Do You Know Where Your Nitrogen Is?

- **Most applied nitrogen is depleted from the soil by late July or early August, around the same time corn enters its reproductive stages.**
- **The rates are variable, but approximately 60% of non-stabilized nitrogen can be lost over winter. This can result in nutrient shortages when corn needs it most.**
- **Applying a nitrogen stabilizer such as N-Serve® or Instinct® can keep nitrogen in the soil 6 to 8 weeks longer than untreated nitrogen, making it critical for fall applications.**

Come harvest, you'll find out if the nutrient management plans you worked so hard to create have brought success and how you may need to adjust for the future. Therefore, now is the time to consider an essential question: Do you know where your nitrogen is?

Your nitrogen...today

According to Mike Moechnig, Field Scientist with Corteva Agriscience, nearly all the nitrogen applied this season will be gone from the soil a few months before harvest.

"It would nearly all be depleted with or without stabilization, which is a good thing because it would not be environmentally advantageous to have unused nitrogen left over at the end of the growing season," Moechnig said.

When looking at end-of-season nitrogen levels, it's important to note the differences in how much nitrogen was available during critical growth stages earlier in the season for stabilized and non-stabilized nitrogen. These numbers can vary greatly depending on many factors, including the rate of applied nitrogen, temperature, soil type, precipitation and, of course, if a nitrogen stabilizer was used.

So, although today the bulk of your nitrogen is either in your crop or lost in some form, just how much is in either area depends on the success of your nutrient management plan and those other factors. Regardless, come early fall, nitrogen has largely vacated the soil.

Fall application considerations

Once that nitrogen is out of the soil and hopefully in your harvested crop, it's time to start thinking about the next nitrogen cycle, beginning with fall nitrogen applications. It's a long road from postharvest application to corn uptake, so it's important to prepare for this long (and cold) nitrogen journey.

"Approximately 60% of non-stabilized, fall-applied nitrogen can be lost in early spring as temperatures rise, which can result in nitrogen shortages during the exponential phase of corn growth," Moechnig said. "This is why protecting fall applications with a stabilizer, such as N-Serve, is so important."

According to Moechnig, using a stabilizer in the fall can keep a significant amount of nitrogen in the soil, ready for spring corn planting. He says results vary due to factors such as how much nitrogen is applied, application timing and subsequent weather conditions like rainfall, but applying a stabilizer is a good idea regardless.

Preplant and sidedress considerations

Once spring arrives, Moechnig recommends using N-Serve or Instinct nitrogen stabilizers to stabilize preplant and sidedress nitrogen applications as well. He says having ample nitrogen available to corn right before the reproductive stages (around tasseling), in late July or early August, can increase yield by about 10 bushels per acre. A good stabilizer can ensure the nitrogen is there.

The bottom line is that N-Serve and Instinct can keep nitrogen available to corn longer, thanks to the active ingredient, Optinyte™ technology. Optinyte technology protects nitrogen at the root zone by slowing nitrification, which helps prevent nitrogen loss via leaching and denitrification. It extends nitrogen availability in the root zone for up to eight weeks and this means nitrogen is available longer to your plants when they need it most.

Nitrogen takes a long journey every year, and a good nitrogen stabilizer can help ensure your corn crop is the ultimate destination on that journey.

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