

TESTS FOR SOIL FERTILITY AND PLANT NUTRIENT MANAGEMENT

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Standard field soil test

- uses a weak acid extract, lab procedures differ – stick with one lab over time.
- macro-nutrient levels, pH, organic matter (loss on ignition), trace elements.
- \$12 thru UVM: http://pss.uvm.edu/ag_testing/ heavy metals (Cd, Cr, Ni, Pb) add \$10.

Soil Health Assessment

- chemical (nutrients), physical, and biological measurements
- farmer performs on-site compaction tests; takes ~2 months to get results due to root bioassay
- \$60 in 2010 <http://soilhealth.cals.cornell.edu/extension/test.htm>

Greenhouse Media or Potting Soil or Saturated Media Test

- water extract = what's there now (unlike field test); also tests nitrate-N, ammonium-N, salts (conductivity) - important info for seedling and greenhouse crop performance.
- UConn \$10, UMass \$12, UMaine \$15, A&L \$27

Pre-Sidredress Nitrate Test (PSNT) or June Nitrate Test

- measures available nitrate in early summer used to 'predict' season long availability
- sweet corn, pumpkins, other long-season crops are suitable
- >25 ppm nitrate-N is adequate, but weather conditions (lots of rain) may affect interpretation
- sample handling can affect results – must be dried or sent in aerated bag ASAP
- \$8 from UVM lab

pH Test Kits

- \$15 + \$5 shipping from Cornell <http://cna1.cals.cornell.edu/forms/phkit.aspx>
- each kits does a hundred or more tests
- standard (pH 5.0-7.2) kit, high range, or low range (for blueberries)

Tissue Test or Leaf Analysis or Foliar Analysis

- tells you what the plant actually took up from the soil
- typically sample newly mature leaves that have fully expanded
- best method for assessing fertility status of perennial crops
- \$22 UMass lab or \$25 from UMaine lab
- optimal ranges listed at: <http://www.uvm.edu/vtveganberry/factsheets/tissuetest.html>

Compost Test

- UMaine \$45: bulk density, pH, conductivity, Total Solids, Total Volatile Solids, NO₃-N, NH₄-N, total C, N, P, K, Mg, Ca, B, Cu, Fe, Mn, Zn.
- UMass \$35: pH, Extractable Nutrients (P, K, Ca, Mg, Fe, Mn, Zn, Cu, B, S), Extractable Heavy Metals (Pb, Cd, Ni, Cr), and Extractable Aluminum, Equivalent Base Percentages, Organic Matter, Total Nitrogen, C/N ratio, Nitrate-N, Ammonium-N, Electrical Conductivity (Soluble Salts), Percent Moisture, Bulk Density.

Other soil test labs that provide these and/or similar services:

- UMass <http://www.umass.edu/plsoils/soiltest/> (413) 545-2311
- UMaine <http://anlab.umesci.maine.edu/> (207) 581-3591
- UConn: <http://www.soiltest.uconn.edu/> 860-486-4274
- Cornell: <http://cna1.cals.cornell.edu/> 607-255-4540
- Penn State: <http://www.aasl.psu.edu/> 814-863-0841
- A&L: <http://al-labs-eastern.com/> (804) 743-9401

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