



Importance of Soil Testing



Growing crops without regular soil testing is like banking without monthly statements. Without these regular reports, customers run the risk of overdrawing their accounts. Similarly, without periodic soil test reports, soil nutrient accounts may drop below adequate levels, leaving crops with insufficient nutrition.

Soil testing is one of the most fundamental practices in profitable crop production. Combined with a good record-keeping system for each field (including information on prior soil tests, fertilizer and manure applications, and crop yields), this practice helps farmers identify soil nutrient levels and trends that may impact a crop, before deficiencies become problematic. Left unchecked, soil nutrient levels can take years to restore to optimum.

In addition to the obvious financial return soil testing can generate by identifying yield-robbing nutrient deficiencies, the environment stands to benefit from improved management of soil resources and fertilizer materials.

What exactly is a soil test?

A soil test is the analysis of a soil sample to determine nutrient content, composition and other characteristics. Tests are usually performed to measure fertility and indicate deficiencies that need to be remedied.

The quality of the original soil sample is critical in determining the practical value of test results. The greatest potential for error in the process is in the collection of samples in the field.

For a representative sample, labs typically recommend 10-20 samples for every 40 acres of the field. Sampling from the correct depth also is important. Generally, a sample should be taken from tillage depth, the layer of the soil from the surface to about seven inches deep. Sampling tools must be properly cleaned prior to sampling, and between samples to avoid cross-contamination.

Fall is an ideal time for soil sampling and testing because producers can get results back in time to formulate the fertilizer plan for the following growing season. Follow-up testing in the spring, while optional, is a smart way to check how nutrient levels may have been impacted by freezing soils and snow melt, and whether additional inputs are needed.

If a good sample is collected, and a reputable lab is used, regular soil testing will provide a reliable estimate of the nutrient status of the soil.

Good for the bottom line

Soil testing helps producers make agronomically and economically sound management decisions about their soil fertility program. Total fertilizer costs can sometimes be reduced through testing, but even more importantly, the dollars spent on fertilizer are invested only in the nutrients most needed by the crop.

A fertility management program based on soil testing offers many benefits:

- Improved yields and profitability by providing essential crop nutrients
- Increased uniformity of nutrient availability across a field, so that optimum response to other management inputs can be achieved
- More uniform crop growth, helping individual plants compete with weeds
- More uniform plant maturity within a field, simplifying harvest and improving market quality
- Potential cost-savings and more precise allocation of fertilizer dollars to the nutrients that provide greatest potential for increased profits. Intensive sampling and variable-rate technology allow precise fertilizer applications.

Good for the environment

Applications based on soil tests and realistic crop yield goals help ensure that proper rates are recommended and applied. More efficient use of plant nutrients by growing crops means less potential losses from leaching or surface runoff.

It is important to note that withholding needed crop nutrients may be damaging to the environment over time. Poorly nourished crops leave less residue to hold soil in place. Providing optimum levels of all nutrients helps increase yields and may reduce the need for farming more marginal land.

Summary

Regular soil testing will help determine if current management is robbing future productivity and profits. Combined with sound record-keeping, soil testing remains the best guide for monitoring soil nutrient levels and determining nutrient needs for growing crops. This practice is a vital component of sustainable farming programs that are profitable, efficient and environmentally responsible.

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The Mosaic Company, 3033 Campus Drive, Plymouth, Mn. 55441

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