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Soil Testing Laboratory

Department of Soil, Water, and Climate

How to Sample - Lawn & Garden

Soil tests can be no better than the sample. Therefore, proper collection of the soil sample is extremely important. To obtain a good soil sample, follow the directions below.

When

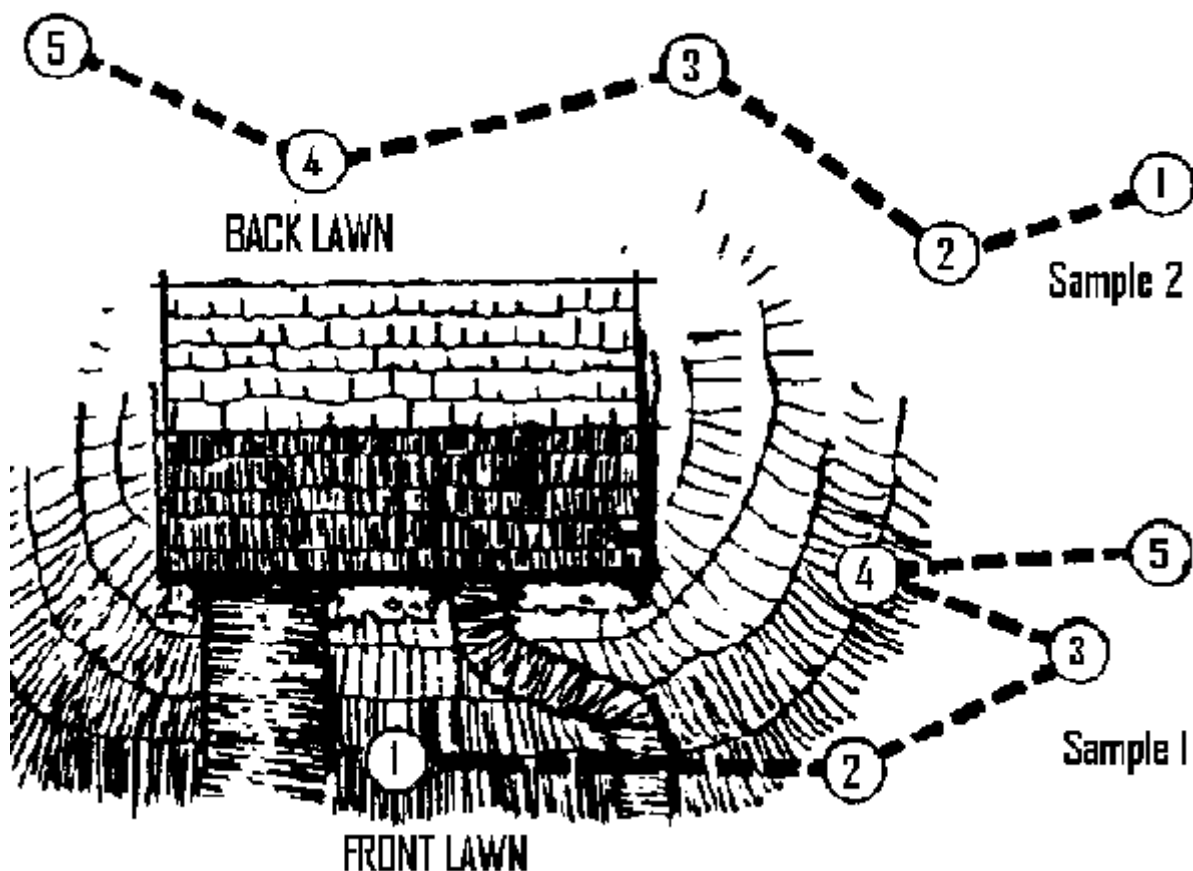
Soil samples may be taken at any time during the year when soil conditions permit. It usually takes the Laboratory three to five days to process your samples.

Where

If the area is fairly level and the soil appears to be uniform, collect a composite (mixed) sample.

If your lawn or garden has large areas which differ in fertility, take one sample from each area. For example, you may want to sample the front lawn and the back lawn separately (see diagram below).

Example of 2 areas to sample if necessary



Do not include soil from the lawn area and a garden in the same composite sample. Sample separately or avoid trouble spots or small areas such as borders, low spots, near trees or buildings, etc.

How

Use a garden trowel, spade, sampling tube, or soil auger. Scrape away or discard any surface mat of grass or litter. Sample the lawn or garden area to the sampling depth indicated below.

- existing grass – sample 0-3"
- new grass – sample 0-6"
- gardens – sample 0-6"
- trees/shrubs – sample 0-12"
- lead test – sample only surface 3/4"

Place the soil sample in a clean bucket or pan. Repeat sampling in five (5) scattered spots within the chosen area. Mix soil well to make a composite sample and send in about a pint of the sample to the Laboratory. Any clean and spill-proof container may be used.

Label the sample container with your name, address, and YOUR sample identification (FOUR digits). Keep a record for yourself of the area represented by the sample.

UNIVERSITY OF MINNESOTA
Soil Testing Laboratory

LAWN, GARDEN AND LANDSCAPE
SOIL ANALYSIS REQUEST SHEET

Report No. _____

Send this information sheet with **ONE (1)** soil sample

MAIL SOIL TEST REPORT TO: _____ **OPTIONAL REFERENCE:** _____

Name _____

Soil Location: County _____

Address _____

City, State, Zip _____

Phone _____

Check for \$ _____ enclosed

<p>Please provide a name for this sample, consisting of no more than 4 numbers and/or letters. Indicate this name on the sample container and record it here.</p> <p>_____</p> <p>The report you receive will use this name to identify your sample.</p>	<p>Fertilizer Recommendations Requested for: (check <u>only</u> one)</p> <table border="0"> <tr> <td data-bbox="388 665 756 844"> <p>Lawn</p> <p><input type="checkbox"/> (101) Before seeding or sodding</p> <p><input type="checkbox"/> (102) Existing lawn</p> </td> <td data-bbox="756 665 1180 844"> <p>Fruit</p> <p><input type="checkbox"/> (112) Tree Fruits</p> <p><input type="checkbox"/> (113) Small Fruits</p> <p><input type="checkbox"/> (114) Blueberries</p> </td> </tr> <tr> <td data-bbox="388 876 756 1023"> <p>Gardens</p> <p><input type="checkbox"/> (110) Vegetable Garden</p> <p><input type="checkbox"/> (111) Flower Garden</p> </td> <td data-bbox="756 876 1180 1023"> <p>Tree and Shrubs</p> <p><input type="checkbox"/> (115) Broadleaf</p> <p><input type="checkbox"/> (116) Evergreen</p> <p><input type="checkbox"/> (117) Azalea & Rhododendron</p> </td> </tr> </table>	<p>Lawn</p> <p><input type="checkbox"/> (101) Before seeding or sodding</p> <p><input type="checkbox"/> (102) Existing lawn</p>	<p>Fruit</p> <p><input type="checkbox"/> (112) Tree Fruits</p> <p><input type="checkbox"/> (113) Small Fruits</p> <p><input type="checkbox"/> (114) Blueberries</p>	<p>Gardens</p> <p><input type="checkbox"/> (110) Vegetable Garden</p> <p><input type="checkbox"/> (111) Flower Garden</p>	<p>Tree and Shrubs</p> <p><input type="checkbox"/> (115) Broadleaf</p> <p><input type="checkbox"/> (116) Evergreen</p> <p><input type="checkbox"/> (117) Azalea & Rhododendron</p>	<p>For Grass Only</p> <p>Is grass watered regularly?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are clippings removed?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Check Tests Requested</p> <p><input type="checkbox"/> Regular Test, \$17.00 - includes total organic matter, phosphorus, potassium, pH - lime requirement, and estimated texture</p> <p><input type="checkbox"/> Soluble salts, \$7 - testing for excessive salts</p> <p><input type="checkbox"/> Lead test, \$16 - (separate sample required) <small>*See back for additional instructions</small></p> <p>*Additional tests, primarily of interest to land care professionals</p> <table border="0"> <tr> <td><input type="checkbox"/> Sulfur \$7</td> <td><input type="checkbox"/> Calcium/Magnesium \$7</td> </tr> <tr> <td><input type="checkbox"/> Nitrate \$8</td> <td><input type="checkbox"/> Iron, Zinc, Copper, and Manganese \$12</td> </tr> <tr> <td><input type="checkbox"/> Boron \$7</td> <td></td> </tr> </table> <p>Be advised - The Soil Testing Laboratory does not provide interpretation for trace element tests.</p>	<input type="checkbox"/> Sulfur \$7	<input type="checkbox"/> Calcium/Magnesium \$7	<input type="checkbox"/> Nitrate \$8	<input type="checkbox"/> Iron, Zinc, Copper, and Manganese \$12	<input type="checkbox"/> Boron \$7	
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Tests provided by the University of Minnesota Soil Testing Laboratory are intended to aid in evaluating the fertility status and chemical condition of your soil. Based on these test results and the type of plants to be grown, you will receive fertilizer recommendations calculated to provide adequate levels of phosphorus and potassium for healthy plant growth, without adversely affecting the environment.

Problems with plants may be caused by factors other than soil fertility, e.g., disease, insects, insufficient light, soil moisture or compaction, or climatic conditions. An evaluation of soil fertility and pH is an important *first step* in diagnosing problems. If soil fertility is not found to be a problem, the other factors affecting plant growth should be evaluated to determine possible causes. Your County Extension Educator or Master Gardener can help if you need more information to diagnose your problem.

Because nitrogen is extremely mobile in soils, nitrogen recommendations are based on plant requirements and soil organic matter levels as determined by the laboratory.

*Trace element tests are generally not recommended for lawn and garden samples. Research has shown that most soils in Minnesota contain adequate levels for plant growth. Trace element tests may be useful to some lawn care professionals dealing with special problems.

HOW TO TAKE A SOIL SAMPLE

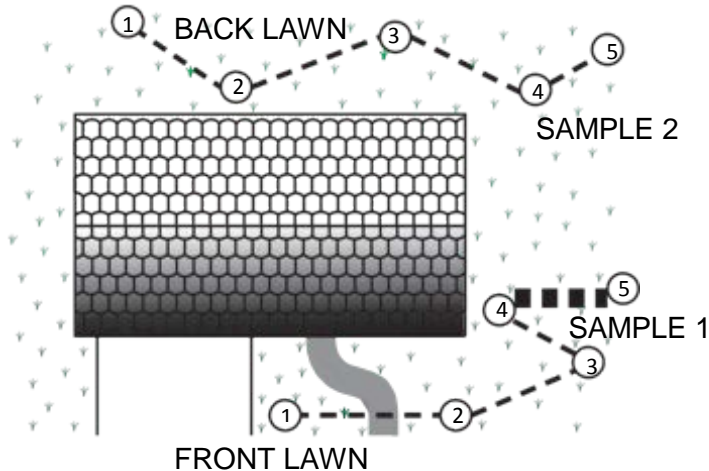
The quality of your results depends largely on the quality of your sample. To obtain a good soil sample, follow the directions below.

WHEN

Soil samples may be collected whenever soil conditions permit. When submitting your samples to the laboratory, check our website (soiltest.cfans.umn.edu/) for current turnaround times and more information.

WHERE

- If the area is fairly level and the soil appears to be uniform, collect one composite (mixed) sample.
- If your lawn or garden has large areas which differ in fertility, take one sample from each area. For example, you may want to sample the front lawn and the back lawn separately (see diagram).



- Area of special concern (under trees, near buildings, trouble spots) should be represented by separate samples.

HOW

Use a garden trowel, spade, sampling tube or soil auger. **Scrape away or discard any surface mat of grass or litter.** Sample the lawn or garden area to the sampling depth indicated below.

- 1) existing grass - sample 0-3"
 - 2) new grass - sample 0-6"
 - 3) gardens - sample 0-6"
 - 4) trees and shrubs - 0-12"
 - 5) lead test - see "Lead Test" section
- Place the soil sample in a clean bucket or pan.

- Repeat sampling in several random locations within the chosen area. Mix soil well to make **ONE** composite sample for the entire area, and send or bring **2-3 CUPS** of the composite sample to the lab. Use a clean, leak-proof container (e.g. disposable food storage bag or tub) and place the container inside a sturdy mailer or shipping package. Please keep your paperwork outside of the soil container, but **DO** place the form(s) and payment inside the sealed mailer or shipping package.
- Label the sample container with your name, address and sample identification (**max = 4 characters**). Fill out the other side of this form completely, and *keep a record of your sample identification*.
- **Soluble salts test:** This test should be requested if:
 - 1) "black dirt" has been hauled in and poor growth is observed,
 - 2) there is possible damage from salt used on streets and sidewalks, **or excess application of fertilizer,**
 - 3) the grass looks burned even when adequate water is present,
 - 4) the soil is poorly drained and located in the south central or western part of the state.
- **Lead Test:** Select only if lead contamination is suspected. Sample only the surface 3/4" for play areas, and surface to 3-4" for gardens. **Separate sample required.**

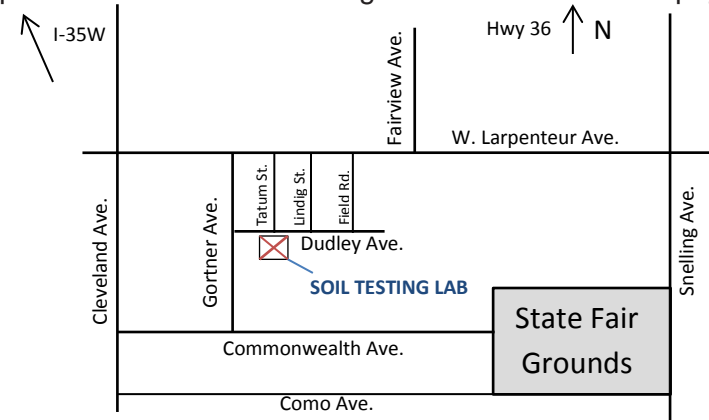
HOW TO SUBMIT SAMPLES

Soil samples may be delivered in person to Room 135 Crops Research Building, University of Minnesota (see map below), or mail to:

Soil Testing and Research Analytical Laboratory
University of Minnesota
135 Crops Research Building
1902 Dudley Avenue
St. Paul, MN 55108

Hours: Mon-Fri 8:00am - 4:30pm
Website: <http://soiltest.cfans.umn.edu/>
Phone: (612) 625-3101

Enclose form and full payment for each sample to be tested. You may send one check to cover the cost of multiple samples. Make checks payable to the University of Minnesota. **Do not send cash.** The University of Minnesota will not be responsible for cash sent through the mail. The sender pays postage.



SOIL TEST REPORT
Lawn and Garden

Client Copy
Department of Soil, Water, and Climate
Minnesota Extension Service
Agricultural Experiment Station

How to read a soil test

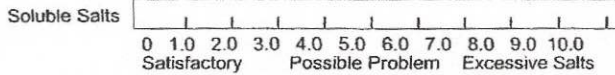
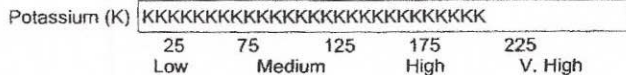
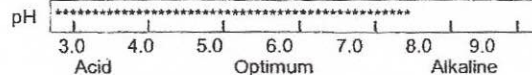
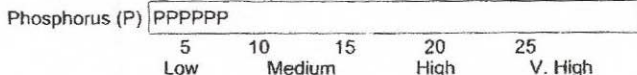
Page _____
Report No. _____
Laboratory No. _____
Date Received _____
Date Reported _____

Sample/Field Number: DM02

SOIL TEST RESULTS

Estimated Soil Texture	Organic Matter %	Soluble Salts mmhos/cm	pH	Buffer Index	Nitrate NO3-N ppm	Olsen Phosphorus ppm P	Bray 1 Phosphorus ppm P	Potassium ppm K	Sulfur SO4-S ppm	Zinc ppm	Iron ppm	Manganese ppm	Copper ppm	Boron ppm	Calcium ppm	Magnesium ppm	Lead ppm
Medium	4.6		7.6			5	6	220									

INTERPRETATION OF SOIL TEST RESULTS



RECOMMENDATIONS FOR: Schools/Industrial Grounds

LIME RECOMMENDATION: 0 LBS/1,000 SQ.FT.

Grass not watered Clippings not removed

TOTAL AMOUNT OF EACH NUTRIENT TO APPLY PER YEAR:*

NITROGEN
0.5 LBS/1,000 SQ.FT.
25 LBS/ACRE

PHOSPHATE
1 LBS/1,000 SQ.FT.
45 LBS/ACRE

POTASH
0 LBS/1,000 SQ.FT.
0 LBS/ACRE

THE APPROXIMATE RATIO OR PROPORTION OF THESE NUTRIENTS IS: 10-20-0



Use a fertilizer with the percentage of nutrients closest to the above ratio. Apply according to the instructions on the fertilizer bag or container, or determine the amount required from the instructions given on the back side of this report. Since meeting the exact amount required for each nutrient will not be possible in most cases, it is more important to apply the amount of nitrogen required and compromise some for phosphate and potash.

-Apply the total amount recommended above at one time in early September.

*CAUTION! Do not apply more than 1 lb. nitrogen per 1000 sq. ft. in one application to avoid burning the grass, unless a slow release form or organic fertilizer is used. It is recommended that up to 50 percent of the nitrogen be of the slow release form.

Grass clippings left on the lawn is a sound practice. They recycle nutrients and conserve moisture. The above recommendations reflect this contribution.

County: NICOLLET. For additional information, contact the YARD & GARDEN LINE: Phone: 612-624-4771 Website: www.extension.umn.edu/yardandgarden