

Corn Fertility

Spring Nitrogen Application Better Than Fall In So. Illinois

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Nitrogen management for corn production in Southern Illinois was a topic discussed recently by Fabian Fernandez, University of Illinois Soil Fertility Specialist. His presentation was based on current research conducted mostly at the time of application and looking at nitrogen sources.

"One of the main messages that I'm sharing today with the farmers and ag producers is that fall nitrogen application for the southern part of the state should not be used," he said. "That's not anything new, but I'm stressing that it is very important. We manage nitrogen to the best of our ability to minimize potential losses, and fall nitrogen application is one that in the southern part of the state is just not recommended for several reasons.

"The soils are one of them with lower organic matter that can reduce the efficiency of nitrification inhibitors, but also the temperatures. Higher temperatures increase the breakdown of nitrification inhibitors. Also, microbial activity that transforms ammonium to nitrate is higher with warmer temperatures. Once nitrogen is in nitrate form it can be lost either by leaching or denitrification. So with warmer temperatures through the winter in the southern portion of the state, the way to minimize losses is by not applying nitrogen in the fall."

The other part of his message is that in the spring there are more options to apply nitrogen and different sources of nitrogen. It can be applied very early in the spring, right before planting or at sidedress time. He discussed some of those findings, saying that preplant applications or sidedress applications all work very well if they are done correctly.

"So the main message here is that weather you apply preplant or sidedress or a combination, it works very well because the application is being done close to the time the crop will use nitrogen and reduces the potential for nitrogen loss" he said. "The source of nitrogen though is important too. In the research we are conducting, early preplant applications with ESN, a

polymer-coated urea, for instance, works better than urea and UAN. It helps protect nitrogen if we have a late wet spring after planting like we had in 2010; but it doesn't work as well for sidedress application. At that point we want to apply a nitrogen source that is readily available for the plant. If we apply a polymer-coated urea fertilizer at sidedress time, the release of that nitrogen may be too late for the crop to fully benefit from the application and that can result in yield reductions." Δ

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Dr. Fabian Fernandez, University of Illinois Soil Fertility Specialist explains nitrogen management for corn.

Photo by John LaRose Jr.

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