



CORNELL NUTRIENT ANALYSIS LABORATORY

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Directions for Soil Sample Collection

1. Establish a regular sampling time.

For most crops, the soil should be sampled every 2 to 3 years. For soils under intensive use, as in high-value cash crops or where nutritional problems persist, the soil should be tested prior to planting each crop. Soil samples may be taken at any time during the year, however avoid extremely wet soil conditions unless absolutely necessary. It is suggested that any given field be sampled at about the same time of the year.

2. Use proper sampling tools.

There are two important requirements. First, that a uniform slice be taken to the desired depth (usually the plow layer), and second, the same depth and volume of soil be taken from each spot sampled. A soil probe or augur is best; if not available use a garden spade or shovel. The technique for using a spade is to dig a hole to the sampling depth, cut a 1/2 inch thick slice of soil from the face of the hole, and trim both vertical sides of the slice so as to obtain a strip of soil about 1 inch wide from top to bottom. Do not use galvanized tools or containers because of probable zinc contamination.

3. Sample to the proper depth.

Cultivated agronomic crops and home gardens: Soil samples are ordinarily taken to the tillage depth. This depth is usually 6-10 inches but may be deeper. The tillage depth is important since lime and fertilizer are mixed within the tilled layer.

Minimum till crops: it is best to take a sample from 1-8 inch depth.

Lawns and pastures: a sample from the upper four to six inches of soil is satisfactory. Thatch and other visible plant residue should be removed.

Tree and fruit crops: sample to a depth of 6-12 inches.

Greenhouse and potting soils: each batch of soil and growth-medium mixture should be sampled separately.

4. Obtain a representative sample.

Each soil sample sent to the CNAL should be a composite consisting of the soil from cores taken randomly at several places across the field. The purpose of this sampling procedure is to minimize the effects of any local non-uniformity in the soil. Cores or slices of soil, from about 10-20 locations over the area, should be taken for each soil sample. The soil cores should be mixed well in a paper or plastic bag or plastic bucket. Metal containers, i.e. galvanized metal will contaminate the sample. Small, unusual areas should be avoided when the intent is to estimate the fertility level of the field. Areas that should be avoided include: dead or back furrows, near windbreaks, trees, fence lines, old manure and lime pits, wet spots, areas near lime rock roads, or boundaries between slopes and bottomland. To trouble-shoot a small area with poor crop growth, a separate sample of the unusual area is needed.

5. Prepare the sample for submission to the laboratory.

DO NOT SEND WET SAMPLES TO THE LABORATORY. They may leak in the mail, provide inappropriate results, and delay analysis. If it is necessary to sample wet soil, spread the sample in a thin layer on an aluminum pie pan or on a clean sheet of wrapping paper or waxed paper, and allow to dry out at room temperature. Do not use heat to hasten drying. A fan blowing across the sample usually speeds drying. In a wet sample, rapid biological transformations of the amounts and forms of soil nutrients (particularly forms of inorganic nitrogen) can occur. Drying is an effective means of preserving the field chemical characteristics of the soil sample. Place about 1-2 cups of the composited sample in a plastic bag along with the submission form and payment.

Certain tests require more than 1-2 cup for testing

Particle size >2 cups

Lime Analysis >2 cups