

Sulphur Deficiencies

Study Considers Whether Adding Sulphur To Crops Will Increase Yields

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A project to measure the amount of sulphur in the air across the state of Illinois is underway at the Ewing Demonstration Center in Ewing, Ill. Marc Lamczyk, program coordinator for agriculture and manager of the Ewing Demonstration Center, reported on the study.

“Fabian Fernandez, assistant professor in the Department of Crop Sciences, University of Illinois, has undertaken the project to see if we’re lacking in sulphur across the whole state,” he said. “It has a lot to do with the Clean Air Act. In years past we’ve burned a lot of fossil fuels and a lot of sulphur is not getting in the air. We want to see if there’s a response to yield by adding elemental sulphur to our plots. We’re not going to manipulate the pH or change it significantly, we’re just trying to see if there is a response to adding sulphur to it.”

One reason the trial was begun was in response to the fact that today there no longer is any acid rain. That’s a clue that maybe the crops could benefit from more sulphur.

“The sulphur, or sulphuric acid, that would have been part of the acid rain is no longer there in the atmosphere,” he said. “So we’re trying to see if there is a yield response to adding sulphur to the corn plot.”

All three plots were late planted, due to the fact that the area received 350 percent of normal precipitation in May. All the soil types are fairly consistent.

The plots, formerly in soybeans, were planted on June 1 in 30-inch rows with a no-till planter. The soil conditions were good at that time. Monsanto selected the Bt variety, Dekalb 63-87, for all three plots, and 33 pounds of sulphur per acre was applied. The plots are spread out far enough so there would not be an overlap in sulphur application or no sulphur application.

Seed was planted at 27,000 seeds per acre, and the following herbicides were applied two weeks prior to planting: Roundup WeatherMax, 22 oz/ac; 2,4-D, 3 oz/ac; Degree Xtra, 3 qts/ac; Aatrex 4L, 1 qt/ac; and NIS, 25 percent v/v. Then on June 24 fertilizer (32-0-0) was applied at 57 gal/ac (200 lbs N @ acre).

“We wanted to keep it as even as we can as far as the sulphur plots are concerned,” Lamczyk said. “We cooperate with Monsanto, Pioneer, FS, and Syngenta. There are several companies we work with out here. I just asked the rep to give us enough corn to plant one whole plot in the same variety, with the understanding that we’re applying sulphur to three replications.”

Ewing Farm is completely no-till, with data to prove that one plot has not been worked in 43 years.

“We know it’s the oldest no-till plot in the state, and we’re not sure about the nation,” he added. “This ground is completely no-till, corn, wheat and beans, it doesn’t matter. In fact, even our forage plots over here were completely no-till. There is no irrigation, although the field is

tilled.”

The sulphur cost \$14 for a 50-pound bag. However if it were purchased in bulk, Lamczyk expects that price could be lowered to \$10 an acre. Since this is plot work, it was applied with a push lawn seeder.

“We talked about using some ammonium sulfate products, but we didn’t want to disturb the nitrogen levels as that could skew the results,” he added. “This field has 200 pounds of actual nitrogen on the whole thing, and if we would have put the MS on the sulphur plots, we would



Marc Lamczyk, program coordinator for agriculture and manager of the Ewing Demonstration Center, reported on a project to measure the amount of sulphur in the air across the state of Illinois.
Photo by John LaRose, Jr.

have bumped that nitrogen slightly and that could have changed the results.”

Results showed yields of 114.2 bu/ac on the first sulphur treated plot, compared to 138.7 bu/ac on the first no sulphur plot; 119.0 bu/ac on the second sulphur treated plot compared to 110.7 bu/ac on the second non-treated plot; and 100.7 bu/ac on the third sulphur treated plot compared to 105.8 bu/ac on the third non-treated plot.

The results are just from one year and one location. There was a response in two of the plots.

“I don’t think that is sufficient to warrant anyone applying sulfur on a whole farm basis, but maybe individuals could do some of their own plot work to see if they get a response, or soil test to see how much sulfur is on their own farm,” Lamczyk said.

The use of Bt or non Bt is for the resistance concerns.

“For the sulphur, we’re here to do research so maybe some farmers can take some good information home with them; and maybe that can help them make more money in the long run,” he explained. “This is on a small trial of course, but it’s something we want to do to maintain our presence and help the bottom line, the profit margin for the farmer.” Δ

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