a good choice. Most natural products have a **fast breakdown**, as they degrade rapidly in the environment. They have **fast action**, as they paralyze or stop the feeding of the targeted pest. Most have **low toxicity** to mammals if used correctly at the prescribed rate and directions on the label. Most, if used correctly, have **low phytotoxicity** or leaf burn.

A disadvantage is the **cost** and **availability**, as some may be more expensive or difficult to find. Some may not be registered by the EPA for sale in every state. Some products have a substance added as a synergist to make the product more effective. Also, certain of these pesticides, whether "natural" or not, are **not selective** in their elimination of insects, meaning they will wipe out any insect, good or bad.

Six classifications of common natural pesticides are:

1. Oils (plant and petroleum derived) such as citrus oils, neem, and horticultural oils are most effective against immobile or slow moving insects. The pests need to be covered with the product that does not have residual activity so often need to be reapplied. This method is non-selective.

2. Plant extracts include concentrated plant compounds such as pyrethrums/pyrethrins that are derived from the flower of chrysanthemums. These compounds cause insect paralysis on contact effective. Other products in this class include hot peppers that contain capsaicin that is combined with paraffin and used as a repellent. Other products in this class such as Rotenone, Ryania, and Sabadilla pose significant health risks and **are not** currently registered or recommended.

3. Insecticidal soaps are made from the salts of fatty acids from animals and plants. These act only on contact and are useful on soft-bodied insects. Check the product label for the insects they are effective against. This method is non-selective.

4. Mineral insecticides include such products as diatomaceous earth, sulfur, and snail and slug baits.

5. Microbial insecticides are living microorganisms (or their toxins) and include viruses, bacteria, fungi, protozoa, or nematodes. Examples include *Bacillus thuringiensis* (Bt) and Spinosad (highly toxic to bees when wet). These products target a specific category such as caterpillars so there is a low risk to humans and unintended organisms. They are available in a variety of application methods.

6. Natural products for disease management are not as numerous as those for pests but include products such as copper, sodium bicarbonate, and potassium bicarbonate.

Read and follow all label directions carefully as natural does not mean "safe" if used incorrectly.

Information for this article was taken from the University of Florida publication **“Natural Products for Managing Landscape and Garden Pests in Florida”** <http://edis.ifas.ufl.edu/in197>. Master Gardeners at the Manatee County Agriculture and Extension Service can help you identify your plant problems and find the best solution (941) 722-4524.

Summary of insecticide (botanical, mineral, synthetic) toxicity to mammals

Product	Type	Mode of Action	Plant Pest(s) Targeted
Btk (<i>Bacillus thuringiensis</i> var. <i>kurstaki</i>)	Microbial	Stomach poison	Caterpillars
<i>Bacillus subtilis</i>	Fungicide	Protectant	Root-infecting fungi; powdery mildew
Diatomaceous earth (Silica shells of diatoms)	Mineral	Cuticle disruption	Slugs, millipedes, sowbugs, and soft-bodied insects like aphids
Bicarbonates (Potassium and sodium)	Fungicide	Protectant	Powdery mildew and other diseases
Horticultural oil (Petroleum-based)	Oil	Suffocation	Scales, aphids, mites, whiteflies, and many others
Copper	Fungicide	Protectant	Many fungal and bacterial diseases
Hot pepper (<i>Capsaicin</i>)	Botanical	Repellent	Many insects
Insecticidal soap (Potassium fatty acid soaps)	Soap	Cuticle disruption and other modes	Soft-bodied pests (aphids, mites, whiteflies, thrips, mealybugs, etc.)
Limonene/Linalool (Citrus oils)	Botanical	Contact poison	Aphids, mites, fire ants, flies, and wasps
Neem extracts (<i>Azadirachtin indica</i>)	Oil/Botanical	Repellent, insect growth regulator	Numerous chewing and sucking insects (when immature); powdery mildew disease
Plant oils (Extracts of garlic, sesame, citronella, many others)	Oil	Repellent, contact and stomach poison	Numerous insects (depends on extract)
Pyrethrins/Pyrethrum (<i>Chrysanthemum</i> sp. extract)	Botanical	Contact activity	Many insects
Spinosad	Microbial	Contact and stomach activity	Caterpillars, flies, and thrips
Slug and snail baits (Iron phosphate)	Mineral	Stomach poison	Slugs and snails
Sulfur (By-product of natural gas and petroleum refinement)	Mineral/Fungicide	Contact poison	Mites, psyllids, thrips; powdery mildew, rust, leaf blight, and fruit rot diseases

Part Two: Nutrient Deficiencies in Landscape Palms

By Nancy Hammer, Master Gardener 2014

In the September issue of the "Bench," we discussed nitrogen and potassium deficiencies. This article will cover magnesium and iron deficiencies.

Magnesium (Mg) deficiency symptoms occur on the *oldest* leaves, and typically consist of wide, light yellow bands along edges of leaflets, with the central part remaining distinctly green, and an inverted "V" shaped yellowing of the leaf. There is no necrotic (dying) leaf tissue. Magnesium deficiency is rarely fatal.

Magnesium deficiency in the landscape can be caused by leaching from rainfall and / or irrigation. High levels of potassium or calcium in the landscape may also result in magnesium deficiency.

Preventative treatment for magnesium deficiency is the best approach, since correction can take one to two years. Old, deficient fronds need to be replaced by new growth. Application of a balanced, timed-release fertilizer containing magnesium will solve the problem in the long term. More detailed information on management of magnesium deficiencies can be found in the online UF/IFAS publication, "Magnesium Deficiency in Palms" by Timothy K. Broschat.

Using Epsom salts in your landscape as a source of magnesium is prohibited in Manatee County due to the fertilizer ordinance. Epsom salt is water soluble and not a time-released fertilizer.

Iron (Fe) is not a common deficiency in landscape palms and is not generally caused by a lack of iron in the soil.

More often, it is caused by reduced root respiration from planting palms too deeply or from highly alkaline soils that block iron uptake. Also root rot caused by root suffocation will greatly reduce iron and other nutrient uptake. High levels of some other nutrients may also cause this deficiency.

Iron deficiency symptoms appear as green veins surrounded by yellow tissue on leaflets, diffuse green spots on otherwise yellow background on leaflets, or uniform yellow of the *newest* leaves. Older leaves stay green. However, if deficiency is prolonged, the entire tree canopy may become chlorotic (yellowed).

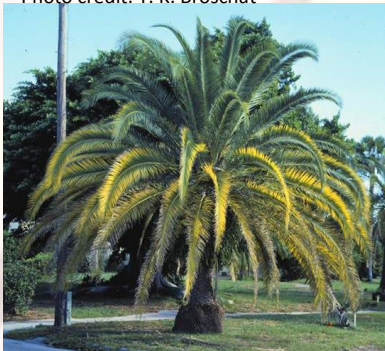
As with other deficiencies, prevention is key. Planting a palm at the same level as in the nursery container in a well-drained soil will help avoid problems. If a palm is planted too deeply, it should be dug up and replanted at the correct depth. Where high levels of some other nutrients are the issue, the problem can be treated with chelated compounds. Unlike other deficiencies, iron deficient leaves can regain green color with appropriate treatment.

More detailed information on management of iron deficiencies can be found online in the UF/IFAS publication, "Iron Deficiency in Palms" by Timothy K. Broschat.

For more information, visit: <http://edis.ifas.ufl.edu/ep261> or call the Master Gardener Plant Clinic at (941) 722-4524.

Next month's issue, we will discuss manganese and boron deficiencies in palms. Stay tuned!

Photo credit: T. K. Broschat



Magnesium deficiency in *Phoenix canariensis* showing broad yellow bands along the margins of the oldest leaves.



Magnesium-deficient older leaf of *Livistona rotundifolia* showing yellow bands around the margins of individual leaflets.



Iron-deficient new leaf of *Caryota mitis*



Iron-deficient new leaf of *Syagrus romanzoffiana* showing green spotting on chlorotic background.

Landscaping for Hydric (Really Wet!) Soils

By Mack Lessig, Master Gardener 2015 and Ross Peterson

"Good morning. I work for a large landscaping company in Bradenton. Many customers tell us nothing will grow in their yard because: their soil is persistently wet; it is the last lawn in the neighborhood to be mowed as their lawn stays wet; and/or the area in which they wish to plant is wet for longer periods of time than the rest of their yard or neighborhood.

"Do you happen to have a list of plants, shrubs, and trees (mainly shrubs) that do well in wetter soils? Any information would be greatly appreciated! Thank you so much for your time."

I received the above e-mail about two weeks ago from an employee of a local nursery. This is a fairly common issue in some suburban developments, so I started making a mental list of plants and cultural practices that would address her concerns. I then subconsciously reread the subject line: "Hydric Soils." After a fifteen-second search on Google, I was feeling better about the term "hydric soils." I found an entire UF IFAS website dedicated to the subject, defined below:

Soils found in wetlands are called hydric soils. Hydric soils exist when an area is saturated, flooded, or ponded for so long during the growing season that the upper soil level is without oxygen. There are two types of hydric soils: those with decomposed organic material, and those without. Each has unique characteristics.

<https://soils.ifas.ufl.edu/wetlandextension/whatis.htm> has more information.

Most home and landowners lament wet, soggy areas of their landscapes. Unsurprisingly, most people decide that these areas are eyesores and remove them. Fortunately, with a little perseverance, some tall boots, and copious amounts of mud, one can incorporate this former eyesore into a beautiful, thriving part of the landscape. Florida is home to a diverse and spectacular menagerie of shrubs, trees, and wildflowers that thrive in these hydric soils.

Landscapes with hydric soils and exposed to full sun (6-8+ hours) are awarded the most diverse selection of native flora to play with. To get the best visual display, you should incorporate a layered, dimensional theme. The canopy should consist of medium to large trees such as the bald cypress (*Taxodium distichum*), pond apple (*Annona glabra*), or loblolly bay (*Gordonia lasianthus*). The shrub layer follows that and may consist of buttonbush (*Cephalanthus occidentalis*), wax myrtle (*Myrica cerifera*), and sandweed (*Hypericum fasciculatum*). Finally, the herbaceous or wildflower layer should be the most plentiful. Swamp milkweed (*Asclepias incarnata*), Coreopsis (*C. leavenworthii* and *C. floridana*), and the giant swamp hibiscus (*Hibiscus grandiflorus*) are excellent examples of natives for the wildflower layer.

Those shaded, damp areas with 2-4 hours of sunlight are rewarded with a limited, yet unique collection of plants. This hydric landscape will also incorporate dimensions, but with less emphasis on trees. The canopy layer in this shady situation may consist of dahoon holly (*Ilex cassine*) or sweetbay magnolia (*Magnolia virginiana*). The subsequent shrub layer can be home to yellow star anise (*Illicium parviflorum*), swamp azalea (*Rhododendron viscosum*), and Virginia willow (*Itea virginica*). The wildflower layer may consist of aquatic milkweed (*Asclepias perennis*), lizard's tail (*Saururus cernuus*), and swamp lily (*Crinum americanum*).

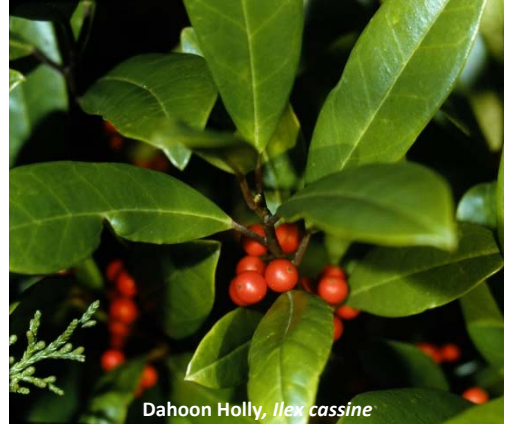
So instead of treating those wet hydric soils with disdain, use a little gusto and create a stunning, three-tiered ecosystem. Through your muddy, tough work you will discover the beauty and importance of these hydric soils. Within moments of completion, your new landscape will be inundated with the many organisms that call these areas home. You will also have the added benefit of having a dazzling array of unique flowers, shrubs, and trees unavailable to your neighbors! (They'll probably be jealous...)



Bald Cypress, *Taxodium distichum*



Buttonbush, *Cephalanthus occidentalis*



Dahoon Holly, *Ilex cassine*



Giant Swamp Hibiscus,
Hibiscus grandiflorus

Steve Christman © 2008 FloridaData.com

November CALENDAR OF EVENTS



Photo: Forest & Kim Starr (USGS)

Date	Time	Event
3 rd Tuesday of each Month	10:00 a.m.	Monthly Guided Tours of the Master Gardener Educational Gardens - Join us for a guided tour lasting about one hour. The gardens illustrate a variety of garden styles and techniques, demonstrate Florida-Friendly Landscaping™ principles, educate residents about plants that perform well in Florida landscapes, and inspire garden visitors to follow recommended gardening practices at home. Register by calling the Master Gardener Plant Diagnostic Clinic (941) 722-4524.
2 nd & 4 th Saturday	10:00 a.m.-1:00 p.m.	Ask a Master Gardener – Rocky Bluff Library – 6750 US Highway 301 N., Ellenton. Visit the Extension Master Gardener information table and get answers to your gardening questions.
Saturday November 12	9:00-11:00 a.m.	Extension Master Gardener Plant ID Tour – Emerson Point Preserve - Stroll through Emerson Point Preserve to learn more about Florida's native plants and inhabitants of a coastal habitat. Suitable for all ages. Tour begins in tower parking area at 5801 17 th Street West, Palmetto. Call the Extension Master Gardeners at (941) 722-4524 to register.
Saturday November 12	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 Master Gardeners at (941) 722-4524.
Saturday November 19	10:00 a.m.-Noon	Tillandsia "Make and Take" Wreath Workshop - Learn about these lovely epiphytes that only require air and water to live. This is a "make and take" workshop where you will create a wreath using Tillandsia plants. \$35 for materials is by due November 10 th and guarantees your spot in class. Cash or check only, checks made payable to Friends of Extension. Register online at http://manatee.ifas.ufl.edu or call the Extension Master Gardeners (941) 722-4524.
Saturday November 19	1:00-3:00 p.m.	Explore the Alternatives to Citrus - Would you like to replace citrus trees that are declining or expand the variety of fruits from your garden? Master Gardener John Dawson will introduce you to non-citrus fruit trees suitable for our area and provide plenty of growing and harvesting tips. Register online at http://manatee.ifas.ufl.edu or call the Extension Master Gardeners (941) 722-4524.
Sunday November 20	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. Tour begins in parking area by main entrance at 1704 99 th Street Northwest, Bradenton. To register call the Master Gardeners (941) 722-4524.
Tuesday November 29	1:30-3:30 p.m.	Taking The Mystery Out of Micro-Irrigation - This class satisfies the irrigation educational requirement for the Manatee County Outdoor Water Conservation Rebate Program. Learn how to select, install, and operate your own water-saving micro-irrigation system. Register online at http://manatee.ifas.ufl.edu or call Joann (941) 722-4524.
Wednesday November 30	1:30-3:30 p.m.	Ground Covers – Plants That Work This class satisfies the irrigation educational requirement for the Manatee County Outdoor Water Conservation Rebate Program. Learn how landscaping with low-growing ground cover plants has become a popular trend in landscape practices. Register online at http://manatee.ifas.ufl.edu or call Joann, (941) 722-4524.



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