Assessing Your Soil Texture Activity

Adapted from Cornell Soil Health Assessment Training Manual, 2nd Edition (2009) and S. Gabriel, sfg53@cornell.edu (2012).

This exercise asks you to go outside and meet the soil in your potential garden site. These are good tests to learn more about the unique characteristics of the soil. Do one, two or all three! Repeat these tests if you have more than one garden or landscape space that you want to check. Don't assume that all the soil in the garden or landscape is exactly the same. Be sure to include youth in the process!

Things you will need for this activity:

- Several days to complete it
- Soil samples, about 1 cup for every sample you want to test
- Spoon or small shovel
- Jar with tight fitting lid (quart size is best)
- Kitchen timer or stop watch
- Marker or tape to make marks on your jar

1. Ribbon Test

- Gather 1/2 a cup of soil from where you would like to test. Discard large rocks. If soil is VERY DRY, you may need to add a little water. If soil is VERY WET you will need to let it dry out. *Ideal moisture feels similar to a wrung out sponge.*
- Squeeze soil in your bare hand (so you can feel it with your skin!); if sample falls apart = Sand
- Try to make a ball with the sample. If you can make a ball = Loamy Sand
- If you have something that resembles a ball of soil, squeeze it slowly through your thumb and pointer fingers to try to form a ribbon as long as possible.

- Determine your soil type from the chart below.

	Feels mostly gritty	Feels mostly smooth	Smooth and Gritty
Forms Ribbon shorter than 1”	Sandy Loam	Silty Loam	Loam
Forms Ribbon 1”-2”	Sandy Clay Loam	Silty Clay Loam	Silty Clay
Forms Ribbon longer than 2”	Sandy Clay	Silty Clay	Clay

2. Shaker Jar Test

- Pick several spots in the garden and dig with a trowel about 8" down below the soil surface.
- Fill a quart jar 1/2 full of soil, fill the rest with water & shake for 3 min.
- Let settle for 24 – 48 hours (heavy clay soils will take longer).
- Sand will settle first on the bottom, followed by silt, then clay, then organic matter (floating on top).
- Going Further: Each layer is a percentage of the entire layer of dropped soil particles. Measure each of the 3 layers and divide each layer height by the total height. Then multiply by 100 to find the percentage of sand, silt and clay. A soil that is abundant in clay will, of course, have the highest percentage of a clay component...and so on. Note: Any dark colored material floating in suspension in the water is organic. You will have to estimate how much of this you have or scoop it off to measure it in a dry jar of the same size and shape.

3. Percolation Tests

Outside Test:

- Dig a pit approximately 1 foot deep. Fill with water and allow to drain completely, then refill and measure depth of water. After 15 minutes, note depth and calculate rate as inches/hour.

Desktop Test

- Take several 2-liter soda bottles (or gallon jug or equivalent) with labels and tops removed. Poke several pencil sized holes around the bottom. Fill halfway with soil from test spots taken for above jar test. Fill once and let drain. Then fill again and time how long it takes to drain, while making observations as it flows through. Calculate inches/hour.

- Poor = < 4"/hr
- Moderate = 4" – 8" /hr
- Well = > 8"/hr

Your Findings

- What color is your soil sample - be specific? Does it feel gritty or smooth?
- Did each of the tests above indicate the same soil type?
- What soil type did you determine you have? Clay, Sandy, or something in between?
- How will these findings affect your garden plan?