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# Why Test Your Soil?



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Soil is defined as the unconsolidated mineral or organic material on the immediate surface of the earth. Soil is often divided into various categories, such as clay, sand, silt, and loam. There are many soil varieties and soil compositions can vary widely in organic matter, rock content, minerals, pH, and other factors. Your garden soil may be any combination of these components. The beneficial characteristics of a natural soil are adequate aeration, drainage, water-holding capacity, organic matter, gas diffusion, and micro flora and fauna. Conducting a soil test can provide valuable information on your soil's quality to help you manage your soil for optimum productivity.

Soil testing can provide important information to make decisions concerning:

- How much lime to use in lawns, vegetable or flower beds.
- How much fertilizer to use on lawns, vegetables, flowers, and shrubs.
- How to adjust the soil pH for optimum growth of acid-loving plants such as azaleas and rhododendrons.
- How to apply soil amendments and fertilizer to improve soil quality.
- Nutrients that are lacking or in excess in the soil.
- Amount of lead or other metals in the soil.

## How to go about it

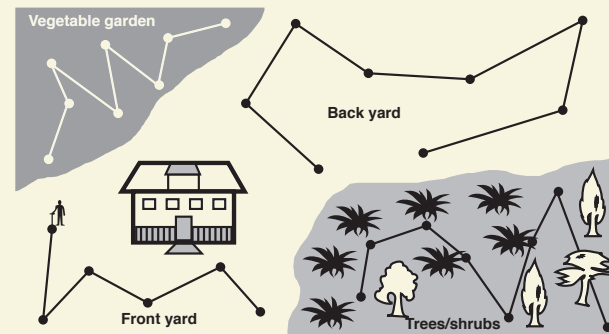
Soil samples are collected by the client and mailed to the lab for analysis. The first step is to request the information sheet titled: "Selecting and Using a Soil Testing Laboratory," from the Home and Garden Information Center, 1-800-343-2507, or any local Extension Office. Then follow these steps when collecting the sample:



1. Get a trowel and a bucket. Be sure neither is rusty or made of galvanized (zinc-coated) metal, which could skew your results.
2. Scrape mulch and leaf litter from the soil surface.
3. Dig out a wedge of soil about 6 to 8 inches deep, pour into your bucket.



4. Repeat steps 2 and 3 at least a half-dozen times in different parts of the garden so that the soil sample represents your whole garden when mixed. Sample each unique area separately. Each sample should represent only one soil type or area—for example, a lawn, vegetable garden or perennial landscaped area. For each unique area, take at least six to eight sub samples and combine them to make one composite sample.



5. Use your trowel to mix the soil together thoroughly.



6. Fill the soil sample bag with the mixed soil and mail it all off to the lab of your choice.

Send a minimum of 1 cup and a maximum of 2 cups of soil per sample. Don't send wet soil. You should not be able to squeeze water from the sample. Once you've collected your soil sample, send it to the selected regional soil lab with a check for the correct amount. Be sure to add enough postage when mailing the sample.

## The pH factor

Soil pH is a measure of how acidic (sour) or basic (sweet) your soil is. The pH directly affects nutrient availability. The pH scale ranges from 0 to 14 with 7 as neutral. Numbers less than 7 indicate acidity,

while numbers greater than 7 are basic. Some plants such as azaleas, rhododendrons, blueberries, and conifers prefer acid soils. Vegetables, grasses, and most ornamentals prefer more neutral soils. In fact, as the pH decreases, the availability of metals like aluminum, zinc, manganese, copper, lead, and iron increase. Consequently, in very acidic soil you will have plants showing problems such as aluminum and manganese toxicity, deficiency of essential nutrients, and reduced nitrogen transformations.

## Lime application

Lime raises the pH of the soil and supplies calcium and magnesium. For typical lawns you should apply lime if your soil pH tests less than 6. Lime may be applied at any time during the year, but late winter or early spring just prior to soil preparation is usually most convenient. If your garden soil is a combination of silt and clay loam, you can apply 1/2 to 1 lb of lime per square yard. Apply about 1/2 lb per sq yd if your garden soil is sandy to sandy loam.



Work the lime into the soil with a spade or a tiller to a depth of 6 inches. Lime will not move in the soil like water-soluble fertilizers. Maximum contact with the soil is necessary to neutralize soil acidity. As soon as moisture is present, the lime begins to react. Coarse lime particles react more slowly than very fine particles. Note that using very fine ground limestone and thoroughly mixing it is necessary to achieve the desired soil pH change within a few months.

### Sources:

*Selecting and Using a Soil Testing Laboratory*, Jon H. Traunfeld, Regional Specialist, Home and Garden Information Center. 9/05

<http://agmr.umd.edu>

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