A2166

Sampling garden soils and turf areas for testing

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Why should soil be sampled and tested?

Magazine articles and handbooks on lawn care and gardening frequently make generic recommendations for applying lime and fertilizer to turf areas and gardens. Such general recommendations encourage the practice of applying fertilizer indiscriminately and often unnecessarily. A far more effective way to determine the types and quantities of lime and fertilizer to apply is to have your soil tested. Determining the fertility level of a soil by a soil test is the first step in planning a good fertilizer and lime application program. In addition, several regions in Wisconsin currently have ordinances which mandate that in order to purchase and apply a fertilizer containing phosphorus (P) on established turf, a current soil test indicating a need for phosphorus is required. Contact your county courthouse to determine whether this applies to your area.

Testing soil can give information on the soil's ability to supply nutrients for best plant growth, thereby providing a scientific basis for deciding if and how much lime and nutrients are needed. Plants respond better to applications that are tailored to their needs rather than to general applications. Also, soil tests indicate when the applications are no longer needed. This means a cost savings to you, and, of equal importance, it avoids needless nutrient applications that can contribute to environmental pollution. The saying "If one pound is good, two are better and three must be best" does not apply to fertilizer!

When to sample

Testing soil about once every 3 to 5 years is usually adequate. You can sample soil anytime it is not frozen, although some times of the year are better than others. Sampling in early spring or late fall assures that you will have recommendations before buying lime and fertilizer. You need to allow at least 2 weeks for the laboratory to complete your analysis.

You can sample existing turf anytime during the growing season. Avoid sampling soon after fertilizer application, however. Remember, it's best to sample before applying fertilizer! Contamination of the soil sample with fertilizer particles will yield incorrect soil test results.

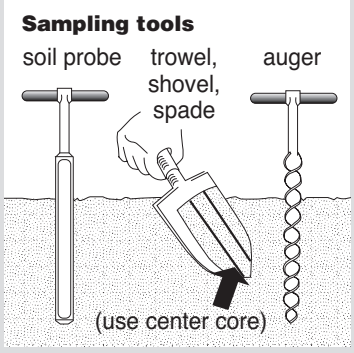
Sample properly

One of the most important steps in soil testing is taking the sample, because only a small portion of the soil you bring to the laboratory is actually tested. Remember that you are taking samples to obtain information and recommendations on which to base fertilizer and lime applications. Best decisions can only be made if soil samples are representative of the areas to be treated.

Soil around homes is often highly variable. Soil is moved around during construction, and some soil is hauled in either as fill dirt or as topsoil. Soil samples must represent uniform soil areas with similar past management. Otherwise, lime and fertilizer recommendations based on soil tests may not be correct for the area you intend to treat.

Quick summary

1. Soil testing is the only reliable method for assessing plant needs for lime, phosphorus, and potassium.
2. You should sample your soil once every 3 to 5 years.
3. Take at least 10 soil cores and mix them together thoroughly.
4. Soil cores should be taken to the same depth that the roots grow. This means 5 to 7 inches for most gardens and turfgrass areas. For golf course putting greens and tees, 4 inches is more appropriate.
5. Place 1 to 2 cups of the well-mixed soil in a clean plastic bag or a soil testing bag from your county Extension office. Fill out the paperwork and send it with the soil and payment to your Extension office or directly to the soil testing laboratory.



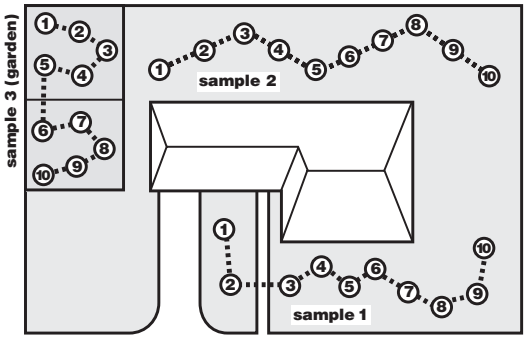
Where to sample

To ensure that the soil sample is representative of the area to be treated, you need to make a composite sample. Collect small samples from at least 10 locations in the area and combine them into one composite sample.

The number of composite samples you take depends on soil uniformity and past management. In areas that are frequently tilled such as gardens, the visual appearance of the soil is a good indicator of uniformity. In turf areas, appearance of the turf is important. For example, if the quality of the turf in front of the house is very different from that in back or on side areas, sample each area separately (see illustration). Always sample turf areas and gardens separately.

For sampling large areas such as truck gardens or sod farms, see Extension publication *Sampling Soils for Testing* (A2100).

Make a composite sample by collecting small cores from at least 10 locations.



How to take soil samples

A soil probe is the best tool for taking a soil sample. Your county Extension agent may have a probe to borrow or can tell you where to purchase sampling probes. Alternatively, you can use a shovel, trowel, or soil auger. Sample soil to the same depth as roots grow, normally about 5 to 7 inches. For golf course putting greens and tees, appropriate sampling depth is 4 inches. You need a total of 1 to 2 cups of soil for each composite sample.

What to do with samples

Place the composite sample in a clean plastic bag or get a wax-lined soil sample bag from your Extension office or soil testing laboratory. Label the bag with your name and the sample identity. If you take several composite samples, label each one differently and keep a record of the areas where you took each sample.

Next, fill out a Soil Information Sheet, obtain a copy online at http://uwlab.soils.wisc.edu/madison/sheets.htm or from your county Extension office or a soil testing laboratory. You only need to fill out one information sheet for each group of samples. The more complete the information you provide, the better the recommendation you will receive.

Deliver the soil sample(s) and accompanying Soil Information Sheet to your Extension office for forwarding to a soil testing laboratory. If this is not convenient, send the soil samples directly to the laboratory or deliver them in person. The University of Wisconsin operates soil testing laboratories in Madison and Marshfield. Extension offices have names and addresses of other private soil testing laboratories.

If you wish to have the University of Wisconsin test your soil, send samples to one of the following addresses:

UW Soil and Forage Analysis Lab
8396 Yellowstone Drive
Marshfield, WI 54449
(715) 387-2523

UW Soil and Plant Analysis Lab
8452 Mineral Point Road
Verona, WI 53593
(608) 262-4364

Contact the laboratory or your county Extension office for current soil testing fees. If you leave samples at an Extension office, pay the fee there. Otherwise, enclose payment with the Soil Information Sheet. If you send samples directly to a university laboratory, make your check payable to UW Soil Testing Lab.

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