Soil Sampling

FGV-00044

WHY SOIL TEST?

Soil testing is a tool used to help maintain a more productive soil, to increase yield, or to establish plants more quickly - whether for a garden, a greenhouse, a lawn area, or a field. Soil tests provide information on selecting the correct fertilizer, the amount needed and the best time for application. In addition, if liming is needed, recommendations will be made. The laboratory analyzes soil for available major plant nutrients - nitrogen, phosphorus, and potassium - as well as determines soil pH - whether it is acid or alkaline. The Cooperative Extension Service will usually interpret the results and make recommendations. Some independent labs may also make recommendations.

WHY SAMPLE CORRECTLY?

Poor sampling gives misleading test results. Soil testing can be divided into three major steps: (1) collecting the sample, (2) analyzing the sample, and (3) interpreting the results. Collecting the sample is probably the most inaccurate of these three steps. Test results to represent an area can be no more accurate than the sample collected. Poor sampling techniques lead to inaccurate recommendations. Therefore, you lose yield, appearance and/or money by inaccurately applying fertilizer.

Get a representative sample. Remember, just a few grams of soil are actually used in the soil testing procedure, and these several grams must be representative of the total area to be tested. Best decisions can be made only if soil samples are representative of the area sampled and accurately reflect soil conditions.

Each soil sample should represent only one soil type, condition or growing situation.

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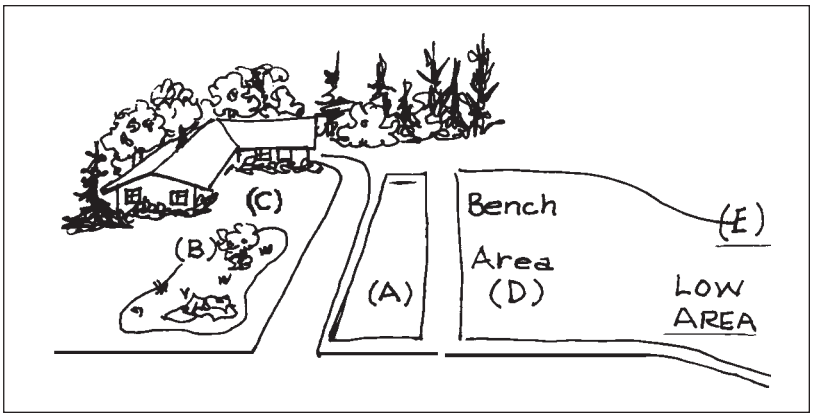
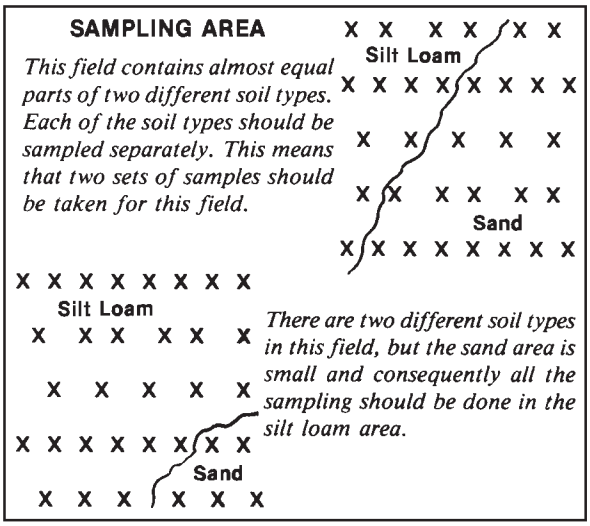
UNIVERSITY OF ALASKA FAIRBANKS
College of Rural Alaska
Cooperative Extension Service

Take a separate soil sample from each area:
(a) one for the garden, (b) one for the flower bed, (c) one for the lawn, and (d, e) one for each uniform land area within a field.



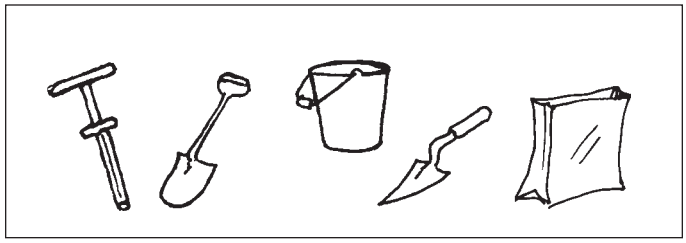


Sample separately the following areas and describe each:

- low spots
- different slopes
- coarse texture soils
- organic soils
- soils of different color
- bottom lands
- cropping history
- uplands
- irrigated vs. non irrigated
- sampling depth
- past fertilizing, liming or manuring histories

HOW DO YOU TAKE A SAMPLE?

Tools needed are simply a clean spade, a clean plastic pail, a clean knife or trowel, and a paper bag.

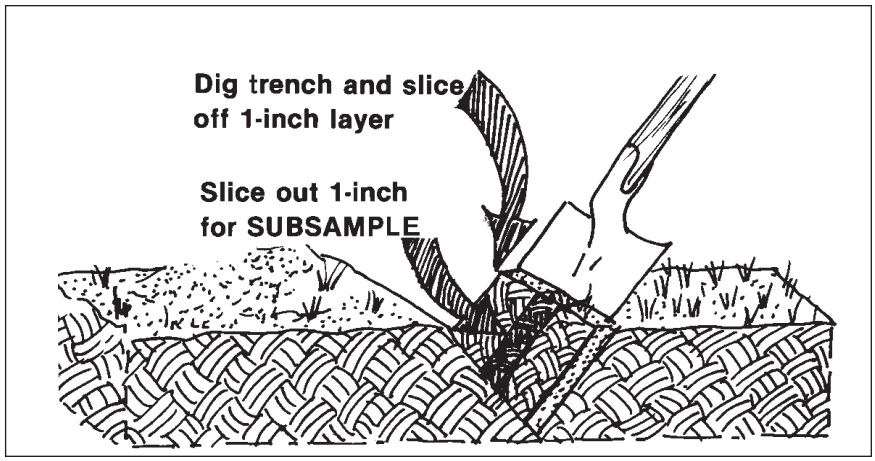


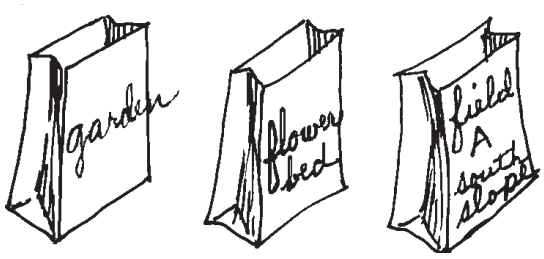
A good soil sample should represent the area. Each sample should consist of subsamples taken from at least five locations within a garden or lawn. Fifteen to twenty subsamples should be taken from a ten acre field. Do not sample shortly after lime, fertilizer, or manure application or when the soil is excessively wet. Don't sample snow-covered or frozen ground because it is difficult to obtain a representative sample. Fall is an excellent time to take your sample. Having the results in the fall can also give you a headstart next spring.

COLLECTING A SUBSAMPLE

Use a sampling tube, or if using a spade, follow these instructions:

1. Dig a V-shaped hole six inches deep or plow depth.
2. Take a 1-inch slice from one side of the hole.
3. Trim the sides of slice, leaving a 1-inch strip on the spade. Place this strip into the clean plastic pail.





Repeat this procedure until a representative number of subsamples are collected to make up the sample. Break up clods with your hands and thoroughly mix the soil in the pail by rotating the pail at a 45 degree angle. Remove approximately one pint of soil, place it into a paper bag, and label the bag as to garden, flower bed, south slope field A, etc., the date and your name. Discard the remaining soil.

Repeat the above procedure for the next area to be sampled, placing the samples in a separate paper bag. Be sure to label the paper bag promptly before you forget where the samples were obtained. Maintain a record of sampling areas to assist you in correctly applying the recommendations when they are received.

DRYING THE SAMPLES

Air dry all soil samples before mailing. Wet or damp samples stored for only a few days may yield unreliable results. Remove the soil sample from the paper bag and spread out in a thin layer about ¼-inch deep on wax or butcher paper. Dry at room temperature. CAUTION: Do not apply artificial drying by oven, stove or furnace as this may alter the sample results.

PROVIDE COMPLETE INFORMATION

After the soils have completely dried, place the samples into the soil test kit bags, fill to the correct mark, and clearly label. Fill out all requested information as completely as possible. This will ensure an accurate recommendation.

SUMMARY OF INSTRUCTIONS

1. *Take a representative sample.*
2. *Break up clods or lumps, spread out on wax or butcher paper in a well ventilated location and air dry at room temperature (usually 2 to 3 days).* ***CAUTION: Apply no artificial heat!***
3. *When dry, mildly crush the coarser granules to about the size of wheat grains and thoroughly mix.*
4. *Fill bag approximately half full of soil. Roll top of bag several times and bend over tab ends to lock bag closed.*
5. *Write your name on bag and identify sample with number in upper right hand corner of Soil Sample Information Sheet.*
6. *Your district Cooperative Extension Service office will provide you with the Soil Test Kit and will have you mail the sample directly to the soil testing lab. Checks should be made out to the appropriate laboratory. Do not send cash through the mail.*

SOIL TESTING COSTS

The Cooperative Extension Service provides soil test interpretations from laboratory analytical results. Laboratories vary in the cost of soil testing. Be sure to include payment with each sample mailed with the check made out to the appropriate laboratory. The district Cooperative Extension Service office will provide Soil Test Kits and a list of laboratories suitable to conduct the soil analysis. Be sure to notify the district agent if you want a fertilizer recommendation.

by Wayne Vandre
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