K·STATE Research and Extension | Meadowlark District

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Soil Testing: Sampling for the Sake of It – or to Gain Valuable Information

A good fertility program has a lot to do with a knowledge of a plant's requirements for growth balanced with what the soil can provide. That's where a good soil test can be invaluable.

What is a good test and how do you get it?

Start by asking why you are sampling. If evaluating a poor performing area, the sampling protocol will be different than when you are determining an 'average' fertilizer application rate. If trying to fertilize zones/grids on a precision basis, the sampling procedure will be different than if looking for a whole farm/field/garden nutrient level. If you participate in a cost share program that requires soil sampling, be sure to know what the program requires.

Collect an appropriate number of cores. A single core is not acceptable. The variability is too high. Base soil test recommendations on a minimum of 12-15. More is better.

Keep sampling depth consistent. Organic matter, pH, and other nutrient levels can vary significantly with depth. For the more routine nutrients (pH, organic matter, phosphorous, potassium, and zinc), sample to a six-inch depth. Sampling from varying depths can skew results and not accurately show what the soil is providing for nutrients in the root zone. When sampling for mobile nutrients (nitrogen, sulfur, or chloride), a two-foot sample depth is more appropriate.

Avoid 'patterns' when sampling. Zig zag back and forth rather than following planting, tillage or fertilizer application equipment. Non-uniform fertilizer applications can and do occur. Sampling in a more random pattern helps offset potential uniformity issues. If grid sampling, collect accurate GPS coordinates that will allow you to return to the same spot when sampling next time – then sample in a five to ten-foot radius around the center point for best results.

If you are evaluating a poor growth spot or uniformity issue, sample normal and abnormal areas separately. This will help determine if a nutrient is the issue or something else.

Watch for trends over multiple sampling cycles to get an even better idea as to how your nutrient management program is performing. For best results, sample at the same time of year (fall is an excellent time…) and following the same crop each time.

A soil sample is a relatively inexpensive way to get some really good information about what the soil can provide for the growing crop or turf stand or even a garden. You can make that good information even better if you follow some of these guidelines.

For more information on soil testing – for crop, forage, garden, or landscape – contact any of our Meadowlark Extension District Offices or e-mail me directly at dhallaue@ksu.edu . Soil probes are available for checkout via any Meadowlark Extension District Office.