Soil sampling for texture and diversity

What is the procedure for collection of soil samples?

Materials

small shovel or spade
1-cup measuring cup or plastic cup
sealable bag
marking pen
dissecting scope or magnifying lens
depression slides for microscope
microscope

Procedure

Single sample method for texture

1. Use the small shovel or spade to dig up a 2 cup sample of soil at least 4-6 inches below the surface.
2. Place soil in a plastic bag and mark with location and date.
3. A soil texture by feel test can be performed in the field by following the flow chart as long as a source of water is available.
4. In order to test texture by volume, the sample must be dried and the large chunks crushed with a mortar and pestle or rolled with a rolling pin. Follow the procedure on the soil texture lesson.

Sampling method for diversity

1. Use the small shovel or spade to dig up a 2 cup sample of soil and organic matter from the surface and an inch or two below the surface. Best results occur when sliding the spade or shovel across the surface and just below, rather than digging straight down into the dirt.
2. Place the sample in a plastic bag and mark with location and date.
3. Upon returning to the classroom, open the bag and place the sample in a tub or bucket covered with a towel or flat piece of cardboard until ready to observe. Macroinvertebrates such as centipedes millipedes, pill bugs, earthworms may be easy to observe and may crawl out.
4. Smaller organisms: mesofauna and microbes will not be observable to the naked eye. These can be collected using a Berlese funnel apparatus. (Watch this video to see how to make one. https://www.youtube.com/watch?v=KnoKvpqeMmA&t=23s) Put your sample under a dissecting scope or on a depression slide for a microscope to observe the organisms you find.
5. In order to find microbes such as bacteria, follow the protocol for making a soil dilution and Gram staining found later in the unit.
6. Biodiversity is important in soil to determine its health. The more different kinds of organisms found, the healthier the soil. Count up the different organisms you find. Compare with other soil samples collected from different areas.