Cornell University
Cooperative Extension

Albany County
William Rice Jr.
Extension Center
24 Martin Road
P.O. Box 497
Voorheesville, NY 12186-0497
t. 518.765.3500
f. 518.765.2490

SOIL SAMPLING FOR pH TESTING

Take a good sample and follow recommendations. Liming and fertilizing without a soil test is like building a house without a blueprint!

SOIL REACTION OR pH- Healthy flowers, houseplants, lawns, vegetables and trees are a source of pride and satisfaction to the grower. One way to help assure proper growing conditions for plants is to have a proper soil **pH**. A soil **pH** test is recommended before planting, as well as every two to three years for established plants. The **pH** test is helpful in the diagnosis of plant problems.

The term **pH** refers to the acidity or alkalinity of the soil. A pH of 7.0 is neutral, 6.9 or lower is acid, and 7.1 or higher is alkaline. Acid soil is sometimes referred to as "sour" soil and alkaline as "sweet".

The availability of nutrients to plants is affected by the soil **pH**. A correct **pH** allows the plant to utilize the nutrients in the soil. The ideal **pH** range for most plants is 6.0-6.8. A soil with a **pH** out side this range may decrease the quality of the plant of its yield or possibly even kill it under extreme conditions.

For good growth, plants need various elements, especially nitrogen (N), phosphorus (P) and potassium (K). Minor or trace elements are usually not a problem in garden soils, if one adds organic matter and uses a complete fertilizer. Fertilizers come in different forms, both organic (natural) and inorganic (synthetic). Some sources of organic matter are peat moss, compost, manure, leaf mold and plant residues. Organic matter loosens and improves clay soils. In medium and light sandy soils, the addition of organic matter helps to hold moisture and nutrients.

Nutrient soils tests are more expensive than **pH** tests. Determine whether you really need a nutrient test or not, but don't neglect to have a **pH** test done as indicated in the preceding material.

HOW TO TAKE A SOIL TEST FOR A pH or NUTRIENT TEST- A good soil sample is most important when testing soil. Test data is practically worthless if the sample is not representative of the particular soil under consideration.

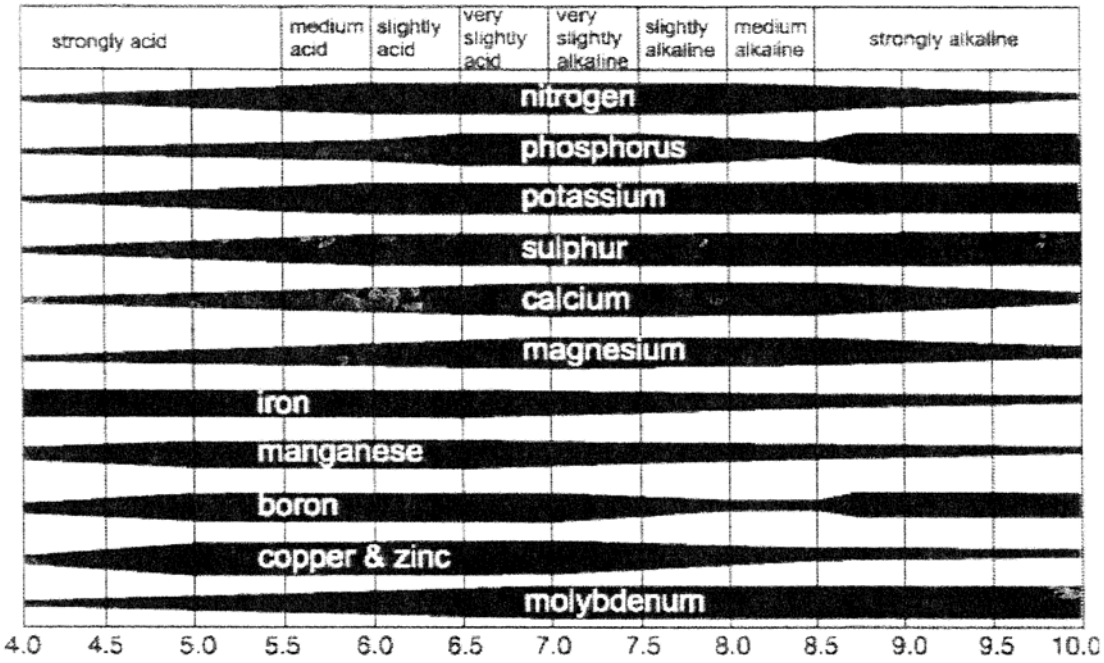
Different soils such as those from: gardens, lawns, houseplants, rhododendron and blueberry beds are sampled separately. Unusual areas should not be included in the sample, but can be done separately if desired. These can include, strips adjacent to highways or driveways, severely eroded spots, low wet areas, or areas set aside specifically for acid-loving plants such as rhododendrons and blueberries.

STEPS:

1. Use a clean pail and shovel, uncontaminated by pesticides, fertilizers, lime, etc.
2. Small sub-samples (1-10 depending on the size of the plot) should be collected and thoroughly mixed in a pail. A sub-sample consists of a downward slice taken from the side of a hole 4-6 inches deep.
3. Remove large stones only! Do not handle the soil or sift through it.
4. Mix the sub-sample together and put one cup of the representative sample of the mixture in a labeled container. Place name, address, date and location of sample on the label. This is especially important if you have to leave the sample.
5. If the soil is WET, air dry naturally. DO NOT use artificial heat such as an oven to dry it.
6. NOTE: Areas where you have spread wood ashes (alkaline), lime (alkaline), ground sulfur (acid) or fertilizers in the last four months will be greatly influenced by these materials. Information concerning past cropping, liming and fertilizing must also be included for more accurate analysis. Giving information on the plant(s) and problems you are experiencing is also valuable.
7. Soil tests DO NOT show insect or disease problems.
8. Results of the **pH** and/or nutrient tests will indicate what the grower must do to restore proper soil conditions for optimum plant health.

Prepared by Onondaga County Extension-
Reviewed by Master Gardener Cathie Gifford
4/04

Chart of the Effect of Soil pH on Nutrient Availability



Cornell University
Cooperative Extension
Albany County

24 Martin Road, P.O. Box 497 ● Voorheesville, NY 12186 ● (518) 765-3500 ● FAX (518) 765-2490
www.ccealbany.com