Soil Testing

Soil testing is an inexpensive yet valuable tool for assessing the fertility of lawn and garden areas. Test results indicate the soil’s pH level, the amounts of available plant nutrients, and the existence of nutrient imbalances, excesses or deficiencies.

Why Have My Soil Tested?

Soil testing eliminates the guesswork many gardeners face when deciding the kinds and amounts of fertilizers or soil amendments they should purchase and apply. Each soil test report contains recommended amounts of limestone and/or fertilizer needed for optimum plant growth. Knowing how much to apply saves time and money.

It is a smart decision to test your soil every few years. Furthermore, it is particularly important in new garden bed installation or in established plantings that are not performing as well as expected. Regardless of whether you garden organically or use synthetic fertilizers, plants grow best when their nutritional requirements are met. This is achieved not only by the addition of nutrients such as nitrogen, phosphorus and potassium but also by sometimes modifying the soil’s pH through the incorporation of limestone or sulfur.

Soil pH is a measurement of the acidity of the soil. A pH of 7.0 is neutral, below 7.0 is acidic, and above 7.0 is alkaline. Native soils tend to be acidic and often it is necessary to raise the pH by adding limestone. Plant species vary in their soil pH preference. Blueberries and broad-leaved evergreens, such as rhododendrons, may develop iron deficiencies if the soil pH is too high. Lack of calcium from low soil pH may contribute to the physiological condition known as blossom end rot, which affects tomatoes and summer squash. Applying the proper amounts of limestone and fertilizer promotes healthy, productive plants. In addition, it minimizes the potential for water pollution from overapplication of nutrients, especially nitrogen and phosphorus.

What can soil tests determine?
The standard nutrient analysis will provide the soil sample’s pH, the available amounts of phosphorus, potassium, calcium and magnesium, extractable micronutrient levels and a lead scan. Site specific fertilizer recommendations are provided based on the soil test results. Recommendations for modifying the soil pH with limestone or sulfur are made if necessary.

Separate analyses offered by the lab include percent organic matter, particle size analysis (the relative amounts of sand, silt and clay), micronutrients, soilless media and soluble salts. Commercial agronomic or vegetable growers may be interested in our pre-side dress soil nitrate test.

What can soil tests not determine?
The soil fertility test performed at the University of Connecticut cannot detect the presence of contaminants such as pesticides or petroleum products. A listing of state approved environmental laboratories which can perform these analyses is available at the Connecticut Department of Public Health’s website, www.state.ct.us/dph.
Our soil tests also cannot identify problems due to insects, diseases, poor or excessive drainage, environmental stresses such as drought or winter injury, or improper cultural techniques.

When is the best time of year to have my soil tested?
A soil sample can be collected any time the ground is not frozen. The lab performs soil analyses year round. Fall is an optimal time for sampling because added amendments can begin to react with the soil over the winter. When submitting samples in the springtime, try to send them in early enough to give yourself time to prepare your beds before planting. The turnover time is generally 3 to 5 days in the lab but may be longer in April and May due to high volume.

A soil test every 3 to 5 years is adequate for most situations. An exception to this would be sites requiring large nutrient additions or pH adjustments. In this case, it would be advisable to test one year after the recommendations for limestone and/or fertilizer were followed to monitor their effect. Whenever comparisons of results are desired, take samples at the same time of year.

How do I get my soil tested?
Directions for sample collection, fees, and mailing directions are listed in our free soil testing brochure that is available at your local Cooperative Extension office, at the UConn Home and Garden Education Center (toll-free (877) 486-6271), at some Connecticut garden centers, by calling the lab at (860) 486-4274 or on our web site, UConn Soil Nutrient Analysis Laboratory. Those preferring the convenience of our pre-paid soil test collection kit, can contact the lab. Soils in the pre-paid kits receive the standard nutrient analysis. Kits are pre-paid for the soil test only and do not include mailing fees which usually cost less than $2 per sample.

Where can I get answers to my questions?
Specific plant-related questions or problems that are included with soil samples are submitted to the horticulturists at the UConn Home and Garden Education Center along with your soil test results. Questions regarding the results or recommendations can be directed to the lab. Commercial growers should contact their Extension Specialist.

For additional information concerning soil testing contact:
Dawn Pettinelli, Manager, University of Connecticut Soil Nutrient Analysis Lab
6 Sherman Place, U-5102
Storrs, CT 06269
(860)486-4274
dawn.pettinelli@uconn.edu

These locations stock both brochures and prepaid soil test collection kits:
- Hartford County Extension Center (860) 570-9010
- Litchfield County Extension Center (860) 626-6240
- Middlesex County Extension Center (860) 345-4511
- New London County Extension Center (860) 887-1608
- Tolland County Extension Center (860) 875-3331
- Windham County Extension Center (860) 774-9600

These locations have brochures only:
- Fairfield County Extension Center (203) 207-3261
- New Haven County Extension Center (203) 407-3161
- Master Gardeners at the Bartlett Arboretum (203) 322-6971 ext. 15

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