



Taking Soil Test Samples

W.O. Thom, K.L. Wells, and Lloyd Murdock

When you take soil test samples keep in mind that a few ounces of soil are being tested to determine lime and fertilizer needs for what may be several million pounds of soil in the field. It is absolutely necessary to take care to assure that the soil sample you send to the laboratory accurately represents the area sampled.

Soil samples can be collected through much of the year, although fall (September to December) or spring (February to April) are the best times. Fall sampling will often result in a faster return of results and recommendations.

Tools You Need

A soil probe, auger, garden trowel, or a spade and knife are all the tools you need to take the individual cores that will make up the “field” sample (Figure 1). You will also need a clean, dry bucket (preferably plastic) to collect and mix the sample cores. Soil sample boxes or bags and information forms for submitting samples are available at all county Extension offices.

The most representative sample can be obtained from a large field by sampling in smaller units on the basis of soil type, cropping history, erosion, or past management practices. More accurate results are obtained when problem areas are sampled separately, especially when “troubleshooting” in fields during the growing season. In such instances, take a sample both from the poor growing area and adjacent areas of good growth. Designate each sample area with a letter or numbers on a field or area map for record-keeping purposes (Figure 2). A sample should represent no more than 20 acres except when soils, past management, and cropping history are quite uniform.

Collect at least 10 soil cores for small areas and up to 30 cores for larger fields. Take the soil cores randomly throughout the area to be sampled and place in the bucket.

Tilled Areas — Take soil cores to the depth of the tillage operation (usually 6 to 8 inches).

Non-Tilled Areas — Take soil cores to a depth of 3 to 4 inches for pastures and no-tillage planting where fertilizer or lime remains on the soil surface or is incorporated only in the surface 1 to 2 inches.

Lawns and Turfgrasses — Collect soil cores to a depth of 3 to 4 inches. Sample problem areas and areas with shrubs or flower beds separate from other turf or lawn areas.



Figure 1. A soil probe, auger, or spade and knife should be used in sampling soils. The spade sample must be trimmed as shown.

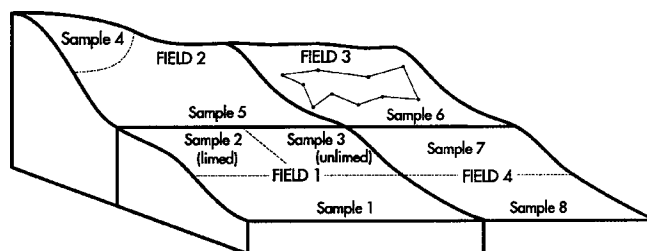


Figure 2. This shows how four fields might require the analyses of 1 to 3 composite samples for determining fertility needs. Each composite must contain 10 or more cores, as shown for sample 6 in field 3.

Do not sample:

- back furrows or dead furrows
- old fence rows
- near or in rows where banded fertilizer was applied
- areas used for manure or hay storage, and livestock feeding, or
- highly eroded areas.

For lawn and garden samples avoid

- compost areas
- under drop-line of trees, and
- close to yard driveways or streets.



Figure 3. Break up clods while sample is moist, and spread out to air dry in a clean area.

Sample Preparation

After all cores are collected and placed in the bucket, crush the soil material and mix the sample thoroughly (Figure 3). Allow the sample to **air dry** in an open space free from contamination. **Do not dry the sample in an oven or at an abnormally high temperature.**

When dry, fill the sample container with soil and fill out the information sheet completely (Figure 4). Separate information sheets are needed for:

- agricultural soils
- home gardens, lawns and turfgrasses, and
- commercial horticultural crops.

Completing all sections of the form will assure that the computerized printout of your recommendations takes into account all important factors needed for making the best possible recommendation.



Figure 4. Thoroughly mix the air dried sample, fill the sample bag or box, mark with your sample designation, fill out the information sheet, and take the sample to your county Extension office.