

4 Steps to Getting a Good ROI for Customers' Fall Nitrogen

Fall is officially here, and as the days get cooler, the window for fall nitrogen applications starts to open. One issue that's likely on your mind right now is how you can help your customers get the best return on that nitrogen investment this season.

The Corteva Agriscience Nutrient Maximizers team gives management recommendations on getting the best nitrogen ROI. Retailers and farmers alike both have this topic top of mind at the moment.

Fall nitrogen applications

Andrew Luzum and Ty Stender, Corteva Agriscience Nutrient Maximizer Strategic Account Managers, have four steps to help you and your customers get the most out of nitrogen applications this fall.

1. Help them plan

Luzum and Stender say the first step is helping your farmers create a realistic corn yield goal and nitrogen plan. "Sit down with your customers and talk about the yield they'd like to grow in 2024," Luzum says. "Talk about what yield has looked like in their fields in the past and what is reasonable to expect next year. Then make sure you're applying the amount of nitrogen necessary for the corn to grow that yield."

Stender adds: "I also advise talking to your customers to see if they would consider splitting up their nitrogen applications. As we know, nitrogen is vulnerable to loss from leaching, denitrification and volatilization. Applying all of it in fall increases the risk for loss. While this does save time for other fieldwork in spring—and can reduce field passes—applying some nutrients in fall and the rest in spring or at sidedress can help ensure the corn gets to use it before it's lost to the environment."

2. Time it right

The second step is to wait to apply fall nitrogen until the time is right. "The time is right to apply fall nitrogen when the soil reaches 50 degrees and the temperature is continuing to drop, but before the ground freezes," Luzum says. "Anhydrous ammonia can't be sealed into the soil if the ground is frozen. However, if the soil is too warm, stable ammonium nitrogen

will rapidly convert to unstable nitrate nitrogen, which is easily lost into the environment. The rate of conversion to nitrate at 50 degrees is about 20% of the maximum rate—still not fully stopped, but greatly reduced. The rate is about 50% of maximum at 60 degrees and jumps to 70% at 65 degrees."

3. Avoid extremes

The third step is to avoid applying fall nitrogen in any extreme environments. "Those extremes we want to avoid are soils that are too dry or too wet," Stender says. "If you're in a drought situation and the soil is too dry, you won't be able to seal anhydrous. On the other hand, if the soil is too wet and muddy, you won't be able to close the soil behind the anhydrous knife, and you'll have the gas escaping in this situation too. You want the soil to be a little bit moist to ensure a proper seal, but neither extreme of too wet or too dry. Additionally, we do not recommend ever applying fall nitrogen on coarse or sandy soils that are naturally prone to loss."

4. Remember the details

The final step is to help farmers remember the other details that can impact nitrogen management in their fields. "Drainage is always a huge factor when it comes to nitrogen use or loss on a corn-growing operation," Stender says. "Improvements can be expensive, but talking with your customers about where they can make small fixes—a little at a time over the next several years—can help spread out the cost and make a big improvement long term."



"It's also important to remind farmers how soil quality can affect nutrients," Luzum says. "Having neutral PH levels, for example, helps make all nutrients more readily available to corn. And then ensuring corn has adequate levels of other nutrients, like potassium, phosphorus and micronutrients, can help the plants grow a better yield and, in some cases, use nitrogen more efficiently."

Protect the investment

Luzum and Stender say it also is important to protect your customers' fall applications with a trusted nitrogen stabilizer.

"N-Serve® and Instinct NXTGEN® nitrogen stabilizers are both powered by Optinyte™ technology, which is proven to increase corn yield potential when used with fall applications," Stender says. "The solutions protect nitrogen below ground from leaching and denitrification."

Luzum adds: "With volatile fertilizer prices, farmers can't afford to leave their nitrogen vulnerable to loss. Protecting that investment can help ensure nitrogen is in the root zone when corn needs it most to maximize yield potential."

Resources

Wolt, J. D. "A meta-evaluation of nitrapyrin agronomic and environmental effectiveness with emphasis on corn production in the Midwestern USA." *Nutrient Cycling in Agroecosystems*. 2004. 69: 23–41.

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