Soil Tests Prevent Over Fertilizing

LEXINGTON, KY.

With input costs remaining high, farmers are looking for ways to make their money go further. Testing soil from fields now can prevent over fertilizing in the spring and potentially save money on input costs, said soil specialists with the University of Kentucky College of Agriculture.

"If you look at the economics of it, including input costs and commodity prices, it looks like it's going to be very difficult for farmers to make a profit this year," said Lloyd Murdock, UK extension soil specialist. "To make a profit, farmers will need to use best management practices, which include using fertilizer as efficiently as possible."

Since plants need nutrients from the soil for life, soil health is vital for optimum crop production. A soil test is a chemical analysis that reveals nutrient levels in the soil. Results from this test help determine which nutrients, if any, are lacking. Producers then use the test results along with past soil management practices and cropping history to decide the amount of nutrients that should be applied.

"Our recommendations are based on Kentucky conditions and research and observations made in Kentucky," said Frank Sikora, UK soil testing coordinator. "We have a good scientific basis for what we recommend."

UK soil testing facilities in Princeton and Lexington conduct about 40,000 soil tests in a typical year. But this year, the facilities have seen about a 20 percent increase, which Sikora said is likely due to the high fertilizer costs.

Soil testing is typically done in the fall and spring. But the next couple of months are the best time to soil test because the state has received enough precipitation to ensure the most accurate results, Murdock said. In the last few years, Kentucky has had dry weather in the fall. Dry conditions can cause a lower soil pH and potassium level.

Producers, who use no-till agricultural practices, should collect soil samples no deeper than 4 inches. Research has shown that most of the soil's fertility is in this top layer of soil.

"In the past, many producers have gone as deep as 6 inches, but when you go that deep you start losing fertility," Murdock said. "It has not been as much of an issue in the past as it is now because of the high input costs."

Nutrient levels can vary within a field so producers should take a soil sample every 20 acres. Those with large fields can use grid sampling, which separates the field into smaller sections, to get the most accurate reading for each area of the field. More information on grid sampling and collecting soil samples can be found in UK publication AGR-16, which is available online at http://www.ca.uky.edu/agc/pubs/agr/agr16/agr16.pdf.

Producers may bring soil samples to any local Cooperative Extension office. The extension office then sends the samples to one of the UK soil testing labs. There is a minimal fee for a soil test. Once the results are in, the county agent for agriculture and natural resources can help producers determine types and amounts of nutrients that need to be applied to the field.

Some producers get their soil tested through private labs. When comparing tests from previous years, they should always make sure the results are from the same type of test and have the same units of measurement. UK uses the Mehlich-3 test for phosphorus and potassium and reports the measurements in pounds per acre.

"Historically, our recommendations have been lower than private labs," Sikora said. Δ