

Plant Health Starts with the Soil in Mind

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(Article published in Gainesville Sun on February 18, 2017)

Do you ever stare at your landscape and wonder why your plants are just 'eh'? In Florida, plants can have a multitude of problems. When determining the cause, I always like to start with knowing a bit more about the soil and I often recommend that homeowners get a very inexpensive soil test.

Although a soil test can be done at any time, it is recommended to do it before the growing season, so you can amend the soil if needed. It is best to do separate soil tests for your turfgrass, landscape plants, vegetable gardens, and backyard fruit since they may vary in pH.

Soil pH is a measure of the soil acidity (under 7) or alkalinity (over 7). Most plants prefer soil in the 5.5 to 6.5 range. This is also the range where most of the plant nutrients are easily available to the plant. Anything higher or lower than this, depending on the plant, may cause the plant to show nutritional deficiencies or toxicity symptoms. This stress increases problems with weeds, insects, diseases, and other disorders.

I tested my soil last year and discovered that my pH was 4.5! No wonder my grass barely grew and my azaleas thrived (they like acidic soil).

In this area, the soil pH varies quite a bit. Houses with a lot of pine or oak trees, like mine, tend to be more acidic. If you have natural lime rock in your area, your soil may be more alkaline. A common problem that can also increase the alkalinity in the landscape is the result of calcium carbonate-rich building materials, such as concrete or stucco, being left in the soil following construction or leached out next to the house.

Because of this, it is not recommended to use concrete rock as mulch. Plants grown in more alkaline soils may become deficient in iron, manganese, zinc, or boron. The best solution is not to necessarily add more nutrients but to adjust the pH so that the nutrients are more available.

If you are looking to add landscape plants or turfgrass, choose plants that are most suited to the natural pH of the soil. That will save time and future effort. If you need to change the pH, various soil amendments can be used but they are often short-lived.

To increase the pH of acidic soils, you can add a liming material like calcium carbonate or dolomite. Dolomite will also add magnesium to the soil. A soil pH test will indicate how much lime to add. For the lime to be effective, you should thoroughly mix it into the top 6 to 8 inches of soil.

For established landscapes or turf, apply it to the surface and water it in, but no more than 0.5 inches of water. Also choose non-caustic materials such as agricultural lime rather than hydrated lime which may burn your plants. If the recommended lime rate is more than 25 lb per 1000 square feet, split the application over a period of 3 to 4 weeks to reduce any complications.

Lowering the soil pH is much trickier. Soil pH can be temporarily lowered by adding elemental sulfur. Sulfur is applied at much lower rates than lime and can burn plants if used improperly. Other soil amendments, such as iron sulfate and "acid-forming fertilizers," commonly applied to azaleas, can have the same effect and less chance of over-application. Organic materials such as peat or animal manure can also be used to reduce the pH.

If you are a new gardener or a seasoned one, always consider the pH of your soil when selecting new plant material for your landscape or garden. Make it a habit to get it tested yearly. The UF/IFAS Extension Soil Testing Laboratory (<http://soilslab.ifas.ufl.edu>) can test the soil and provide recommendations for a small charge. Just bring one cup of soil to their lab or you can pick up a kit from the extension office.

If the results are confusing, feel free to give me a call to help you interpret them. For more information on soil pH, check the following UF/IFAS Extension publication, Soil pH and the Home Landscape or Garden, <https://edis.ifas.ufl.edu/ss480>.