



SERPENTINE®

NITROGEN STABILIZER

ABOVE + BELOW GROUND PROTECTION ▼ NITROGEN STABILIZER
PROPRIETARY ACTIVATOR ▼ ADDITIVE PACKAGE ▼ PENETRANT TECHNOLOGY

SERPENTINE® vs. DCD COMMODITY PRODUCTS

by John D. Bailey PhD

DCD's benefit is limited by soil type and field capacity

Straight commodity products, like DCD, limit the scope of benefit to a very narrow set of field circumstances:

- ▼ On sandy soils with low CEC (or simply shallow soils) where water input exceeds the soil's ability to hold water against drainage, especially on irrigated fields, the 34% DCD is the best choice for nitrogen protection.
- ▼ On loamy soils with high CEC (or simply deep soils) where water input rarely exceeds the soil's ability to hold water against drainage, especially in dryland production, the 34% DCD product is NOT the best choice.

DCD's benefit is limited by the type of fertilizer and the tillage system on the farm

Commodity products like DCD, regardless of percentage, will not protect urea and UAN from urease-mediated ammonia volatility loss. **Therefore, if farmers are using urea or UAN fertilizers that stay on the surface for a while, using a straight DCD product is super risky to the farmer and is NOT the preferred choice.**

High rates of DCD can actually be a limitation on yield potential in certain crops

The nitrification process (which is what DCD blocks) is necessary to feed the crop properly (especially a crop like corn). Excess ammonium build-up with high rates of DCD can prevent the crop achieving it's highest yield potential. One must exercise caution. This is because a corn plant prefers nitrate over ammonium as a nitrogen source and can be stunted by excess ammonium. Sure, we can put a high rate of DCD on if all we are concerned about is leaching. Good for the environment, bad for the farmer.

DCD cannot improve the uptake of nutrients

There is no new technology in commodity products like DCD that will help the crop actually take up the saved nitrogen. SERPENTINE® is different and includes an active ingredient that change the way the root system functions. After all, it does little good to simply save the nitrogen - we must improve the probability that the crop will actually utilize the nitrogen and make sure it's in the right form - commodity products like DCD will never offer this.

As you can see, if the farmer is operating in a very specific set of circumstances (i.e., sandy soils, low field capacity, irrigation, with incorporated ammonium-based fertilizers) DCD is fine. For loam or clay soils with high CEC, high field capacity, dryland, using surface-applied urea-based fertilizers, SERPENTINE® would be preferred. Situationally, I suspect more scenarios fit SERPENTINE® because it doesn't have the same limitations as DCD.

Since SERPENTINE® has the flexibility to cover more situations, it will bring more benefits to more farmers in the end. However - there is no silver bullet in any of these products...knowledge of the farmer's practices are absolutely critical to choose the right product.



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