

## NITROGEN MANAGEMENT FOR CORN



1824 N St, Ste 102 • Auburn NE 68305  
402-274-4755 • [www.nemaha.unl.edu](http://www.nemaha.unl.edu)

In 2019 with all the rain received and flooding in southeast Nebraska, much of the corn looked very anemic, even up to harvest. End of season stalk-nitrate testing indicated some growers were nitrogen deficient at harvest and corn yields were below expectations. Other growers that applied nitrogen during the growing season had adequate nitrogen to produce excellent corn yields in 2019. At the end of June this year, 2020, corn looks much better than in 2019, at least it appears to have sufficient nitrogen (corn is a dark green color). With good growing conditions in southeast Nebraska, there may be an opportunity to increase corn yields with added nitrogen. I have seen some growers fly on nitrogen with an airplane last week. Earlier this summer, some growers were applying nitrogen dry with a ground rig over the top. Farmers with center pivot irrigation also have the opportunity of applying liquid nitrogen at different times throughout the growing season. This is a very efficient method of applying nitrogen when the corn plant needs it most.

There may be a few fields in southeast Nebraska that have areas that are staying yellow, but nothing like last year. These yellow areas have probably lost nitrogen to the environment if liquid nitrogen had been applied on the surface, much of this may have washed away. If nitrogen was applied into the soil, it may have been leached down below the current root zone. Under the saturated (anaerobic) soil conditions, nitrogen may have been lost to the atmosphere as a gas in a process called denitrification. All of these factors may be contributing to the yellow corn and it may respond to added nitrogen.

With current technology, some producers are using sensors either on a ground rig or with an unmanned aerial vehicle to evaluate nitrogen status of corn and applying nitrogen accordingly to meet the crop needs. Nebraska Extension has been conducting research using sensors on a high clearance ground rig to improve nitrogen management, especially in nitrogen management areas where ground water is threatened by high nitrogen levels. A base amount of nitrogen is applied before planting and nitrogen is then side-dressed with this rig to meet the crop needs. To learn more about “**Project Sense**” this research project and tool for nitrogen management go to: <http://cropwatch.unl.edu/projectsense> . Nebraska on-farm research is conducting nitrogen management through **Project Sense** on dryland fields here in southeast Nebraska in **2020**.

If corn is nitrogen deficient, the application of 75-100 pounds of nitrogen per acre should pay for itself if you can get it on. The past few years, farmers in northwest Missouri, northeast Kansas and southeast Nebraska have applied nitrogen with airplanes in fields that were N deficient. High clearance ground rigs may also be used for nitrogen application. If sensors indicate corn may respond to added nitrogen with higher yields under ideal growing conditions; this may be the year when it pays to add additional N in-season to some of your corn fields.

If you have questions about this subject feel free to contact me at Nebraska Extension (402) 274-4755 or (402) 274-9639 (cell).

Gary Lesoing  
Extension Educator  
Nemaha County  
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