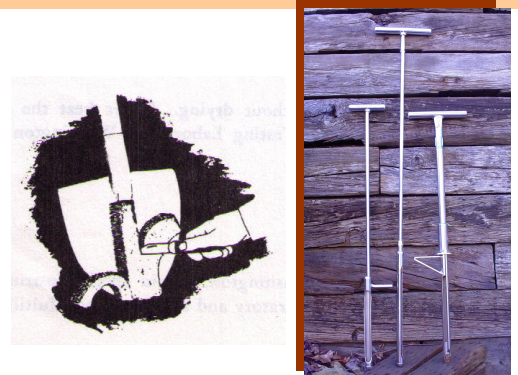


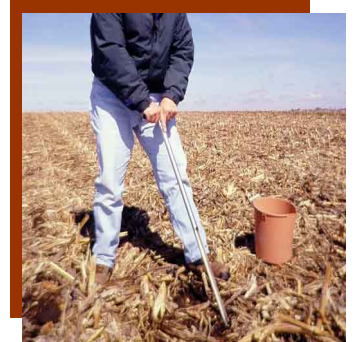
# Routine Soil Sampling Guidelines and Techniques

- Use clean sampling tools. A push probe is ideal however a regular shovel can be used as shown in the diagram.
- Sample each representative area to at least 12 inches. Deeper depths are necessary for deep-rooting crops.



- Determine how many individual cores to take. A good rule of thumb is to take a minimum of 10 cores in a field and then add 1 more core for every 5 acres (e.g. 100-acre field 10 cores + 20 cores (100/5) = 30 cores). For lawns and garden areas take at least 5 cores. In no-till operations where fertilizer is banded the number of cores in a composite should be at least double.

- Mix multiple cores thoroughly in a sample bucket.
- Placed about 2 cups of the mixed sample in a sample bag. Be sure to label the bag with all pertinent information.



Fill out a soil sample request form available at:

[www.soiltestlab.com/forms.html](http://www.soiltestlab.com/forms.html)

Indicate which test group you would like.

- Keep bags cool and out of the sun and take to laboratory for analysis.



# Soil Sampling Considerations for Soils receiving Organic Amendments

- BACKGROUND

The process of sampling soil mixes and warms the soil resulting in increased microbial activity. The increase in activity is not so great in mineral soils with modest organic matter contents. However soils amended with organic products or naturally high in organic matter (over about 10%) usually experience a burst in microbial activity accelerated by readily-available carbon sources. Soils amended with organic materials commonly have accumulated a significant amount of ammonium-N. The heightened microbial activity with the elevated ammonium, frequently results in rapid nitrification of ammonium into nitrate. Mineralization of ammonium from organic compounds is also accelerated under these conditions. If the samples are stored in air-tight containers and are kept warm and moist for more than a day, denitrification can cause a serious loss of nitrate-N.

The conversion of ammonium to nitrate after sampling and before laboratory analysis is a change of form, but not a net loss or gain. The sum of nitrate and ammonium does not change. Consequently, it is essential to consider both forms in organic-amended soils. The mineralization rate usually does not increase as rapidly and the nitrification process. Keeping the sample aerated can minimize denitrification losses.

There are two feasible ways to halt microbial activity in a soil sample. 1) dry the sample or 2) freeze the sample. The compromise alternative that is commonly used is to chill the sample to slow the microbial processes and deliver the sample to the laboratory within 2-3 days. If the hold time is expected to be over 3 days, the sample should be frozen or dried within a few hours of sampling.



## **SAMPLING & HANDLING STANDARD OPERATING PROCEDURES FOR ORGANICALLY-AMMENDED SOILS**

1. Use clean sampling tools and a clean plastic bucket for each depth increment; have an insulated cooler with adequate blue ice to maintain cooling for 1 day.
2. Have a brush or cloth for cleaning equipment between fields/management units
3. Collect samples from each field/management unit and depth increment into the bucket(s). The number of samples to collect to reasonably represent the population mean can be calculated by starting with 10 subsamples and adding 1 more subsample for each 5 acres (e.g. 100-acre field = 10 cores + 20 cores (100/5) = 30 cores).
4. Thoroughly mix the soil in each bucket, breaking up any clods.
5. Place approximately 2 cups of the mixed soil in a pre-labeled soil sample bag or pint-sized freezer Ziploc bag.
6. Complete a Soil Test Request Form or Chain of Command (CoC) for each field/management unit; include your contact information on each form.
7. Place soil samples in cooler; keep cooler closed and in shade as much as possible
8. At end of each day either ship/deliver chilled samples to the laboratory or freeze the samples for accumulation and later shipment/delivery to the laboratory. If freezing is not available, extra coolers and blue ice or refrigeration can be used for 2-3 days after sample collection. Be sure to include all CoCs or Test Request Forms with each shipment.