



The Chem Gro Crop Watch, Issue #2, 6/30/15

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How much nitrogen have I lost? As we accumulate rain by what seems almost daily, the burning question is “Will I have enough nitrogen left for my corn crop, and do I need more?” Granted the answers to these questions is going to vary on how much rain you have acquired, how much nitrogen you put on (and when it was applied), surface drainage (or lack of), and ground tile. In other words, there is a lot of guessing going on, but there are some very nice weather monitoring tools that have become available in the last two years that are helping us take some of the “guessing” out of the equation. Climate Corp is a weather monitoring website that I have taken advantage of and enrolled in their “250 acres free program of Climate Pro”. I am not endorsing or promoting their program over any other climate monitoring program that is available, rather I wanted to at least share their data and findings on one of the fields that I have enrolled in their program. **This field (called Johnson South) is located 2 miles east of Adrian, IL**

Understanding how much rain we have received. The yellow line in the chart below shows the 15 year average of rainfall from April 1st through June 29th at Johnson South. The dark blue is the accumulated rain in inches for April 1st through June 29, 2015 at Johnson South. April and May were very dry in the Adrian, IL area. I can remember repeatedly telling myself at that time how bad we needed rain to make the corn and soybean residual herbicides to work; otherwise there would be a lot of weed escapes. It wasn't until the last 2-3 weeks in June when the wet saturated field conditions have started.

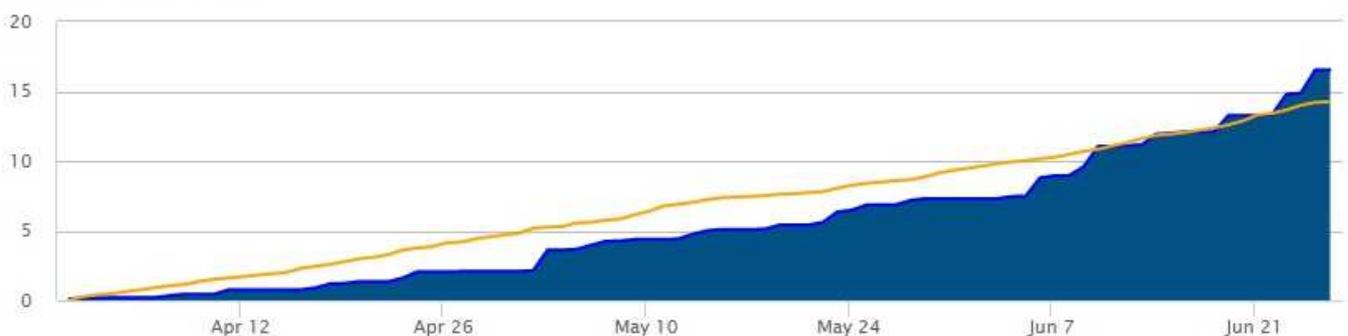
Past Weather: JOHNSON SOUTH

Date Range: Harvest Year: Compare:

Precipitation

Help

Accumulated Precip



Do I need additional nitrogen? The chart below is an estimate of how much nitrogen is left to produce a corn crop on the field Johnson South. This chart uses an algorithm that uses the following input variables to help predict if there is enough nitrogen for a corn crop (yield goal, planting population, planting date, soil type, soil cation exchange capacity, soil organic matter, soil pH, nitrogen types and application timings, rainfall accumulation, Growing Degree Days, nitrogen stabilizers, drainage (tile), previous crop and residue management). As this field sits today; the prediction is that there is enough plant available nitrogen to make a 240 bushel corn crop. This chart continuously updates based upon rainfall and allows you to change input decisions (such as yield expectations) to see if there will be enough nitrogen available to get you to your harvest goal.



Insights and Events Nitrogen Applications

Nitrogen Insights and Events

- 1 Nov 6, 2014: 150 lbs N/ac of anhydrous ammonia applied and injected or knifed in. Not all applied nitrogen is immediately available to the plants.
- A Nov 6, 2014: 2 lbs N/ac nitrogen loss due to volatilization.
- 2 Feb 24, 2015: 36 lbs N/ac of diammonium phosphate (DAP) applied and broadcast - not incorporated within 3 days. Not all applied nitrogen is immediately available to the plants.
- B Feb 24, 2015: 3 lbs N/ac nitrogen loss due to volatilization.
- C Jun 25, 2015 - Jul 8, 2015: Likely 10 lbs N/ac nitrogen loss projected due to leaching caused by heavy precipitation.

“If” there is enough nitrogen available, then why is there so much yellow corn in the area? I can remember one of my college agronomy professors saying something to the effect of “A plant is not like a person. It cannot tell you if it is too hot, too cold, it feels sick, its stomach hurts, it has a headache, etc. A plant can only visually show symptoms of what is wrong. The issue is; there may be several causes of plant problems that show very similar plant symptoms”. For example, just because your corn is yellow does not necessarily mean that there is a shortage of nitrogen in the soil.

Yellow corn....what is going on? The picture on the next page explains (my opinion) of what is causing the yellow corn in our fields. This picture was taken 6/29/15. This field had 150 lbs. /acre of

spring applied anhydrous ammonia around April 15th. As you can see there are large areas of corn that are very yellow with the bottom leaves “firing up” that appear to be lacking nitrogen.



If you were to do a plant tissue test of these yellow corn plants, there is no doubt in my mind that the tissue test will show deficiency in nitrogen. However, that does not mean there is not enough nitrogen in the soil to supply the plant. What you cannot see from this picture is that this yellow corn has been and continues to be swimming in water. Plants need oxygen to survive just like any other living creature on this planet. Plants need oxygen to be present in the soil to support a healthy root system to absorb nutrients (such as nitrogen). When water displaces all the available oxygen in the soil, the soil is no longer aerobic (with oxygen) and becomes anaerobic (without oxygen). Plants and native soil life (micro-organisms) quickly die in anaerobic conditions.

Will extra nitrogen improve this yellow corn? In my opinion, adding extra nitrogen (such as flying on urea with an airplane) will not help this corn. The lack of oxygen in the soil is the limiting factor for growth in these corn plants which is preventing nutrient uptake. To better help explain my theory on this, I want to leave you with this analogy:

Imagine if you will.... I sowed your mouth shut with fishing line, and I placed you inside a Texas Roadhouse restaurant for two weeks. The doors are locked and you cannot exit the building. There is food all around you; the best prepared steaks and the freshest hot from the oven dinner rolls with that wonderful goodness called honey butter. Cold beer on tap to wash it all down. You are in food heaven! But, as I said, your mouth is sowed shut. What will your body condition look like in two weeks despite being surrounded by food?? !!

That's my 2 cents worth.....the choice and decision is always yours.

Lonne