

Sally Scalera, Urban Horticulture Agent

FS# 7107HORT

Lawn Care Practices for Healthy Turf & Waterways

Healthy lawns are not only pretty but they also cool the air, produce oxygen, reduce stormwater runoff, eliminate soil erosion, support soil microbe populations, and assist in the creation of soil organic matter. The production of soil organic matter, along with a thriving population of soil organisms, will create a soil that acts like a sponge. In the event of heavy rains, the soil will be able to absorb and hold onto the rainfall. This can greatly reduce both stormwater runoff and flooding. In addition, the soil will also have increased water and nutrient holding capacity.

Below are practices that can be used to grow healthy turf while protecting our waterways. The more practices you adopt, the healthier your lawn can grow and benefit the environment. Here is a “to do” list for your lawn.

- **Test the soil annually.** The UF Soil Lab tests for pH, phosphorus (P), potassium (K), calcium (Ca), and magnesium (Mg) for \$7 per sample when Test B is selected. This will give you an idea of what nutrients you need to apply, or not. The soil testing form can be found at this website address <http://edis.ifas.ufl.edu/pdf/files/SS/SS18700.pdf>. There is also an optional \$5 minor element test. The soil test will reveal if any nutrients are in high levels, which will tie up other nutrients. Here is an example:

Nutrients in Excess -----Nutrients affected (tied up)

N-----	K, Ca
P-----	Zn, Fe, Cu
K-----	N, Ca, Mg
Ca-----	B, Mg, P
Mg-----	Ca, K
Fe-----	Mn
Mn-----	Fe, Mo, Mg

Blue and black text are macro nutrients, red text are micro nutrients.

- **Choose the fertilizer analysis based on the soil test results.** As homeowners, we can only look for a fertilizer blend that has the closest ratio of nutrients shown by the soil test results. For example, if phosphorus is medium and potassium is low, then a 16-4-8 fertilizer would be the best fertilizer analysis to apply.
- **Fertilize turf a minimum of two times each year.**
 - Use a fertilizer that has at least 50% slow-release nitrogen.
 - Do not apply more than .25 pounds of P per application.
 - Do not apply more than .5 pounds of P per year.
 - After broadcasting the fertilizer, apply ¼ inch of irrigation water.

- Refer to the IFAS bulletin for your grass type
http://hort.ifas.ufl.edu/yourfloridalawn/turfgrass_selection.shtml
- **Apply 1 pound of nitrogen per 1,000 square feet.**
 - To determine 1 pound of fertilizer, take the first number of the fertilizer analysis and divide it into 100 for the pounds to apply per 1,000 sq. ft. of lawn. For a chart of fertilizer types, square footage of lawns, and amounts of fertilizer to use, refer to the bottom of page 26 at this link
[https://fyn.ifas.ufl.edu/handbook/Fertilize Appropriately vSept09.pdf](https://fyn.ifas.ufl.edu/handbook/Fertilize_Appropriately_vSept09.pdf)
- **Follow the fertilizer ban.** All of Brevard County and every municipality has adopted a fertilizer ban for **lawn & landscapes** which means:
 - No nitrogen (N) or phosphorus (P) can be applied from June 1 – Sept. 30th.
 - A minimum of 50% slow release nitrogen must be applied.
 - Phosphorus can only be applied if a soil test shows that it is needed.
 - For a chart containing links to all of the ordinances go to
<http://brevard.ifas.ufl.edu/ordinances.shtml>
- **Activate the shield on the spreader if fertilizing near waterbodies, roads, sidewalks, and driveways.** This will keep the fertilizer granules out of the water and off of impervious surfaces.
- **Designate a minimum of a 10 foot “maintenance free” zone** where there is no mowing, fertilizing or applications of pesticides! Refer to the ordinance chart mentioned above because some municipalities require larger “maintenance free” zones.
- **Don’t fertilize if heavy rain is forecasted** because nutrients can leach through the soil and/or the fertilizer could be carried off site by stormwater runoff.
- **Calibrate the fertilizer spreader.** Proper calibration of the spreader will prevent the over or under application of nutrients. For more information on how to calibrate a fertilizer spreader refer to this bulletin <http://pinellas.ifas.ufl.edu/FFL/pdf/ninePrinciples/ENH62.pdf> .
- **Water the turf thoroughly** because insufficient water is a common stress that turfgrass can suffer from. Water deeply but infrequently and aim to apply ½-¾” of water every time the turf is watered. For information on how to calibrate your irrigation system refer to page 19 at this link [https://fyn.ifas.ufl.edu/handbook/Water Efficiently vSept09.pdf](https://fyn.ifas.ufl.edu/handbook/Water_Efficiently_vSept09.pdf).
- **Water early in the morning.**
 - Best time start time for the system is just before or at sunrise, if all of the zones can be watered by 10 am. If more time is needed, then set the start time that much earlier. This will keep the amount of time that the leaf surfaces are wet to a minimum, which will reduce the opportunity for disease.
- **Get well water tested for conductivity.** High salt content in irrigation water can harm or kill plants. Let the irrigation system run for 20 minutes before collecting a sample. Water testing is done at our office for \$2.
- **Use a rain gauge in your yard.** Buy one, if needed, so that you will know how much rain your yard receives (or doesn’t receive) in a storm! A rainfall of ¾” means that the lawn has been thoroughly watered. A rainfall of 1” means that the trees and shrubs have been watered thoroughly.

- **Mow the grass high!**
 - Mow St. Augustine and Bahia 3-4 inches high.
 - The taller the leaf blades, the longer the roots.
 - This could be the 2nd most common stress for turf after insufficient watering.
 - For more information, or for information on other types of turf, follow this link <https://edis.ifas.ufl.edu/pdffiles/LH/LH02800.pdf> .
- **When mowing, let the clippings fall.**
 - Be sure to get the grass clippings off the impervious surfaces and back where they belong.
 - Clippings add organic matter and nutrients to the soil!
 - Don't remove more than 1/3 of leaf blade at each mowing.
- **Use organic fertilizers**, if possible, because they:
 - Are a food source for the soil microbes
 - May contain soil microbes too (just check the ingredients listed on the bag)
 - Help the soil build organic matter (OM). Research from the University of Illinois shows that synthetic nitrogen (N) depletes soil OM. For more information: <http://news.aces.illinois.edu/news/study-reveals-nitrogen-fertilizers-deplete-soil-organic-carbon> . If synthetic fertilizers are used, the lawn will benefit from adopting other practices such as the overseeding with rye and applications of liquid seaweed.
- **Top dress your lawn with organic matter.**
 - Apply ¼- ½ inch layer of organic matter over the lawn every 6 months. Monterey mushroom compost substrate or compost are just two examples of organic matter that can be used as top dressing for lawns.
 - Another way to add organic matter to the soil is to overseed with ryegrass during the winter. Rye will create a green lawn through the winter and then will die off in spring, adding organic matter to the lawn. Central Florida lawns can be overseeded from October through early December. For more information on how to overseed your lawn follow this link http://solutionsforyourlife.ufl.edu/hot_topics/lawn_and_garden/overseeding_winter_lawns.shtml .
- **Inoculate your lawn (and landscape) with arbuscular mycorrhizae (AM).**
 - Research done at the University of Florida has found that St. Augustinegrass has mycorrhizal relationships with a number of AM species within the genus *Glomus*. AM fungi form symbiotic relationships between the fungi and most vascular plants, up to 90%. This mutualistic relationship is accomplished by the plant supplying carbon and energy to the fungus and the fungus, in exchange, supplying the plant with mineral nutrients (a main one being phosphorus), water, and protection. http://ufdcimages.uflib.ufl.edu/UF/E0/01/54/21/00001/elmore_w.pdf For more information on the mycorrhizae and on-line sources, follow this link <http://mycorrhizae.com/where-to-buy/retail/>. A local source to purchase the mycorrhizae is Sun Harbor Nursery at 920 E. Eau Gallie Blvd, Satellite Beach where they

sell Dr. Earth products such as the Dr. Earth Life All Purpose Fertilizer in a variety of sizes.

- **Add worms (at least once) to your newly enriched soil.**
 - After applying organic matter to the lawn, landscape, and garden, purchase some red wigglers and distribute in the enriched areas. This may only need to be done once if you are continually amending the soil with organic matter or following these practices, which help the soil to create organic matter.
- **Re-mineralize the soil.** Our Florida soil has been leached, due to heat and rainy conditions, of many nutrients over the years. To help your lawn, consider applying sea minerals (i.e. SEA-90) and/or rock powders (i.e. Azomite).
 - For applying SEA-90 to lawns – application can be done through a hose end sprayer (suggested model is the Miracle Gro hose end sprayer) by filling the reservoir $\frac{3}{4}$ full of SEA-90 and spray the grass blades every 2 weeks. The rate for broadcasting is 1 pound per 1,000 square feet (or 50 pounds per acre if you have a large yard). This can be applied in spring. If lime is needed due to low pH levels, the foliar product of SEA-90 can be mixed with lime (or dolomitic limestone if Mg is low) and broadcast in spring also. If broadcasting SEA-90 you may not need to use the foliar applications as often, possibly just once a month.
 - Concerning Azomite, a 10 lb. bag will cover 2,500 to 3,500 square feet of turf. Apply up to 4 times per year. If establishing a new lawn, till into the soil before planting seed or laying sod.
- **Spray your lawn with biostimulants such as liquid seaweed.** Biostimulants are applied to plants or soils to enhance the plants health and/or microbial populations.
 - Use a hose-end sprayer for applying biostimulants to the lawn.
 - **Liquid seaweed** (or kelp) has over 60 trace elements, growth hormones, etc. Research has shown that it helps plants through environmental stresses of flood, drought, and cold. Seaweed can also provide a remedy for minor element deficiencies due to incorrect pH levels and excess nutrients.
 - **Blackstrap molasses** is the best type of molasses to use because of its high vitamin and mineral content. This is a source of Ca, Mg, K, and Fe. In addition, the natural sugars are food for the microorganisms in the soil. Any unsulfured molasses can be used.
 - For poor or stressed soils, use 1 cup **blackstrap molasses** to 1 gallon water.
 - For healthier soils, use $\frac{1}{4}$ to 1 cup **blackstrap molasses** to 1 gallon water.
 - **Molasses** helps to increase the bacteria population in the soil.
 - Another source of natural organic matter for soils is **humic substances**. These products are similar to compost in that they are decomposed organic matter, but they generally have been decomposing for thousands of years and may come from deposits of peat, lignite, coal, or marine algae. These all contain humic acids in addition to carbon, nitrogen, and often plant hormones. Sometimes the addition of supplemental hormones may provide benefits; for example, the plant hormone cytokinin is often found lacking in turfgrass that has suffered a root dieback or decline. Application of cytokinin can offset the resulting stress from the root decline.¹

- **Eliminate or reduce the use of pesticides.**
 - Consider adopting the philosophy “if it is low growing and green, just mow it.”
 - Biodiversity is good, so weeds can be a good thing. Weeds confuse chinch bugs.
 - Herbicides kill the soil microbes that photosynthesize which are the base of the soil food web.
 - Insecticides and fungicides harm soil microbes also.
 - The presence of pest insects and diseases are a sign that the plant is under stress.
 - Eliminate the stress, don’t just treat the symptoms! If the stress isn’t environmental, then it will be nutritional.
 - Liquid seaweed can help eliminate environmental and nutritional stresses.
 - This website can be used to search for biorational pesticides
<https://attra.ncat.org/attra-pub/biorationals/>.
- **Healthy soil equals healthy plants.** Biologically active soil produces thriving plants that can protect themselves from insects and diseases! This is how nature grows healthy plants without human intervention!
- Would you like help with your lawn problems? My Brevard Yard (MBY) is here for you! For more information on MBY, or to sign up for a workshop or a site visit, just go to <http://brevard.ifas.ufl.edu/>. The site visit includes a soil test, well water testing for salt content, fertilizer recommendation based on soil test results, and answers to all of your questions!

Resources

1. Organic Lawn Care <http://gardeningolutions.ifas.ufl.edu/lawns/lawn-care/organic-lawn-care.html>
2. The Florida Lawn Handbook <https://edis.ifas.ufl.edu/features/handbooks/floridalawn.html>
3. Lawn Maintenance
http://solutionsforyourlife.ufl.edu/lawn_and_garden/maintenance_and_care/lawn_maintenance.shtml