

# Positive Impact on Yield

Optinyte<sup>®</sup> Technology (Nitrapyrin) vs. DCD (Dicyandiamide)

# YES

# Data does not support

## N-Serve<sup>®</sup> and Instinct NXTGEN<sup>®</sup> Nitrogen Stabilizers

The effect of nitrapyrin on grain yield consisted of 189 observations comprising 437 mean comparisons across 158 locations – years of experiments, with 141 of 189 observations showing a positive effect of nitrapyrin on yield. The grand mean represents a relative yield increase from nitrapyrin of 7.0% when used with fall nitrogen applications and of 5.2% when used with spring applications.

Fall-applied  
**7%**  
average yield  
increase

Spring-applied  
**5.2%**  
average yield  
increase

Source: Wolt, J. D. 2004. A meta-evaluation of nitrapyrin agronomic and environmental effectiveness with emphasis on corn production in the Midwestern USA. Nutr. Cycl. Agroecosyst. 69: 23–41. doi:10.1023/B:FRES.0000025287.52565.99.

## DCD

With the data available, and in the conditions studied, DCD did not have any beneficial yield impacts for either wheat or corn.<sup>1</sup> Some of the studies reporting yield decline may not have fully considered the potential for phytotoxicity with certain application methods. Therefore, if DCD is to be recommended as a product for improving N use efficiency, more research (or increased accessibility of existing field data) is needed to determine the climate and soil characteristics or other management practices most likely to see such benefits.

Source: NutrientStar

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While holding fertilizer rate and other management characteristics constant, nitrapyrin treatment increases average grain yield for both corn and wheat in North America. These yield benefits suggest that nitrapyrin increases nitrogen use efficiency. Such action could reduce environmentally harmful nitrogen losses.

Given its demonstrated ability to increase crop yield, nitrapyrin promises to be an important component of improved management practices.

Source: NutrientStar

<sup>1</sup>NutrientStar. Dicyandiamide (DCD). <http://nutrientstar.org/tool-finder/dcd>

Source: NutrientStar | [www.nutrientstar.org](http://www.nutrientstar.org)

NutrientStar is a science-based review program for nutrient management.

A nutrient management tool or product earns a spot on the NutrientStar website when its independent review panel assesses available data on the product's ability to increase nutrient use efficiency during field trials.

They use a scientifically rigorous, transparent method for measuring efficiency that allows the review panel to assess tools by their level of performance.



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