

Test For Nitrogen Efficiency

Farmers Can Save On Nitrogen Costs Through Soil Testing

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Fine tuning nitrogen management in corn was a topic discussed recently by David Dunn, manager of the Delta Regional Soil Testing Lab at the University of Missouri Delta Center. He addressed two tests that are offered for corn producers at the soils testing lab there.

“The first one is the post sidedress soil nitrogen/soil nitrate test and that would be done on samples collected before producers would apply nitrogen in the spring,” he explained. “Our studies have shown that when the corn is 12 to 18 inches tall, you need to have 100 pounds of nitrate as nitrogen in the top one foot of soil. So we are recommending that the farmer or corn producer collect samples at that time, have them analyzed for nitrate content, and then apply the appropriate amount of nitrogen to make up for that. Studies have shown that to raise the soil nitrogen to one pound, a farmer needs to apply two pounds of nitrogen as fertilizer.”

The second test he’s conducting focuses on the indices in the corn stalk test. With this test, it is not possible to affect results for this year, but it gives producers a handle on how effective their nitrogen management strategies were in the past year.

“What this test does is, it tests nitrate found

plant, there will be a large amount of nitrogen left in the corn stalk.”

His analysis focuses on the lower portion of the corn stalk. The result tells the producer if his nitrogen management practices were sufficient, deficient or in excess.

“To do this test we recommend the farmer go out after the growth stage black layer – that is when the corn kernel has been sealed from the environment so no more inputs go into it – and collect 15-20 basal stalks sections from the part of the field that they want tested,” he said. “We measure up from the ground six inches and cut the plant off there. We take the lower eight inches of the plant that is left there – so you have about a six-inch section of corn stalk – take it, dry it and grind it and we have it analyzed for nitrate content then give the corn producers feedback on their nitrogen management practices.”

Both of these tests are available at the Delta Regional Soil Testing Lab located at the Delta Center in Portageville. A \$10 charge is required for each sample.

“The soil test in the spring gives the farmer some feedback on how much more nitrogen they need to apply, whereas the end of the season corn stalk test is strictly for next year,” he clarified. “It gives them some feedback on how effective they were this year.

From his own experience, Dunn has found that corn producers tend to over apply nitro-



Addressing two tests that are offered for corn producers at the soils testing lab is David Dunn, Manager of the Delta Regional Soil Testing Lab.

Photo by John LaRose, Jr.

in the lower portion of the corn stalk,” he explained. “It turns out that during the growing season that corn will accumulate nitrogen in the lower part of the corn stalk and then at grain fill this nitrogen is used to produce grain. If there is not enough nitrogen available to the corn plant when the grain fill is completed, it will have depleted the lower portion of the corn stalk. If there is excess nitrogen available to the

gen and there is some opportunity to cut back and still retain high yields. These two tests would give producers a little bit more confidence in their nitrogen management practices.

“In what I have found, people that think they have applied enough nitrogen probably have applied too much,” he said. “This will give them an opportunity to save some money next year.”

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