



USDA, Natural Resources Conservation Service

## SOIL QUALITY AND SITE ASSESSMENT CARD

### *for Connecticut Community Gardeners*

#### *What Are Soil Quality and Site Assessment Cards?*

- ◆ They are field tools developed collaboratively by the local community, the Natural Resources Conservation Service, and conservation partners.
- ◆ They are used to assess the current status of soil quality, and over time will determine changes in soil quality affected by management.
- ◆ These cards can be used throughout Connecticut.
- ◆ They display locally selected soil quality and site assessment indicators and associated descriptive terms.
- ◆ They list soil quality and site assessment indicators that can be assessed without the aid of technical or laboratory equipment.
- ◆ The only tools required are a shovel and a coat hanger (or wire flag).
- ◆ Examples of indicators include compacted soil layers, abundance of earthworms, and amount of sun exposure.

#### *Why Develop Soil Quality and Site Assessment Cards for Connecticut?*

- ◆ They are tools for people to assess soil quality on a site themselves.
- ◆ The assessment is a tool to communicate with soil scientists and other environmental professionals about issues and problems relating to soil quality.
- ◆ The cards focus on indicators identified by community people.

These cards are not, however, intended to be used by farmers or people involved in production agriculture. Although they were designed for community garden use, they can also be used to rate sites and soil for other potential land uses. Keep in mind the cards are for people to do general evaluation of property, but are not a substitute for detailed, on-site investigations by professionals. Professional investigations may be necessary to satisfy federal, state, and local regulations.

After completing the assessment, decide how your ratings will affect your plans for the site. For indicators you rated as **Poor**, look at the **Management Options** section for that indicator. Design your site plans with these options in mind. Should you have questions about the process, contact:

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# Management Options

## For Site Indicators Rated Poor:

### Accessibility

1. Consider creating wide, easy paths to the site.
2. If the users do not have to drive to the site, parking may not be an issue.
3. Consider the safety and the potential for vandalism at the site.
4. Create winding access paths to the site across the slopes to decrease erosion potential on the paths.

### Topography

5. As the slope increases, the direction of the slope becomes more important. If you have a steep north-facing slope, consider growing plants that need less sun and have a shorter growing season. **Slope aspect** is the direction toward which the surface of the soil faces. Slope aspect may affect soil temperature, evapotranspiration, winds received, and snow accumulation.
6. Consider designs that work around or incorporate the rock.
- 7., 8. Consider using rainfall and/or collecting rainfall for irrigation. Grow plants that don't need much water.
9. Reduce surface runoff by keeping soil surface covered with plants and/or mulch. Avoid planting in runoff collection areas.
10. If wet spots persist, avoid these areas or consider artificially draining the site or adding fill (if possible and permitted).

### Sun Exposure

11. Most vegetables need a minimum of 4 hours of sun. Consider cutting down trees or limbs that block the sun or growing shade tolerant plants.

### Current Use

12. Consider removing unwanted pavement or incorporate existing paved areas into site design.
13. Note the kind of debris. If the debris is in the soil, get a soil test done to see if the site is contaminated.
14. Consider keeping gardens out of established shortcut paths. Incorporate existing paths into the site design.
15. If this is a problem, consider creating dog walk areas or fence in gardens.
16. Can the current use of the site be accommodated or eliminated? Incorporate current land uses into the site if possible.

### Existing Vegetation

17. If excessive, cut brush and consider cutting trees that obscure the sun or use shade tolerant plants.

### History of Site

18. Depends on date of buildings, date of demolition, materials used, type of industry, etc. Complete soil test to see if site is contaminated.

## For Soil Indicators Rated Poor:

19. If you need to bring soil to the site, you can rate the purchased soil using indicators #22, 27, 30-36.

### Surface of Soil

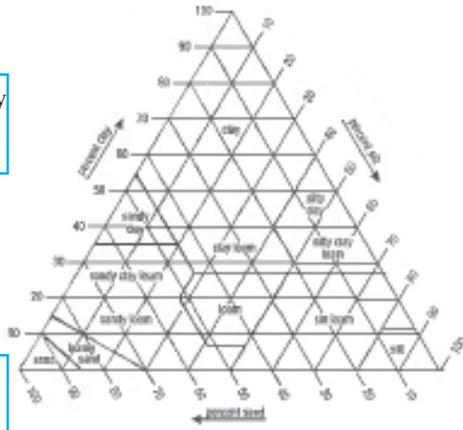
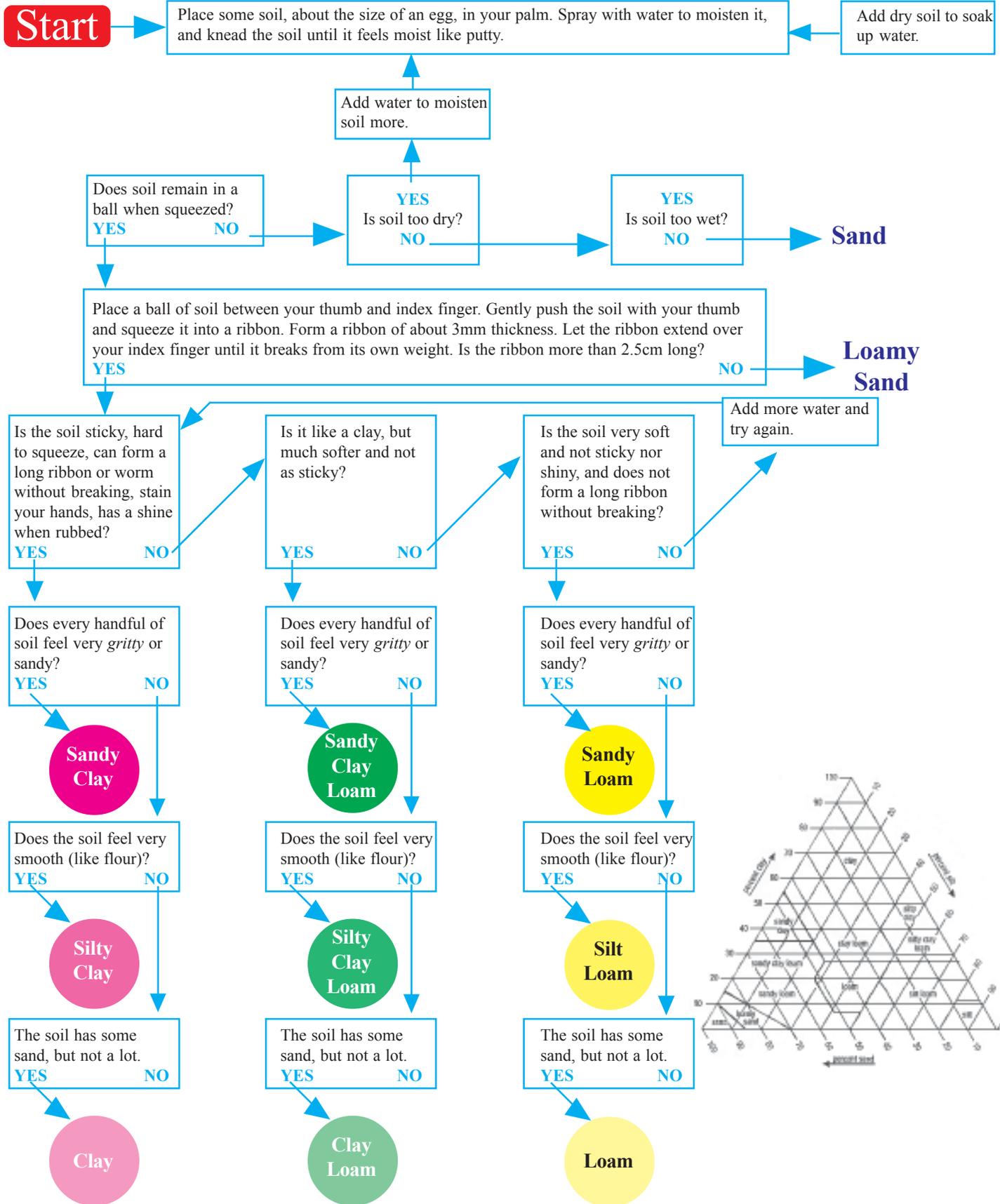
20. Add sandy soil to the surface and plow it into the topsoil.
21. Have a soil nutrient analysis test completed. Add recommended nutrients.

### Soil Examinations

22. Seek professional environmental guidance for site if soil smells strange or soil test indicates contamination.
- 23., 24. What is stopping the digging or coat hanger? Is it hard bedrock, debris, water, or just hard soil? **Compaction** occurs when soil particles are pressed together, reducing the pore space between them. This often occurs due to heavy traffic, especially when the soil is wet. If compaction is a problem, consider constructing raised beds, or add compost or organic matter to soil and rototill or plow. If bedrock is a problem, see **Management Options #6 and #25**. If wetness is a problem, see **Management Option #23**. If debris is present, see **Management Option #35**.
25. Grow short rooted plants or consider constructing raised beds.
26. Add compost or organic matter to the topsoil. **Organic matter** is that fraction of the soil composed of everything that once lived. It includes plant and animal remains in various stages of decomposition, cells and tissues of soil organisms, and substances from plant roots and soil microbes.
27. At least four inches of good quality topsoil, with compost or organic matter. See **Purchasing Topsoil handout**.
28. **Available water capacity** is the amount of water that a soil can store that is available for use by plants. Increase the available water capacity by adding compost or organic matter and rototill. If the soil is dry, irrigate the site. If the soil is too wet, consider properly draining the area of the excess water (if practical and permitted).
29. Observe the movement of the water in the hole after rainfall or after adding a bucket of water to the hole. If wetness is a problem, see **Management Option #28**, or grow plants that can grow in wet conditions.
30. If the soil is too sandy, add organic matter and loamy material, and if the soil is too clayey, add sandy soil. Plow or rototill the soil surface to incorporate the added soil.
31. Plow or rototill soil after adding organic matter or compost. Or consider raised beds.
32. The number and type of roots may depend on what plants are growing on the site. If the roots are horizontal or deformed, something in the soil is stopping the plants from rooting properly. Check the wetness and firmness of the soil. To improve the chance for roots to grow, add compost or organic matter and rototill the soil.
33. Increase the number of worms and bugs by adding compost or organic matter to the soil.
34. If there are a lot of stones or rocks, use them as part of the landscaping (such as a stone wall).
35. Complete a soil test to see if the site is contaminated. If soil test indicates contamination is not a problem, remove the debris by hand or screen it out.
36. Remove large stumps, if possible. Consider building raised beds or using another location.

# Guide to Texture by Feel

Begin at the place marked **Start** and follow the chart by answering the questions until you determine your soil's texture.





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## UNIVERSITY OF CONNECTICUT DEPARTMENT OF PLANT SCIENCE

Soil Nutrient Analysis Laboratory, 6 Sherman Place, Box U-5102, Storrs, CT 06269-5102  
(860) 486-4274 (phone) \* (860) 486-4562 (fax)

### Connecticut Environmental Laboratories That Perform Lead Testing on Soil

Northeast Laboratories, Inc. - Berlin  
(860) 828-9787  
\$35/sample

Spectrum Analytical - Bloomfield  
(860) 242-6294  
\$15/sample

Premier Laboratory, LLC - Brooklyn  
(860) 774-6814 or (860) 334-0103  
\$30/one sample; \$22/two or more samples\*

Phoenix Environmental Laboratories, Inc. - Manchester  
(860) 645-1102  
\$21/sample

Connecticut Testing Laboratories - Meriden  
(203) 634-3731  
\$25/sample

Analytical Consulting Technology, Inc. - Middlebury  
(203) 598-0040  
\$10.50/sample

Environmental Science Corporation - Middletown  
(860) 632-0600  
\$20/sample

Baron Consulting Company - Milford  
(203) 874-5678  
\$20/sample

EnviroAnalytical, Inc. - Monroe  
(203) 459-1800  
\$20/sample

Hydro-Technologies - New Milford  
(860) 355-8773  
\$20/sample

Brooks Laboratories, Inc. - Norwalk  
(203) 853-9792 or (800) 843-1631  
\$25/sample

Eco-Science Laboratory - Norwich  
(860) 889-8104  
\$25/sample

Severn Trent Laboratories - Shelton  
(203) 929-8140  
\$20/sample

Environmental Analysis Corp. - Stamford  
(203) 324-3811  
\$25/sample

Complete Environmental Testing - Stratford  
(203) 377-9984  
\$12/sample

EAS Laboratories - Watertown  
(860) 274-5461  
\$12/sample

York Analytical Laboratories, Inc. - Stamford  
(203) 325-1371  
\$10/sample

*\*many labs have discount prices on multiple samples*