Determining the Health of Your Soil

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Soil is the foundation to plant sustainability in the landscape. Unfortunately, the importance of soil to plant health is often overlooked because our eyes tend to focus on what is above ground rather then below it. What our eyes are missing are some of the key features necessary for plant health. Organic matter, moisture, and nutrients, along with soil texture and structure are factors that affect the growth of plant roots and the health of the plant.

The only way to determine the health of your soil is to put the shovel in and get your hands dirty. Assess the health of your soil by looking at the surface soil color and evaluating water-holding capacity. If the soil is dark brown-black, this indicates a sufficient amount of organic matter is present. If the surface soil has little or no standing water after it rains or is irrigated, this indicates good drainage and ample pore space for roots to grow and for gas exchange to take place. Determining the other properties of your soil can be difficult without consulting a soil scientist or a soil testing laboratory (see below).

Several representative samples of your soil will be required to obtain an accurate assessment of soil fertility. Samples should be taken from different areas in your landscape, such as your front and back lawns, different garden beds, or under your trees and shrubs. Depending on the size of the area, up to 15 subsamples should be taken at random locations in the lawn, several subsamples should be taken from each garden bed, and three subsamples should be taken evenly spaced from beneath target trees or shrubs. For each subsample, surface litter, debris, or sod should first be scraped away. Remove samples from two depths: one at 4 inches and the other at a depth of 12 – 16 inches. A cup of soil from each depth is sufficient. Subsamples can then be mixed together, but make sure to keep the 4-inch and 12- 16-inch samples separated. The different areas of the landscape must also be kept separate. Approximately one pound of soil material in total will be needed for testing each area.

The average homeowner can perform a soil test by purchasing a kit at garden centers, but commercial laboratories are available to provide more precise measurements of your soil. Some university extension offices may also be able to perform soil tests to determine pH, potassium, and phosphorus, but more extensive assessments of your soil will likely need to be conducted by commercial organizations. Several options in the local area include:

- A & L Great Lakes Laboratories, Fort Wayne, IN, (219) 483-4759
- Alvey Laboratories, Bellville, IL, (618) 233-0445
- Kane County Farm Bureau, St. Charles, IL, (630) 584-8660
- Mowers Soil Testing PLUS, Inc., Toulon, IL, (309) 286-2761
- Northern FS, Inc., DeKalb, IL, (815) 756-2739
- Soiltech, Inc., Arlington, IL, (815) 638-2522
- University of Wisconsin Cooperative Extension Service, Madison, WI, (608) 262-4364

Most of these laboratories will interpret the data for an additional fee, and provide useful recommendations regarding the maintenance of your soil. With this information, you can proceed to correct any soil problems that have been detected through the addition of fertilizers, organic matter, or other modifications as necessary.

Determining the health of your soil is very important for maintaining healthy plants. Soil testing both before planting and periodically thereafter is a rather simple way to determine your soil conditions. There will be an initial cost, but in the long run, this process will save you money and headaches as you work to build a healthy landscape and maintain healthy plants.

Internet sites that may be useful include:

Http://www.woodsend.org/brinton2.pdf
Http://www.urbanext.uiuc.edu/gardencal/extra/soiltest3.html
Http://cf.uwex.edu/ics/infosource/soil.cfm
Http://www.statlab.iastate.edu/soils/nssc.use-man.html