

Soil Health Assessment Center

Sampling Soil to Evaluate Soil Health

How do I sample my soil for soil health analysis? This is best answered by another question: what are you hoping to learn or compare? Information and considerations discussed below can help you as you decide how you want to sample your soil

Look at a map or aerial photo and soil map of your farm or management area.

Would you like to compare certain areas or fields? If you have different management practices on fields with similar soils, you may want to compare soil health indices on the two management practices. Taking a sample from a similar soil that has been in grass or otherwise undisturbed long-term could also be a helpful comparison.

Are you planning to change the management on some fields or areas? Taking samples to document the baseline will help to gauge what soil changes occur and the rate at which they occur.

If you have more than one soil mapped in your field or area of interest, sample each soil map unit. If you know of areas of different soils, mapped or unmapped, consider sampling these areas separately.

Consider sampling in different landscape positions. Consider stable sites such as summits, erosional sites such as side slopes and depositional sites such as foot slopes. Ridges and valleys between them should also be considered. This information can be valuable for estimating the amount of erosion that has taken place and may be valua-

ble in deciding whether or not to use different management on different parts of the landscape.

How deep should I sample? This, again, depends upon what you're trying to measure. The first changes will occur close to the soil surface. On the other hand, you may want to take deeper soil samples as a baseline or to see if areas of compaction exist as you go down through the soil profile.

Samples should be taken as or within soil horizons. A soil horizon is a layer of soil, generally parallel to the soil surface with characteristics different from soil layers above or below it.

A shovel or a large coring device is the best tool for taking can be used for taking most soil samples. A small diameter soil probe may affect samples taken for wet aggregate stability especially if the soil is high in moisture.

Special sampling techniques need to be used for evaluating bulk density, or compaction and for phospholipid fatty acid analysis of soil biology.

Samples should be packaged within boxes or in bags within boxes to provide protection from being mashed. (Mashing wet soils would affect aggregate stability measurements.)

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