



The COMPOST Pile

...for discerning weeders

A Newsletter of the Okaloosa County Master Gardeners Association — May 2010

The Best Fertilizer

Lynn Fabian

Want to start a fight? Ask two gardeners which is better, organic or inorganic (chemical) fertilizer. The answer, as usual, is somewhere in the middle. There is probably no right or wrong here. And like an old idiom, the devil is in the details. Small things overlooked can cause you problems later on.

The bottom line is that plants use fertilizer after soil microbes break down the components. The results of the breakdown are dissolved in the soil solution (water film around soil particles). Then the roots can take in the “fertilizer” and use the nutrients for the plant. And fertilizer is not food. We don’t “feed” our plants. We provide the best combination of soil components possible so the plant roots can take in the building blocks to support photosynthesis in the plant. Then the plant makes its own “food” through photosynthesis using those building blocks and the sun.

Organic fertilizers require more processing in the soil before the plant can get what it needs. Chemical fertilizers are closer to a form the plant can take up soon after application. Applying organic fertilizer makes it hard to overfeed. The nutrients are available only as soon as the soil microbes can process them. Chemical fertilizers are potent right out of the bag and can provide that immediate boost a plant needs. The immediacy can also present the plant with more nutrients than can be taken up. The excess can potentially be washed away with rain or irrigation; one of the “devilish details” when the chemicals get into the water ways.

Generally adding organic fertilizer to soil can improve the tilth of the soil which provides benefits other than simple fertilizer. U of Florida articles recommend when planting a vegetable garden to apply some chemical fertilizer even if you plan on using the organic type. Organic fertilizer takes longer to break down and become available to plant roots. Unless you have planned ahead to allow time for the breakdown to occur, the chemical boost will get the newly planted garden off to an earlier start. For the truly organic garden, a year-round application program is needed to keep the fertility of soil at a constant rate. In our Florida soils, that is not always easy.

“The natural fertility of Florida’s soils is low due to their sandy nature and low organic matter content, but the small amount (often less than 2%) of organic matter in Florida’s mineral soils is responsible for most of the soil fertility (i.e., 95% of the nutrient holding capacity is due to the <2% of soil organic matter present in Florida’s sandy soils). As a result, Florida soils usually cannot provide a sufficient amount of nutrients to growing plants. Consequently, homeowners may have to apply fertilizers to the soil in order to correct or prevent nutrient deficiencies. However, fertilizers must be used with care to prevent pollution of water resources. The only notable exception is the organic soils, which contain thick layers of organic matter and are extremely fertile when drained.” <http://edis.ifas.ufl.edu/mg450>.

I am assuming the organic soils referred to above are those that are in our wetland areas. I won’t get into the wisdom (or lack thereof) of draining a wetland to get at the fertile layers of organic soil that has accumulated.

The primary nutrients in fertilizer are nitrogen (N), phosphorus (P), and potassium (K). These major nutrients usually go lacking from the soil first because plants use large amounts for their growth and survival. These three are the bulk of the fertilizer. The numbers on the bag refer to NPK; 15-0-15 or 6-6-6, etc. Still with me? Thought so...

Nitrogen: In a 2009 report from UF, it was reported that ammonium nitrate, a “workhorse N fertilizer used by citrus growers for decades”, has been affected as much as any N source by price fluctuations in the past few years.

Twelve years ago the U.S. was the largest exporter of N fertilizer in the world. We are now the biggest importer. Ammonia is produced by combining N from the air with hydrogen at high temperature and pressure. The hydrogen is derived from natural gas, which accounts for around 80% of the production cost. Natural gas is cheaper in places like Trinidad, Russia and Venezuela. So we import to keep our farming cost lower.

Phosphorus: One of the primary nutrients essential for plant growth and crop production, phosphorus is a non-renewable resource that must be mined from nature. It cannot be artificially produced. We do not, however, mine phosphorus. We mine phosphate minerals.

Potassium: This element is almost as important as N in our landscapes. Applying a fertilizer with approximately equal amounts of N and K is the usual recommendation. If your soil analysis indicates your soil is deficient in K, there are fertilizer blends on the market to supply this need.

The secondary macronutrients are calcium (Ca), magnesium (Mg), and sulfur (S). There is often enough of these nutrients in the soil so adding these three is not

necessary. Also, large amounts of Calcium and Magnesium are added when lime is applied to acidic soils. Sulfur is usually found in sufficient amounts from the slow decomposition of soil organic matter, an important reason for not throwing out grass clippings and leaves.

Micronutrients are those elements essential for plant growth usually needed only in very small (micro) quantities. These elements are sometimes called minor elements or trace elements. Use of the term micronutrient is encouraged by the American Society of Agronomy and the Soil Science Society of America. The micronutrients are boron (B), copper (Cu), iron (Fe), chloride (Cl), manganese (Mn), molybdenum (Mo) and zinc (Zn). Recycling organic matter such as grass clippings and tree leaves is an excellent way of providing micronutrients (as well as macronutrients) to growing plants.

If the organic matter is not available, micronutrients can be purchased and used in addition to the basic fertilizers.

Before applying fertilizer to your landscape or crops, always have a soil test done to determine the need for the nutrients. You might save money and time by not having to buy certain nutrients.

<http://edis.ifas.ufl.edu/ss457>

<http://fipr1.state.fl.us/PhosphatePrimer>

For humans, phosphate requirements come from the food we eat which comes from what grazed upon or was grown on soils containing the nutrient. Sources include milk, lean beef, potatoes, broccoli, wheat flour and some cheeses. Some of the mined phosphate goes into such products as soft drinks and toothpaste. “Wanna go to the drugstore and have a phosphate?” At one time, this provided the fizz in drugstore sodas. Phosphoric acid is still used in most colas, root beers and other dark-colored commercial soft drinks. There are those who think we consume too many phosphates.

Coming Events

MG General Meeting – May 5, 2010 – 9:00 a.m.
May Board Meeting – May 19, 2010, 9:30 a.m. – location to be announced

- May 4th, Rain Barrel Workshop–Sheila Dunning, Crestview Library, 10:30 a.m.
- May 8th, North American Spring Bird Migration Count – 862-6582 – Don Ware
- May 8th, Landscape Work Day, Crestview, 7:30 a.m. 'til
- May 18th, Nursery Scouting Class, Ext. Annex, 10a-2p
- May 26th, Plant Clinic, Ext. Annex 10a-1p
- May 26th, Nursery Work Day
- Every Friday, Nursery Work Day, 10a 'til.

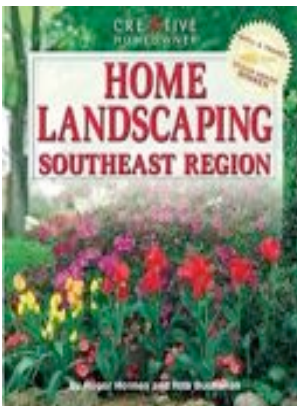
(E-mail events to [Editor/Compost Pile](#))

Book Review

Klare Fox

Home Landscaping Southeast Region

by Roger Holmes and Rita Buchanan



Many times as Master Gardeners we are asked to help homeowners select "the right plant for the right place." This month's book, Home Landscaping Southeast Region, will provide visual and informational inspiration!

With input from five seasoned southern garden designers, the book is divided into three sections; a design portfolio with over

twenty different plans, an installation guide and plant profile guide.

The design portfolio addresses special needs, whether it be a street-side welcome, a wooded retreat for the backyard or a just-getting-started perennial border. Each design includes a to-scale site plan, an artist's rendering of how the scheme will look after establishment and a brief description of each plant used in the design. The plants are listed according to common name, but scientific names are also given, as well as a reference to photographs located elsewhere throughout the book.

Especially helpful is a concept box that gives information about the site itself (whether sunny or shady, for example) and tells what season is depicted in the artist's rendering. An alternate plan for each design is also offered so that you may more easily adapt the plan to your own needs.

The second section covers implementation of the design, from basic soil improvement and plant selection and care, to building hardscapes such as walkways, trellises, and retaining walls.

Section three is a profile of the plants used in the design portfolio. Chosen carefully for proven dependability in the southeast region, each plant also offers a pleasing form in at least two seasons of the year. Color photographs and more complete descriptions of the plants are found here.

This is a book found in my home library that is referred to again and again. It's fun to dream with and practical to use. Happily, it is also available on the shelves of the Master Gardener's Reference Library at the Extension office (#211, thank you Faye and Marilyn!) and at your favorite online book sources.

ISBN # 1-58011-003-7

Florida's Coastal Dune Lakes

Tuesday, April 27th, seventeen MGs travelled to Walton County to learn more about the coastal dune lakes. Our guide was our own (shared with Walton County), Brooke Saari. Here is a brief synopsis of what we learned:



Coastal dune lakes are a rarity in the world occurring only in New Zealand, Australia, Madagascar, Oregon and right here in NW Florida. Walton County has 15 named coastal dune lakes. Many of the lakes are surrounded by development; however lakes, Campbell, Morris and Stallworth are enclosed within Topsail Hill Preserve State Park. We visited Western Lake, a larger lake, which is found in both Grayton Beach State Park and Watercolor.

So what is a coastal dune lake? These are lakes that are found close to the coast and that intermittently have a connection to a salt water body such that they release fresh water into it and can take in salt water from it. The result is a habitat rich in biodiversity. Waters in the lakes may have different salinities at different depths so one could catch either marine or freshwater fish. They also provide critical habitat for insects and migrating birds.

The lakes are filled from rain and ground water seepage as well as underground springs. At some point, the lake reaches its capacity in both water and energy and must release the excess into the sea. The site at which the lake "connects" to the sea is called the outfall and it may be open for weeks or only hours, depending on the dynamics of the lake system. Some lakes rarely, if ever, reach their capacity and so never have an outfall.

We are lucky to live in an area with such varied ecosystems. Drew has reminded me that is one reason that we must take care of our natural resources and our natural places. We don't want to lose or diminish them. Hopefully, one day he will take his children to see the rare coastal dune lakes and they will still be as splendid as they were last Tuesday.



Photos by Klare Fox

When we had a panel dedicated to the Florida Yards & Neighborhoods *Nine Principles*, I could have run through these in my sleep. The panel was invited at various times to speak to groups and the topic was the same each time with one of us taking a section and presenting it. There were times when there were more of us as presenters than there were people in the audience.

Time to brush up on the 9 Principles of Life...no, that's not it! Check yourself against the Nine Florida-Friendly Landscaping Principles.

[Florida Yards Landscaping Quiz](#)

Click on either link and take the quiz. It is "graded" immediately and returns your answer list and all the correct answers so you can see how you did.

Be careful! There are one or two questions that are presented in such a way as to make the answer hard to determine. Go slow and see how you do.

It is an easy way to review.

<http://floridayards.org/landscape/quiz/>

Happy May Master Gardeners ☺ Many of you have been busy helping with various activities that our association continues to support. Time, Energy and Volunteerism is an ever challenging but rewarding experience.



I want to take this time to thank you for your involvement and service to the citizens of Okaloosa County. Phone calls, plant clinics, home visits, and presentations are just a small part of what we do as ambassadors of the University of Florida Institute of Food and Agricultural Sciences. The knowledge that we receive and continue to learn through advanced training regarding the growing environments of our state answers the questions of those residents that reside or are new to our area.

I see a number of these individuals day to day. The "box store" that I frequently attend sees many transitioning green thumbs venture into the garden center this time of year looking for "that plant" that they grew in so-and-so place. I enjoy talking to them while letting them know of what sources our county and state has available to support their landscaping plans.

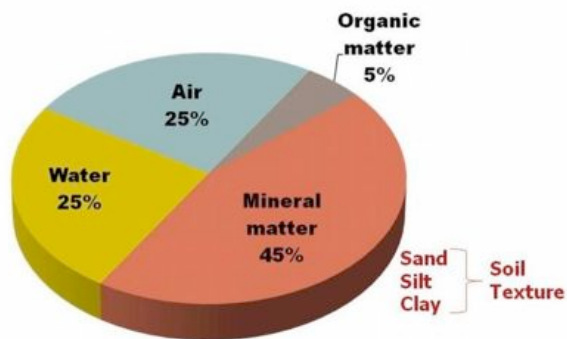
Our website is one easily accessed by the public <ocmga.org>. Our phone call aficionados at both offices are ready to answer their calls from the fields. Our seasoned plant experts are at the monthly clinics to receive bags of "goodies" brought in from residents' yards for diagnosis. Our Outreach traveling show on the road continues to be readily attended. The word continues to get out to our residents. They are our students and we are their classroom.

Thank you for what you continue to do for our association and as ambassadors of the University of Florida! Jardinières de maître font l'arriver et je suis si fier pour être une partie de cette association merveilleuse :)

V/r
Michael ☺

Remember that 2% figure? Or the 1%-5% of organic matter in Florida soil? Why is it so important?

Figure 1. Typical Components of Soil.



The organic matter in our soil is always changing. Apply it to the ground today and in three months there may be little of it left.

Organic matter in soils provides a variety of benefits. These benefits include improvement in physical, chemical, and biological properties of the soil. The main benefits are:

- Maintenance of stable soil pH: It helps to keep soil pH in the neutral range (pH: 7-8), which is optimum for most garden and landscape plants. [ed—I thought neutral was 7. 8 seems a little high to me.]
- Regular supply of plant nutrients and maintenance of soil fertility: Plants obtain essential nutrients (nitrogen, phosphorus, potassium) from decomposing organic matter. While the non-living part of organic matter (humus) does not directly provide nutrients, humus improves soil fertility by holding plant nutrients so they remain available for growing plants and do not leach from the soil.
- Maintenance of adequate soil structure: Helps provide pores and channels in the soil that allow rainfall or irrigation water to pass through the soil. Reduces the runoff of water and nutrients, and soil erosion and protects the soil from compaction so it is easier for plants to grow.
- Supply of energy to soil microorganisms: Organic matter is the main source of food for several microorganisms (bacteria, fungi, actinomycetes). When fresh organic matter (e.g., plant tissues, organic

- wastes) is added to the soil, these microorganisms start the decomposition process. During this process, nutrients are released, soil aggregates are formed, and humus is created.
- Removal of harmful pollutants: Soil organic matter binds with selected harmful pollutants like residual pesticides and trace elements so that these constituents cannot escape from the soil and pollute our water bodies.

What can you do to add organic matter to your soil? If you lived in the forest, you would let leaf litter and animal residue fall to the earth and be consumed by all the microorganisms and fungi that normally live in the soil. Nature would take care of itself.

We interrupt the normal cycle by removing all the litter and sending it to a landfill where it is out of sight, out of soil. If you live in my neighborhood and leave the litter where it falls, you would get a letter from the home owner's association that would want to know when you planned on raking the litter and mowing the grass to conform to the "look" of the urban setting.

A quick (non-obvious) way to add organic matter to your soil is to leave grass clippings on the lawn. Mow frequently enough to only remove the recommended 1/3 inch of a leaf blade and the cuttings can fall back to the ground and substitute for one fertilizer application per year. Rake the leaves and oak "worms" and use as mulch. Compost what you can and use the results in garden beds to improve the soil.

Another option is to purchase organic amendments (e.g., composted manures, biosolids or yard waste) from a lawn and garden store or a local composting facility. First, keep what is free; don't let it off your property if it can benefit your soil.

Compost should have no recognizable bits when you spread it out. Animal manures are an excellent source of nutrients and organic matter and can be successfully added to soils **after** being well composted. Much as I love the organic solution to soil problems, I draw the line at chickenhem, chicken manure right under my nose.

Building soil organic matter is a slow and gradual process. Plus, Florida's warm, wet climate makes it hard to stay ahead of the game. First, the amount of residue and organic matter needs to be increased. This extra amount will increase the species and diversity of macro-

and micro-organisms in the soil. These organisms then will actively decompose organic matter. It may take a decade or more for organic matter levels to significantly increase. Fortunately, the beneficial effects of the changes in organic matter can be seen after few additions of organic residues/compost.

There are some places that organic compost just doesn't seem to work as well as you might like. It is much easier to fertilize a lawn with granular fertilizer than to try to work compost into the turf. For our lawn, granular fertilizer is only one application a year as we do not catch the grass clippings but allow them to return to the soil.

Our nineteen year old centipede lawn has been undergoing a rejuvenation project. Larry told us about a U of GA research project that indicated that applications of peat moss to old lawns might increase the health of the lawn.

The lawn was looking a little thin in places. We tried the peat moss application over a couple of years and there was some increase in vigor in the turf.

We, (royal we...) Ed rakes leaves and pine needles into the perennial beds as mulch. After several years this becomes quite a mat. To remedy the mat formation he rakes out the beds and mulches the material with a lawnmower. The last couple of years he has raked the mulched litter across the lawn and watered it in. In addition he spread topsoil and raked it across the lawn and finished with a light dressing of fertilizer.

We don't have enough sunshine to have a luxurious lawn, but surviving nineteen years and still being presentable is quite an accomplishment. Stay tuned.

And keep those organic amendments coming.

<http://edis.ifas.ufl.edu/mg454>
http://edis.ifas.ufl.edu/topic_series_soils_and_fertilizers_for_master_gardeners

Last Word

Lynn Fabian

Nature's way is to let the leaf litter, animal litter and dying plants fall where they will and be worked on by the



soil microbes to produce the life force the surrounding plants need to sustain them for another year. Add litter from animals that live in the area and good rainfall and

you have a lovely eco-system we would all want to live in or near.

There are times I would like to apply this to housework. Believe me, I've tried. I used to know I needed to clean house when the dog started sneezing non-stop.

Hope your spring has been productive. Without a plant sale, we have spent more time on our bonsai trees and they are coming along nicely, thank you.

Please, if you have time on Saturday, May 8th, help out in the landscape in Crestview for a couple of hours. Call a friend to come up with you; carpool to save gas. Maybe plan on staying an hour or so after the meeting next week to pull a few weeds. Whatever it takes. The weeds are among us and they are gaining fast.

See you on the web site. —Lynn

A word of explanation is in order. I have used the words *microbe(s)* and *microorganisms* interchangeably in this [Compost Pile](#). The usage is the same in the articles that form the basis for the included material. One source said "microbe" is short for "microorganism".

About Us

The Compost Pile is a publication of the Okaloosa County Master Gardeners Association.



Okaloosa County Master Gardeners Association is a volunteer organization sponsored by Okaloosa County Extension and the University of Florida IFAS.



The Foundation for the Gator Nation...an equal opportunity institution.



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