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"Large Enough to Serve, Small Enough to Care"

Nitrogen: Developing a Sustainable Plan

It is hard to imagine, but in less than 90 days we could have corn planters rolling across Northwest Iowa. As we all know, a lot of planning is taking place during these winter months for the coming planting season. One very important aspect to consider is your current Nitrogen plan. Take some time to go over your strategy, and be open to adopting new ideas. Nitrogen (N) is arguably the most important nutrient in a corn crop growing season. In addition, N is probably the most difficult to predict and control in the environment we apply it in.

The N that a corn crop uses comes from many different sources. Recently added crop residue, organic matter, and legume crops like soybeans, add to soil supplied N. But here again, the timing of the mineralization and availability of these sources can often be hard to predict. Applied N to the soil in the form of Urea, UAN (liquid), NH_3 or other sources such as manure, give corn the majority of their N requirements.

One factor to think of when devising a plan is your application method and timing. Are you applying all N up front? Consider this: Corn accumulates only 1 lb of N/ac. by the four leaf stage. But over the next 6 weeks until tassel, demand skyrockets and **60 - 70 percent** of total N is accumulated in the plant. For this reason alone, think about side dressing as part of your operation. What source of N are you using? Different N sources have different risks involved. All can be subject to volatilization, leaching, or denitrification. There are some great products out there that slow these loss factors down and extend the availability of N to the crop.

- **Agrotain** is a product that protects only against volatilization loss factors, which is basically evaporation of un-incorporated N off of the surface.
- **Instinct** and **N-Serve** are products that slow denitrification and leaching losses only, thereby extending time N is available to plant. These losses can occur in wet soil and are made worse with compaction and warm temperatures. N in soil is released into the air as a gas.
- **Nutrisphere** and **Agrotain Plus** are products that protect against all three of these forms of loss.

It is important to select the right product for your needs. For example, if you plan on incorporating or injecting your N immediately, you would not need a product like Agrotain, but Instinct would be good if the soil or conditions are prone to losses from leaching or denitrification. Or, if you were a no-till grower broadcasting urea, Agrotain would be a great product.

There are also some tools we have available to measure N in the soil. The late spring nitrate soil test gives us a good snapshot of how much plant available N is in the soil at

that time. We often use this as a tool in making our side dress recommendations. An end of season stalk test measures how much N was left in the stalk, which tells us if the plant ran short of N or if we had excess.

In closing, let's do all we can to manage our Nitrogen and have it available for the crop to use rather than letting it float down the Mississippi. Everyone will benefit, and growers will see yields increase as these practices are used. Contact your local FEC representative to see if there are ways we can work together and help improve the efficiency and profitability of your operation.

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