Survey tracks sulfur levels

In a Penn State survey of alfalfa tissue tests, just over one in ten came back low in sulfur, according to agronomy professor Doug Beegle.

The survey was conducted last summer to determine how anti-pollution legislation is affecting sulfur levels in Pennsylvania soils.

Power plant emissions that contribute to acid rain also supply agricultural crops with sulfur, an important plant nutrient. "Since this is a major source of sulfur for our crops, we need to keep tabs on how these reductions are affecting crop fertility," says Beegle.

Sulfur depositions from acid rain are down 25 percent since 1995, when the Clean Air Act required power plants to cut back on sulfur dioxide emissions. There is also less free sulfur coming from phosphorus fertilizers, points out Everett Thomas, a researcher with The Miner Institute in northern New York.

"Years ago, farmers used a lot of ordinary superphosphate, which was eight percent sulfur," Thomas says. "Today, they're using triple superphosphate and other sources that don't contain any sulfur at all."

Sulfur deficiency is common on sandy soils, where leaching is a problem. Because of recent Clean Air legislation, researchers believe that heavier-textured soils will also become susceptible to sulfur deficiencies.

For the alfalfa survey, Beegle chose tissue tests over soil tests to get more accurate sulfur readings. "The soil test for sulfur isn't always a reliable indicator of S status, especially if you don't sample the subsoil," he explains.

A total of 84 tissue samples were submitted from across the state, rep-

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resenting various silt loam soil types. Eleven percent were slightly below the critical levels for sulfur.

This is about what Beegle expected. "It looks like sulfur may be our next fertility concern," he says. For this season, he is advising farmers to evaluate sulfur need on a case-by-case basis.

"If a grower is doing a good job with management and is producing high yields, then he may want to consider sulfur as the next limiting factor," Beegle says. Sulfur deficiency should also be a consideration for growers who are farming sandy or low organic matter soils and/or do not fertilize with manure.

"Sulfur is not a cure-all for mismanagement," cautions Beegle. "But if a grower is doing a good job overall and wants to take his yields to the next level, then I tell him to look at his tissue test levels for sulfur. If there's a deficiency, I suggest using ammonium sulfate because it's a good nitrogen source that also supplies some sulfur."

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