August 17, 2012

SCHEDULING LAST IRRIGATIONS

With irrigation management, we always encourage producers to leave room for rainfall and not finish the season with a full profile. That's no problem this year. Farmers did not get hardly any breaks in running irrigation systems in July and August this year to shut the wells off. However, because much of our corn this past week is at half starch line, the crop water use is slowing and we received a much needed break in temperatures.

I received three different calls last week with irrigated corn fields under pivot. These producers were using watermark sensors. The sensor readings were typically in the 100's or even above 150 to 170 deep into the soil at two and three feet. The higher the readings, the drier the soil. A reading of 200 is 60% depletion where we do not want to move beyond that. The reason why the dry subsoils this year is the ET demand or evapotranspiration of the crop was unlike what we have seen for quite a few years.

On the internet at water.unl.edu, Gary Zoubek in York County encourages producers to post ET gage readings across the area. In Saline County I posted readings near a cornfield in Wilber and Frank Andelt has been posting his readings south of Crete. In the past seven weeks, Frank recorded crop water use (adjusted to stage) at 13.52 inches for irrigated corn or using 1.93 inches of water on average per week. I recorded right at 12 inches of water use or an average of 1.71 inches per week for corn. (My ET gage ended up being closer to the irrigated crop which makes a difference compared to out in the open). That's why subsoil watermark sensor numbers are reading higher this year. A corn under pivot had to make up the water deficit difference using up subsoil moisture, especially so when wells are pumping partial capacity.

With that in mind one-half starch line, the irrigated corn crop still takes 13 days to black layer and 2.25 inches of readily available moisture from the subsoil, and/or irrigation or rain. With cool weather we could manage down to 60% depletion in the profile. With hot weather I would stay at the 50% depletion. Predicted black layer is the last week in August for much of our crop planted the last two weeks in April. That's why pivots are still needing to run on corn at the same time we have reached a critical stage in our soybeans.

We are a long ways off from finish on our irrigated soybeans. Soybeans trigger by day length not by heat. We are not yet at R6 on much of our irrigated soybean crop. It does make a difference between a 3.0 and 3.6 type of variety and April planted versus mid-May plantings. At R6 you have at least one single pod with full-size green beans (bean is full size when it fills pod cavity) at one of the four uppermost nodes on the main stem with fully developed leaves. At this point the plant on average needs 3.5 inches of water and 18 days to maturity. This will not occur until in September on many of our fields.

So once again it is like the corn. What are the sensors saying at two and three feet deep in the profile? Are they reading in the 100's and showing drier subsoil? You do not want to stress a tall, irrigated soybean crop beyond 60% depletion in the root zone at maturity. Doing so can cause smaller beans.

This year more so than ever, for optimum water use efficiency and profitability, producers need to monitor rainfall (that was easy), soil moisture and crop water uses and utilize cropping systems like no-till or reduced tillage to capture and retain as much precipitation as possible. It's been a long ole' haul for irrigators, but the finish line will be here before you know it.
For more information, give me a call or email, or go to the NebGuide G1871, Predicting the Last Irrigation of the Season, http://www.ianrpubs.unl.edu/live/g1871/build/g1871.pdf

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