

5 REASONS

Why Optinyte® Technology is Superior to DCD

You know nitrogen stabilizers maximize nitrogen fertilizer investments. But did you know not all nitrogen stabilizers are created equal?

Here are five ways Optinyte® technology – found in N-Serve® and Instinct NXTGEN® nitrogen stabilizers – is superior to products containing DCD (dicyandiamide) when it comes to preventing nitrogen loss.

1. Length of control

The length of control offered by the nitrogen stabilizer should be considered when customers are deciding between products.

"A corn crop will need to take up nitrogen well into August," says Chris Kluemke, Nutrient Maximizer Development Specialist, Corteva Agriscience. "Nitrogen needs to be protected if you want to have the nutrient left in the soil when the crop is trying to finish filling the ear. Optinyte technology provides six to eight weeks of control, while DCD offers only one to two weeks."

2. Impact on yield

The use of Optinyte technology in multiple peer-reviewed studies and field locations showed a 7% yield increase when used with fall-applied nitrogen and 5.2% yield increase when used with spring applications.¹

NutrientStar, a science-based review program for nutrient management, states the following:

- DCD did not have any beneficial yield impacts to either wheat or corn.
- Given its demonstrated ability to increase crop yield while simultaneously decreasing nitrogen fertilizer needs – as well as limiting damaging nitrogen losses into the air and water – nitrapyrin [Optinyte] promises to be an important component of improved management practices.

¹Wolt, J.D. "A meta-evaluation of nitrapyrin agronomic and environmental effectiveness with emphasis on corn production in the Midwestern USA." *Nutrient Cycling in Agroecosystems*. 69, 23–41 (2004). <https://doi.org/10.1023/B:FRES.00000025287.52565.99>

3. Amount of active ingredient

Optinyte technology is quite effective even at relatively low use rates, while DCD is required at a significantly higher concentration (up to 30x the amount) to be effective. And, unfortunately, there are many DCD-based products on the market that don't contain enough of the ingredient to be effective at preventing nitrogen loss.

4. Soil stability

DCD is water-soluble and can leach away with the first significant rainfall event in contrast to Instinct NXTGEN and N-Serve nitrogen stabilizers, which remain in the root zone protecting your nitrogen. Optinyte technology has proven to reduce nitrogen leaching by 16% and increase soil retention by 28% on average.¹

5. Environmental impact

In 2016, the U.S. Environmental Protection Agency awarded Optinyte technology the Presidential Green Chemistry Challenge Award, stating the technology added about 50 million bushels of additional corn, which equates to over \$205 million in additional production revenue for U.S. corn growers, and reduced carbon dioxide emissions by about 664,000 metric tons.

"Results showed that on average, greenhouse gas emissions decreased by 51%," Kluemke said.

For further information on Optinyte vs. DCD, reach out to your Nutrient Maximizer sales team member or check these fact sheets.



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