THE WALTON COUNTY GARDENER NEWSLETTER
NOVEMBER, 2023

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Greetings, fellow gardeners!

The Walton County Master Gardeners are proud to announce that we have been awarded the Master Gardener Volunteer Legacy Award from the University of Florida, IFAS Extension for the installation of Florida Friendly Garden at our Coastal Branch, 70 Logan Lane. Stop by and see our fabulous garden and if you have a question, Master Gardeners are on hand every Monday (day change for 2024) to help.

In our December issue:

"The Importance of Roots"

Alene Ogle, Walton County Master Gardener

"Plant Hardiness Zone Updates – What do they Mean?"

Evan H. Anderson, Walton County Extension Horticulture Agent

"Soil Compaction - Plan Ahead!"

Andrea M. Schnapp, Arborist and Walton County Master Gardener

"Gardening Mistakes This Year"

Andrea M. Schnapp

The Master Gardeners of Walton County wish you all a Blessed Holiday and New Year!

THE WALTON COUNTY
GARDENER
by Walton County Master Gardeners

Importance of Roots

Alene Ogle, Walton County Master Gardener

Thoughts of gardening, like those in our lives, often focus on what is most visible. However, to be successful in the garden, and to live a sustainable life, it is crucial to pay attention to what lies beneath all that catches our eyes at the surface. Failure to appreciate the multiplicity of events crucial in the rhizosphere of our plants can be the error that leads to disappointment. Those events taking place outside of our view are critical to the health, growth, and development of each plant, and contribute to the health of plants around them. Planting a tree and surrounding it with plants that seek deeper taproots may ensure that there will be little competition right below the ground for moisture and nutrients. Making sure you situate compatible plants in appropriate locations also applies to the root structure: "right plant, right place" is about much more than just what we readily see on the surface. While this article will only touch on some topics regarding roots, it can be a good starting point for further investigation. So, let's examine more about the importance of roots.

If you have ever experimented with a bean seed – wrapping it in a damp paper towel, for example, you will remember the interest that is sparked by the emergence of the primary root. The first thing to emerge from the seed thus identifies itself as a vital part of the plant. It anchors the plant to the soil, allowing it to absorb water. After the root absorbs water, the shoot emerges.

From this point on, most of our interest will be in the shoot. You will begin to learn just why that should not be your exclusive interest. What are some of the contributions roots make to the overall health and survival of a plant? Here are a few:

- Roots anchor the plant in place, resisting the forces of wind and running water.
- The root system absorbs the soil's oxygen, water, and nutrients to move them to the stem, leaves, and blooms.
- Roots often store the energies the plant creates through photosynthesis to make them available to the plant as needed.
- Plant roots also stimulate and support microorganisms in the soil that benefit plant life.
- Plant roots prevent soil erosion.

General Needs of Plants

The needs of plants are basic and well known: water, nutrients, oxygen. Each of these, as you will see, play a vital role, and all directly impact the health of the root system of each plant.

1. **Water**

   Plants can become stressed, stunted, and produce poorly without adequate water. Plant wilting is a primary symptom and indication of distress. Prolonged under watering will result in nutrient deficiency, indicated by leaf discoloration, and may result in plant death. For example, fluctuating soil moisture may leach calcium from the soil or limit calcium absorption, causing blossom end rot in tomatoes.

   A plant's water needs vary, so it is critical to understand its needs before you plant it.

2. **Nutrients**

   The soil surrounding roots, known as the rhizosphere, provides nutrients from microorganisms. Roots exude between 20 and 40 percent of their sugars/carbohydrates into the rhizosphere. Both microorganisms and plants benefit from the relationship. These relationships will only develop once the plant releases particular root exudates that attract the microorganisms they are seeking.

The root exudates, hairs, and other plant cells accumulate within the rhizosphere as they grow and die. This combination creates a "compost pile" within the rhizosphere. This is not a utopia; not all microorganisms benefit the plant.

3. Oxygen

Even though roots are buried, they absorb oxygen from the small air spaces in the soil. Overwatering and flooding cause a loss of oxygen in the soil and may result in plant death. Some plants have evolved adaptations to deal with extremely wet soil.

Compacted soils will deplete soil oxygen and water absorption and prevent root growth. Examples are car parking on grass and root-bound pots.

Roots and Shoots Relationship

Your plant has two parts: the shoot (stem/branches/leaves/blooms) above ground and the root system below ground. Fifty percent of the plant's energy is allocated to each part.

Roots and shoots are not different entities growing in opposite directions; they are whole bodies that must be well coordinated. Root and shoot growth are harmonized events; complementing each other with energy reserves and raw materials for bodybuilding equally allocated to the two halves. When daily or seasonal environmental changes affect one part, the other *must respond in sympathy* (i.e., wilting).

Roots and shoots must maintain a healthy balance in size to support each other for food production and stability. For example, if you do a severe cutback of a stem, all the energy will be put into regrowth, and you may not have any flowers that year. Remember that what you do above ground will have an effect below.

Don't Give Up

It will show in its leaves when a plant is stressed due to extreme temperatures, unusual amounts of drought or water, animal predation or disease. Limp or yellow leaves may indicate a plant has been exposed to stressful conditions. But plants can sometimes recover from stress. How do you know if your plant will recover? Look at the roots. Healthy roots make a healthy plant. And healthy plants may recover from stress.

Some plants develop particularly brittle leaves and stems to allow the plant to sacrifice top growth to herbivores or stress while protecting their all-important root structure. Grass easily tolerates lawn mower blades, rapidly producing fresh foliage to replace what is lost. At the same time, their root structure is highly resistant to harm, ensuring a long lawn life.

I always perform an "autopsy" on my deceased plants to determine the cause and prevent other casualties and mistakes.

Don't Spoil Your Plants

Overwatering and over-fertilizing will reduce the root-to-shoot ratio (fewer roots). Making our plants more resilient to less-than-perfect conditions is better. This will make plants invest more in a strong root system that can access more water and nutrients stored in the soil. Let nature do its job first before you reach for the fertilizer.

Tips:

- Never pot plants in dry soil; it should be moist to provide the roots with immediate moisture.
- Never leave roots exposed to air, light, and heat longer than necessary, especially during summer. They will dry out and die.
- Root-bound plants cannot efficiently take up water and nutrients.
- When purchasing plants, always remove them from the pot to ensure they are not root-bound, look healthy, and are not damaged. If a pot cannot easily be removed, do not force it, and do not buy it.

- Check your potted plants periodically to be sure they are not root-bound.
- Mow your grass at the right height; buzz cutting will set back the roots.
- Fertilize and water as needed.
- Damaged roots: If you break a few roots during transplant, they will regenerate with more roots.
- Fertilize the top of the soil lightly near the drip line, never next to the stem.
- Soil Erosion-Before you remove mature shrubs, grass, or trees, have a plan, your replacement plants on hand, and mulch. Check the long-range forecast; if heavy rain is coming, wait. Your new plant roots need a few days to get established. You may end up with a flooded bed or erosion by not replacing plants. All trees and plants absorb water differently. UF Extension information on rain garden plants is a good resource.
- The University of Florida has an excellent app that will provide you with user-friendly planting and care information: The **FFL Plant Guide https://ffl.ifas.ufl.edu/resources/apps/plant-guide/.**
- If you are still unsure or concerned about any problems, please contact the Walton Master Gardeners.
- Last but not least, "right plant & its **roots** right place! Ultimate satisfaction with your plants – whether esthetic or nutritional - depends on the health of the root system, and the care you take to insure the overall well-being of the entire plant.

Plant Hardiness Zone Updates – What do they Mean?

Evan H. Anderson, Walton County Extension Horticulture Agent

You may have heard that recently, the USDA updated its Plant Hardiness Zone maps. While many people understand that these maps tell you something about what plants you can grow in your area, the whole truth is a bit more complicated.

What is a plant hardiness zone? While it takes a lot of time and work to put together these maps, the information they convey is rather limited. A plant hardiness zone is defined by the average extreme minimum winter temperature in an area. How cold is the coldest day, on average, in your area? The answer to that is drawn from 30 years of historical weather data (in the current map's case, data from 1991-2020).

Pay attention to that "on average". This means that in any given year, it COULD get colder…or stay warmer than the average! Plants that can handle the average lowest temperature in an area might succumb to colder temperatures on a particularly frosty year. In an area like the Florida panhandle, we occasionally DO experience extreme temperatures which can do some serious damage to plants that seem like they should survive in the area, given our plant hardiness zone. Add to that the fact that box stores will sometimes sell plants that are definitely not able to survive in the local zone, and it can lead to some frustration.

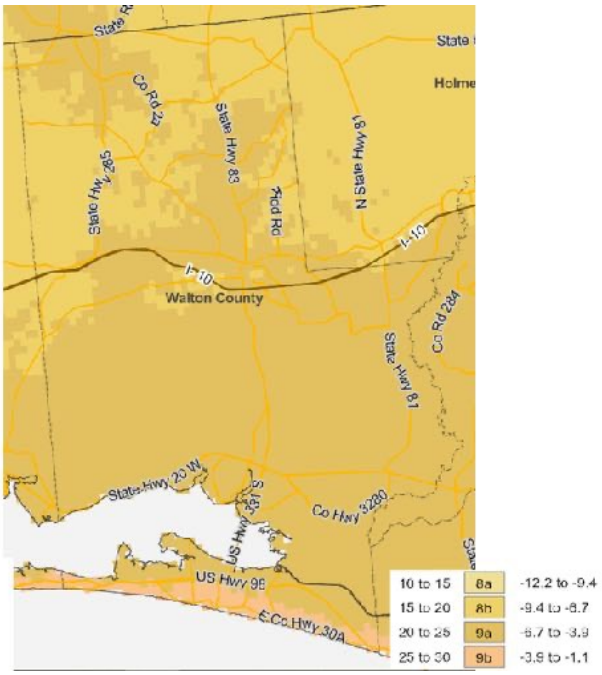
The majority of Walton County used to be listed as residing in Zone 8b, with an average minimum temperature of 15 to 20°F. The map now places us squarely in Zone 9a (20 to 25°F), with strips of 9b (25 to 30°F) near the beach and 8b along the Alabama border. While historical temperatures may back this up, please restrain yourself when purchasing tropical plants. We still see the occasional dip below the average – sometimes significantly so. A less cold-hardy plant may survive for several years (just long enough to get emotionally attached to it), and then die when we go through a bad winter.

A plant's ability to withstand the cold is further complicated by other conditions, such as soil moisture, local microclimates, and overall plant health. A plant that is usually hardy to temperatures as low as 15°F may become dessicated from too much wind during a frost. It may succumb to the cold if it is weak from insect damage or disease. It may, on the other hand, be healthy, have adequate moisture, and be planted in a location that is protected from the worst of the cold and survive temperatures even below its normal range.

Pay attention to all these factors when putting a plant in a certain spot. If the plant likes moist soil, avoid planting it in a dry area. If an evergreen plant is in a windy location, water it thoroughly just before a freeze (unless it's a dry-loving desert plant like agave). A sheltered spot may be able to protect a less hardy plant from the worst of the weather. And, of course, make sure all plants are otherwise as healthy as they can be. Scout regularly for pests and diseases and make sure they have adequate sunlight for their needs.

For more information, check out the USDA's plant hardiness website, including their "How to Use These Maps" page. To help find plants that are suited to a particular area, consult the Florida Friendly Landscaping Guide to Plant Selection and Landscape Design or the Florida Native Plant Society's plant finder

2023 PLANT HARDINESS ZONES



SOIL COMPACTION

Plan Ahead!

Below are photos taken at Grady Brown Park, just across the 331 bridge going east on the south side. These trees died because soil was plowed on top of them and heavy equipment (think bulldozers) were parked on their root system. These photos show just how roots perform under stress. They conserved energy with the serious threat, which allowed then to survive, albeit, not really grow, for more than several years. However, they are not going survive much longer and are considered a hazard as they could topple at any time. If you are going to build and want to save trees on your property, consult an arborist to protect them.

GARDENING MISTAKES THIS YEAR

Even the most skilled horticulturist, Master Gardener or landscaper can make mistakes, even if they know better. Some mistakes I've seen this year:

Pushing the envelope - even though we see these fantastic plants for sale and you desperately want to grow them, you may be setting yourself up for failure. The tag can say grows in gardening zone 4-9, and even though our county growing zone falls in that category, not all zone 8-9s are created equal! By way of example, Utah, New Mexico, Arizona, Neveda, Oregon, Washington, and Hawaii share the same growing zone as ours; however, it does not much take much imagination to realize that plants that succeed in these locations are vastly different. But you (okay, I) go ahead and buy that plant thinking you'll (I) will watch closely. Then it dies anyway. Pushing the envelope is costly; you spend more time and money taking care of a plant than if you had gone ahead and purchased the right one.

Right plant, right spot - *Lesson learned from above*. This is a photo of a very healthy sweet almond shrub I planted in my own garden. I love the scent and it never stops flowering! I figured I could just prune it to keep in check. However, the plant's growing habit does not conform to what is needed for the place I wanted it. It grows long shoots helter skelter without the inner portion of the shrub ever thickening. No amount of pruning will make this plant do what I want. I will have to remove this small tree (which I mistakenly thought it was a shrub!) in the spring as it has outgrown its space and is interfering with the proper growth of Peter suited shrubs around it.

Pruning - After visiting gardens where the owner states that their hydrangeas never flower, I find that out that they cut down the hydrangeas every

fall. Several hydrangeas grow on previous years' growth and the ill-timed pruning resulted in preset flower buds were removed in the pruning. Perhaps the biggest problem with flowering failure can be due to improper pruning. If in doubt, prune after flowering. One hydrangea, the panicle hydrangea, can be pruned in the fall, but only with limitations. They flower on new growth.

Using the wrong, or too much, soil amendments - The purpose to amending our soil is to improve it; but you can over do it. If you add too much compost, peat moss or whatever you choose to improve your soil, you can end up with the "bath tub effect". This is where water sits in your bed instead of draining. Soil drainage is very important, but so is soil amendments *if you need it.* However, you should amend only when it is warranted, and then you should amend the entire bed, not just the hole where you are planting. Adding a layer of compost in the fall is often advised, especially if you noticed any difficulty with your plants that experienced due to lack of water during our prolonged droughts. This will work well, even without working it in.