

# Soil and Manure Testing

## What

**Frequent testing of soil and manure is one of the first steps in the Nutrient Management Planning process.** Testing facilitates accurate determination of nutrients in the soil and manure that help track nutrient levels on the farm, to identify potential problem areas and where additional nutrients may be needed.

## Why

**Soil testing can level out the variability in soils and determine if nutrients are needed and where/how they should be applied.** By beginning with soil and manure tests, a farm saves time and money on the unnecessary application of nutrients. Testing allows for the targeting of nutrients where they are needed and will be most beneficial, maximizing the inputs and investment. This targeted approach to nutrient management has the added benefit of helping to reduce excess nutrient losses to nearby waterways.

Soil tests measure the soil's nutrient composition which is available for plants. The nutrient composition helps determine the best application rates of lime and fertilizer to meet crop needs. This is important for cost effectiveness, to provide optimum yield and quality, and to safeguard water quality. Generally, nutrients should be in the high or optimum range for good yield and quality. If a nutrient is in the Very High (Above Optimum or Excessive) range, additional amounts in most cases should not be added. If nutrients are below the optimal range, some additions may be necessary. However there may be additional factors impacting yield that should be considered prior to application.

## How

**UVM Extension offices and/or Conservation Districts offer soil test kits and services to assist farmers**

**with testing.** There are a variety of tests that can be done and each will give the farmer a wealth of information.

**Soil Tests** identify low and high nutrient soils that allow for increases and decreases in nutrients applied to specific fields, either fertilizer or manure, which can help protect the environment and save money. Modified Morgan extract for Phosphorus results and Aluminum results (UVM or request from your soil lab) allow use of Phosphorus Index developed by UVM that may allow for use of manure on high Phosphorus soils.

**PSNT or Pre-side-dress Nitrogen Soil Test** done when corn is 8-12 inches identifies whether additional nitrogen is needed. Use of this test can help you fine-tune your nitrogen applications and allow farm to apply the correct amount of nitrogen at the most beneficial time.

**Manure Tests** allow you to determine the actual nutrient value of manure, which will further help when applying nutrients from organic fertilizer. Proper sampling and creation of a 'library' over several years will help the farm understand its average manure composition (assuming there have been no major changes in field practices or inputs.)

## Costs

Soil or manure tests can range from \$10-\$35 per sample depending on the type of test performed.



## Special Note

On agricultural land where annual application of phosphorus exceeds its removal by crops, phosphorus will accumulate in soils. A field testing high in phosphorus can be a source of pollution to nearby waterways. When this is the case, the farmer should have the Phosphorus Index (P Index) calculated for the field. The P Index is a tool that can help identify farm fields that are a potential source of phosphorus (P) pollution of surface waters. A large number of factors determine phosphorus loss from a field including a soil test value for phosphorus; source, method, rate, distance to surface water and timing of P application; susceptibility of a given soil to erosion; and management practices. The P index quantitatively determines the relative risk of P movement from a given field by considering most of the factors that govern P losses. Contact a UVM Extension Professional for more info on P Index.

## Associated and Complimentary Practices

- On-Farm Composting
- Nutrient Management Plans

## Benefits

