

Gardening Basics

Soil Testing

Ever wonder what's going on with your soil? There's an easy way to find out— have it tested! The purpose of a soil analysis test is to provide you with a detailed analysis of your soil and recommendations on how you can improve soil fertility.

Why Soil Quality is Important

The soil is the source of all the elements plants need to grow, nutrients, organic matter, air, and water. Healthy soil is also the foundation of a water-efficient landscape, particularly here in North Texas, where our soils are almost always poorly draining sticky clay.

Over time the quality of your soil changes. A soil test can identify nutrient deficiencies, acidity or alkalinity, the amount of organic matter, and the texture of your soil. Caring for your soil by identifying what is lacking and adding amendments accordingly is key to growing healthy plants year after year. Of course, the soil test cannot identify issues with the amount of sunlight, pests, or drainage issues that may have affected your garden.

Where to Get Your Soil Tested

Texas A&M AgriLife Extension Service Soil, Water and Forage Testing Laboratory offers a soil testing service for a nominal fee. The results of the soil test are mailed or emailed to you with recommendations for which nutrients and how much should be applied. How easy is that?!

It takes 2 – 3 weeks to get results, so having your soil tested in late winter or early spring will give you time to make adjustments before the growing season begins. The tests should be repeated every 3 to 5 years.

Use this link to obtain the form for an Urban and Homeowner soil test which includes instructions for collecting samples, payment, and mailing: <http://soiltesting.tamu.edu/files/urbansoil.pdf>. The forms and sample bags are also available at the Denton County office of Texas A&M AgriLife Extension Service.



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What to Test For

- pH level or how acidic your soil is; if the pH isn't in the appropriate range, your plants cannot take up nutrients.
- Macro-nutrients Nitrate-nitrogen (NO₃-N), phosphorus(P), potassium(K), calcium (Ca), magnesium (Mg), sodium (Na) and sulfur(S).
- Micro-nutrients such as iron (Fe), manganese (Mn), and zinc (Zn) may not be needed if you regularly amend your soil with organic matter such as compost.
- Organic Matter can also be tested but may not be needed if you regularly amend your soil with organic matter such as compost.

It's not necessary to memorize all the elements to test. Just request the Routine Analysis Test (#1) on the test form from the Soil, Water and Forage Testing Laboratory. It is the base test for basic fertilizer recommendations.

How to Collect a Good Sample

Collecting good soil samples is critical to getting accurate results from your soil analysis.

- Use a clean shovel to collect soil, 6 inches deep, from 10 random areas in your garden.
- Place the samples in a clean plastic container and thoroughly mix them.
- Place about a pint of the mixed soil in a plastic zipper-lock sandwich bag and double-bag the sample. Soil sample bags and forms are also available at the Denton County office of Texas A&M AgriLife Extension Service
- Follow the same steps for any additional areas you'd like to have tested, e.g., lawn, flower bed. Don't mix the samples from the different areas and be sure to label each sample bag with a permanent marker in a couple of places (e.g., the front lawn and a vegetable garden).
- Complete the form, one for each sample, and send it with the sample to the address with the payment listed on the form within a day of taking the sample.

Understanding Your Soil Report

Now the fun begins . . . you will learn so much from the detailed soil analysis report that lists the results of the tests you ordered. If interpreting the report is a bit too much for you, drop by your county extension office for help.

The report lists the following information:

- Column 1: The most requested analyses
- Column 2: Results of the requested analyses
- Column 3: The critical limit for each nutrient and pH
- Column 4: The units of each of the parameters measured
- Columns 5 – 10: A graph of the soil sample analyses in comparison to the critical limit. If the results are greater than the critical limit, no additional nutrient will be recommended
- Column 11: The recommended nutrients per 1,000 square feet
- The bottom quarter of the report: Notes on management practices for the entire growing season for the crop/plants specified

So, get out there and start digging up those soil samples and act for a better gardening season this year!

Sources and Resources

Denton County Master Gardener Association. Master Gardener Intern Training. Texas A&M AgriLife Extension: 2018. Print.

"Texas A&M AgriLife Extension Service Soil, Water and Forage Testing Laboratory." tamu.edu, Texas A&M AgriLife Extension, 1 Jan. 2020, soiltesting.tamu.edu/.

Masabni, Joseph. "Soil Preparation." tamu.edu, Texas A&M AgriLife Extension, 1 Jun. 2014, agrilifeextension.tamu.edu/library/gardening/soil-preparation/.