Minnesota study shows sulfur increases yields in heavier soils

Changes in tilling practices necessitate sulfur application for corn

Sulfur increased corn yields by up to 29 bushels per acre in a University of Minnesota study.

But the real surprise was that these yield increases occurred on a silt loam soil, reported George Rehm, University of Minnesota agronomist and coordinator of the study.

"Sulfur has been a standard recommendation on our sandy soils for many years, but this is the first time that we've seen sulfur responses on heavier soils," said Rehm. The study was conducted in 2000 and 2001 on a silt loam soil in Winona County, Minn., with an organic matter content of just under 2 percent.

Normally, corn grown on these soil types gets enough sulfur from the break down of organic matter, said Rehm. But that appears to be changing as ridge till, no till and other reduced tillage methods create a cooler soil environment at planting.

"Under these conditions, it's taking longer for the organic matter to warm up and release sulfur," said Rehm.

In his studies, Rehm compared seed-placed starter with two-by-two placement, using 6 to 18 pounds per acre of sulfur as either ammonium sulfate (21-0-0-24S) or ammonium thiosulfate (12-0-0-26S). Both fertilizer sources performed well on the silt loam sites, but there was a reduction in yield from seed-placed ammonium thiosulfate on the sandy soil sites.

"When applied in contact with the seed, ammonium thiosulfate has the potential for reducing germination and delaying emergence--especially when the seedbed is dry at planting," explained Rehm. "If you're placing sulfur with the seed, you should use ammonium sulfate instead." ■

Reprinted with permission from the *Tri-State Neighbor*.
Article first appeared in March 7, 2003 edition