

WHAT ABOUT THAT YELLOW CORN?

With all the rain we have received earlier this spring, some of the corn in southeast Nebraska looks very anemic. Much of this is due to very saturated soil conditions where the corn was literally drowning, due to lack of oxygen. Corn in some of the river bottom fields did drown out and die. With drier conditions, warmer temperatures and sunshine the past couple of weeks, most of the corn has improved, particularly on upland fields. The question is, “Is there still nitrogen available in the soil for the corn plant to utilize or has it been lost to the environment?” Most of southeast Nebraska has had major thunderstorms (2-3” of rain one or more times), this spring and 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 have contributed to the yellow corn.

What about these fields or areas in fields that are staying yellow? In upland fields, ideally it would benefit to take a soil sample down to 3’ to see if there still was some available nitrogen for the corn plant below the current root zone. There could be a significant amount of nitrogen in the 2-3’ zone. If the color of corn does not improve in the near future, would it pay to apply nitrogen fertilizer to them? Most of the corn in the area is still small enough to apply nitrogen with a ground rig. If you have a large area in a field where a ground rig can navigate and where most of a field is yellowing, it should be worth your time and money to apply some nitrogen. If you can apply nitrogen without running over and damaging much corn, you may want to consider it.

The past three rowing seasons (2013, 2014 & 2015), I have conducted some small plot on-farm research in Nemaha County. In 2013, nitrogen was surface applied in a dry form as urea (46-0-0) at tassling at the rates of 0, 50, 75 and 100 lbs. of nitrogen (N) per acre. This method simulated nitrogen being top-dressed with a high clearance ground applicator or through aerial application. Results of this experiment showed a significant increase in yield when N was applied mid-season to the nitrogen deficient corn. Corn yields were 75, 105, 106 and 123 bu/ac for the 0, 50, 75 and 100 lbs of N top-dressed treatments respectfully. This experiment was repeated at two locations in 2014 with N being applied at the R1 stage. A combined statistical analysis indicated a significant yield increase at the 100 lb N/ac rate, compared to the 0 lb N/ac treatment. Corn yields were 88, 99, 104 and 115 bu/ac for the 0, 50, 75 and 100 lbs of N top-dressed treatments respectfully. In 2015, this experiment was repeated on an upland field with N again being applied at the R1 stage. Corn yields were 94, 104, 111, and 121 bu/ac for the 0, 50, 75 and 100 lbs of N top-dressed treatments respectively. The greater yield response at the 100 lbs per ac N rate may be due to some of the surface applied nitrogen having volatilized due to lack of significant rainfall after application. With the 100 lb. rate of nitrogen, more N remained on the surface and was available to be utilized by the corn crop after it rained in late August. These applications were made at a much later growth stage of the corn, so there is time to see how your corn plants grow and respond to the environment and if nitrogen application would be feasible. If nitrogen is surface applied as urea, the key is getting sufficient rainfall following nitrogen application so the crop can use it.

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. I have heard reports of some producers already applying nitrogen in areas of east central Nebraska that received much more rain than we have received. Last year several farmers in northwest Missouri and southeast Nebraska had nitrogen applied with airplanes in fields that were N deficient.

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

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