

Texas has over 1,400 different soil types, ranging from sugar sands to heavy clay. Soil types across Wichita County are variable from clay (like the modeling variety in my backyard) to the sandy soils along the Red River. Soil, the anchor of your plants, is made up of 45% minerals, 50% air and water, and 5% decomposing organic matter. If you suspect the poor performance of your lawn, trees/shrubs, or garden may be due to your soil quality, you might want to pursue a soil improvement program.

The first step in any soil improvement program should be an analysis of the soil. This way you know what you are starting with and can choose the appropriate amendments and/or alternatives. The basic soil test performed by the Texas A&M AgriLife Extension provides information on soil pH, salt content, and available nitrogen, phosphorus, potassium, calcium, magnesium, sodium, and sulfur. The results of the soil test includes recommendations to the homeowner on soil amendments. Coincidentally, though soil testing can be done anytime of the year, the best time to test is in the fall.

What are the benefits of soil testing?

- Learn how to maximize the nutrients already in the soil (Making the nutrients in the soil more available to the plant).
- Identification of the nutrients lacking in the soil.
- Save on fertilizer by applying only what is needed (Too much nitrogen equals vegetative growth but little or no fruit production).
- Provide a proper balance of plant nutrients (balanced nutrition equals a healthy plant).
- Adjust soil pH to an optimum level (Ideal for most plants is in the 6s. Fruits like blueberries and shrubs like azaleas like higher pH).
- Reduce excess nutrients from getting into our water source.

One of the more effective amendments for soil is organic matter like composts, manure, straw, and dried leaves. These amendments modify the soil structure to slow drainage in sandy soils and speed drainage in clay soils. Plants receive nutrients via water absorbed through their roots as moisture percolates through the soil. Your plants need ample opportunity to absorb nutrients. And, your plants don't want to drown!!

Organic matter also encourages the development of the microorganisms. These microorganisms make nutrients from the decomposing organic matter available for plants. Adding organic matter also encourages the activity of one of my favorite macro-organisms, earthworms. Through their digestive processes earthworms till and enrich the soil.

There are also inorganic amendments to soil such as expanded shale, vermiculite, perlite, sand, or types of fertilizers. However, these can be expensive and, if you don't have a good analysis of

your soil, may actually do harm to your plants. It is a case of too little and too much are both harmful to your plants.

Ultimately your soil might have more needs than you can remediate through tilling and organic or inorganic amendments. We do live in an area where oil was produced as quickly as it could be found. Sometimes those processes greatly damaged the soil. In this case you want to consider some alternate methods of gardening like containers or raised beds or removing and replacing top soil.