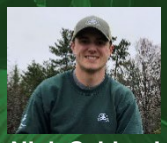
Agronomy Weekly Update

October 18th, 2021



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Agriculture Division of DowDuPont

CORTEVA BRAND VALUES — ENRICH LIVES | STAND TALL | BUILD TOGETHER | BE CURIOUS | BE UPSTANDING | 0 LIVE SAFELY

Field Update- Forecasted Frost and Fall Preparation

A hard frost has held off beyond the "normal" date range, which typically occurs between Sept. 21st – Oct. 11th in central MN. However, overnight temperatures are forecasted to drop into the mid-upper 20's to end the week. The frost always marks the end of the growing season. Reaching physiological maturity was not necessarily a concern this season due to record setting GDU accumulation from planting to the first hard frost. The region will end the season with nearly 3000 GDUs accumulated since April 26th, which was ~578 GDUs ahead of normal. In terms of calendar dates, this translates to nearly 3-4 weeks ahead of normal!

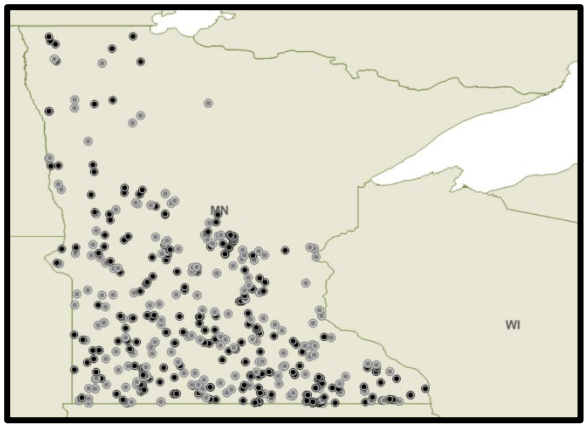
Location	GDUs Since April 26th	GDUs From Normal- 4/26	Projected GDUs- 7 Day
Wadena, MN	2688	+583	19
Little Falls, MN	2989	+688	20
Albany, MN	3058	+625	20
Buffalo, MN	3146	+503	26
Glenwood, MN	3127	+621	23
Cambridge, MN	2981	+450	25
Average	**2998**	**578**	**22**

*Data collected from Pioneer.com GDU Calculator 4/26 - 10/17

Weather conditions have finally allowed for soybean harvest to continue, after many moved over to corn due to heavy dews/rains that prevented ideal soybean harvest conditions. Minnesota has eclipsed the halfway point for harvest with 53% of corn and 91% of soybean acres harvested. Harvest progress is ahead of normal, which will allow for plenty of opportunity to start preparing for next year with tasks such as tillage, soil sampling, nematode sampling, fall fertility and manure applications.

Interpreting Yield Results- Right Choices, More Often

The harvest season is an exciting time of year, as you get to realize the results from the hard work throughout the growing season. During this time, you start to understand product performance and interpret yield results from various sources (test plots, yield monitors, side-by-sides). These results can influence decisions on hybrid or variety selections for the following year. However, have you ever had a product perform well one year and struggle the next? The impact of environment can play a large role on product performance from a single location, in one year. Therefore, consider results across a range of environments to better understand how the product performed and increase the chances for success next year. Below are some suggestions to help analyze yield results:



Pioneer Corn-Grain Product Knowledge Plots in MN during 2021. Total 435 locations.

- **Choose Well-Executed Plots:** Plots tested on a uniform area through minimizing soil variations and consistent management practices ensure that all products are tested as uniformly as possible. Plots with many entries can be difficult to maintain uniformity.
- **Equal Product Comparisons:** Compare products within similar maturities (+/- 3 CRM) and technology segments.
- **Multiple Environments:** Draw conclusions on product performance across multiple locations. This can help better understand consistency across soil types, management practices, environment, etc. A single location in a given year is not a good predictor of future performance. However, better confidence can be gained with success across multiple locations.
- **Be Aware of Small Yield Differences:** The smaller the yield difference, the more plots that should be considered. A min. of 10 locations should be used in one year or over a period of years.

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Test plots can be extremely beneficial to understand the product performance in your local area under that given environment and management practices. However, the environment will change next year and it is difficult to predict. Therefore, looking at additional locations in conjunction to a single location can help better mitigate risk and guide product decisions. Local yield results from Pioneer Product Knowledge Plots can be found at pioneer.com/us/yield-results. Also, ask your Pioneer Sales Representative for additional yield information.

What's on the Corn?

While walking fields and riding in combines recently, I have had several comments regarding the physical appearance of the corn this season. Keep in mind, every growing season is different and corn hybrids are living, biological organisms that will react based on interactions between genetics, management practices, and environment. This season is no exception and below are several comments regarding the physical appearance of the corn crop during harvest:

- **Red/Purple Corn Stalks-** The red/purple color is a result of an accumulation of sugars in the leaves and stalks, which are produced by photosynthesis. Stresses such as temperature, moisture, or disease that reduce ear size and kernel set can result in an overabundance of sugars in the plant tissue with nowhere to move them to. Essentially this is a sink (ear) – source (plant tissue) imbalance within the plant.
- **Black-Sooty Molds-** Black mold have covered the leaves and stalks on corn plants across the region, which has resulted in "sooty" machinery during harvest. What is the cause? Saprophytic fungi that feed on dead plant material. This is caused by warm, humid weather and heavy morning dews, which have been common over the last several weeks. Should there be concern? No- grain and stalk quality are not compromised by this mold.
- **Tall Plants-** Fields with irrigation or sufficient moisture may have developed taller than "normal" plants this season. Essentially this leads back to the extended hot temperatures during the vegetative period, which resulted in faster growth → increased internode elongation → taller plants.

Ultimately, these plant responses are merely cosmetic and not yield limiting, but rather an outcome of the year due to interactions between genetics, management practices, and environment.

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