

Soil Sample Collection Guidelines

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It's important to have your soil analyzed regularly before making any crucial crop nutrient management decisions such as adding fertilizers, or soil amendments. Soil testing helps you better understand what nutrients are in your soil, what is your soil pH, and therefore determine how much lime or sulfur, and fertilizer you need to apply for the various crops you would like to grow.

Some of the standard information that you can get from testing your soil includes pH (acidity or alkalinity); soil nutrient status: macronutrients nitrogen, phosphorus, potassium, calcium, and magnesium, and micronutrients zinc, copper, iron, and manganese. You can also get information about the soil organic matter content and cation exchange capacity (CEC). CEC is the soil property that influences soil structure stability, nutrient availability, soil pH and the soil's reaction to applied fertilizers and other soil amendments (Hazleton and Murphy 2007).

Follow these guidelines for collecting representative soil samples from your farm.

1. Divide your greenhouse or farm into individual fields, blocks, or sections for sampling. If you have areas with variable crop growth patterns, or soil color take a sample from each of these areas. Keep these soil samples separate, mixing them may give you misleading information.
2. Collect samples that are representative of the field, section or block being sampled (Figure 1).
3. Do not sample areas that are too small to be amended separately, either with fertilizer or lime. Do not sample unusual areas, such as burn piles, along fence rows, along edges of the field, or other areas that are obviously different from the rest of the block.



Figure 1. Avoid unusual areas and choose representative locations within the field when collecting soil samples. Photo by Drew Mather.

4. Walk in zigzag pattern in the field and choose soil samples randomly as you go. Collect around 10 soil samples from the block that you wish to test.
5. Use proper sampling tools, such as a soil sampling tube, auger, shovel or trowel (Figure 2). Sometimes when the soil is compacted you might need a mallet or hammer to drive the sampling tube into the soil.
6. Before digging the soil to collect a sample, remove any organic matter such as plants, weeds, leaves, etc. from the surface of the sampling site.
7. When using a shovel or trowel to collect the soil sample, dig a V-shaped hole in the soil to the depth that you would like to test. Slice a section of soil from one side of the hole and lift out the soil section. Save a wide strip of soil from the center of this soil section for your soil sample (Figure 3).
8. When using a soil sampling tube or auger, take soil samples up to 1-ft depths from at least ten different sites in each field or block to be tested. Mix together the soil sample cores from one field or block. Put about 2 cups of the mixed soil in a soil sample bag.
9. Remove any root or other plant materials from the soil sample as they may adversely influence the results. Mix together all of the 10 or so individual soil samples from a block to make one representative sample for the block (Figure 4).
10. Identify the samples for different block separately by using unique letters or numbers. Make a record of which block or field each unique composite soil sample came from.
11. After collecting the soil samples, air dry them on some paper and in the sun until they are completely dry, before placing them into soil sample bags.
12. Complete the soil testing labs' required soil information sheets and soil submission forms.

Get your soil tested by a commercial accredited lab for accurate information. Most labs have a basic soil test package that you can start with. Soil labs often have specific protocols they would like you to use for sampling soil, and for storing the soil sample before shipping to the lab. Call the lab and ask them about their soil sampling



Figure 2. Using a shovel to collect soil samples in a water spinach greenhouse block. Photo by Drew Mather.



Figure 3. A V-shaped hole around 8 inches deep, and a soil slice section from one side of the hole. Photo by Drew Mather.

and soil sample packaging requirements before sending off soil samples for testing (Figure 5). Use a soil testing lab based in California to get accurate nutrient management information for your region. Let the soil testing lab know the crops you intend to grow before they do the soil testing. The lab can provide recommendations on the amount of nutrients or amendments needed based on your soil test results.



Figure 4. Remove roots and other plant materials. Mix together all the individual soil samples from one block to make one representative sample for the block. Photo by Drew Mather.



Figure 5. Label the soil samples and follow the packing instructions from the soil testing lab. Photo by Drew Mather.

Some Soil and Plant Testing Laboratories Close to Santa Clara County Are:

A & L Western Agricultural Labs

1311 Woodland Ave. #1
Modesto, CA 95351
Ph: 209-529-4080
Fax: 209-529-4736
www.al-labs-west.com

Control Laboratories

42 Hangar Way
Watsonville, CA 95076
Ph: 831-724-5422
Fax: 831-724-3188
www.controllabs.com

Eurofins BioDiagnostics

7240 Holsclaw Road
Gilroy, CA 95020
Ph: 408-846-9964
Fax: 408-846-9954
www.eurofins.com/biodiagnostics

Perry Laboratory

424 Airport Blvd.
Watsonville, CA 95076
Ph: 831-722-7606
Fax: 831-722-5053
www.perrylaboratory.com

Waypoint Analytical

1101 S Winchester Blvd Ste G-173
San Jose, CA 95128
Ph: 408-727-0330
Fax: 408-727-5125
www.waypointanalytical.com

Laboratories provided in this listing are for informational purposes only and do not constitute endorsement or recommendation by University of California Cooperative Extension, nor is criticism implied of similar companies that are not included.

References:

Hazelton P.A. and B.W. Murphy. 2007. Interpreting Soil Test Results: What Do All the Numbers Mean? CSIRO Publishing: Melbourne.