

# Cooler soils at planting boost need for corn starters

Cooler soil conditions at planting have increased the need for nitrogen and sulfur in corn starters, according to Midwest agronomists.

“Cool soils slow down the bacterial reactions that release nitrogen and sulfur from the organic matter,” reported Ray Lamond, soil scientist with Kansas State University. “Adding these nutrients to your starter fertilizer can speed up early growth of corn and boost yields.”

Lamond estimates that soil temperatures at planting are five to six degrees cooler than normal because farmers are planting corn earlier and/or leaving more crop residue on top of the soil.

“In Illinois, research shows that yields are highest when corn is planted in the last week of April, but many farmers will start planting even earlier to counteract rain delays,” noted Emerson Nafziger, professor of crop production, University of Illinois.

There’s also a significant percentage of corn acreage that’s no-tilled or

minimum-tilled. “Because of all the crop residue on top, no-till soils stay cooler and wetter in the spring,” explained University of Illinois agronomist Bob Hoeft.

In no-till studies over a three-year period, application of starter fertilizer increased corn yields by eight to ten percent sometimes even more, reported Hoeft. The greatest response came from nitrogen applied at a rate of 25 pounds per acre.

“It appears that starter helps the corn compensate for colder soil temperatures in no-till fields,” Hoeft said. “The corn doesn’t come up faster, but once it does come up, it grows faster.”

In Kansas State University testing, Lamond looked at corn starter treatments with and without the plant nutrient sulfur. Over a two-year period, he found that sulfur increased corn yields by an average of 10 bushels per acre.

“Reports of suspected S deficiencies in Kansas have been common in recent years, probably because of decreased atmospheric S depositions, above-average crop yields that use up more sulfur, and

intensified cropping practices,” noted Lamond.

“Here in Kansas we feel it’s a good idea to include 10 to 15 pounds per acre of sulfur in a starter fertilizer treatment on any soil type where corn is grown under reduced tillage or no-till systems, or where corn is planted early,” he said.

In Illinois, Hoeft said sulfur responses have been less consistent, but he expects that to change as power plants continue to cut back on sulfur dioxide emissions to comply with anti-pollution regulations.

“Years ago, crops got enough sulfur from industry smokestacks, but now that’s changing,” said Hoeft. He predicts that new cases of sulfur deficiency will first appear in the northwest corner, an area where smokestacks are already scarce. Crops grown in sandy soils scattered throughout the state will also be among the first to show signs of sulfur deficiency.

For best results, Hoeft recommended placing starter fertilizer 2 inches below and 2 inches beside the seed.