

Agronomy Weekly Update

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CORTEVA
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Field Update- GDU update and Upcoming Harvest

The first half of September produced weather conditions closer to the long-term “normal.” Rainfall totals are still 50-75% of normal for the month, but promising rains are forecasted for the upcoming week. The average growing degree unit (GDU) accumulation across the region has totaled 2562 since April 26th, which continues to be ~382 ahead of normal. As the crop reaches maturity, GDUs continue to be tracked in order to help monitor grain drydown rates. An average of 15-20 GDUs per point are needed to dry corn grain from 30-25%, while a higher rate is needed to further reduce moisture from 25-22% (~20-25 GDUs per point).

Location	GDUs Since April 26th	GDUs From Normal- 4/26	Projected GDUs- 7 Day
Wadena, MN	2337	+431	93
Little Falls, MN	2549	+468	103
Albany, MN	2601	+411	105
Buffalo, MN	2665	+290	124
Glenwood, MN	2679	+419	110
Cambridge, MN	2540	+275	113
Average	2562	+382	108

*Data collected from Pioneer.com GDU Calculator 4/26 - 9/13



The corn and soybean crop are progressing rapidly towards maturity and harvest is approaching. Soybean fields vary in maturity throughout the region; however, a number of fields are approaching R8 or when 95% of the pods have reached a mature color. Once plants reach R8, the field is ~5-10 days away from reaching acceptable harvest moisture levels depending on weather conditions. Soybean fields that are still at R7 (one mature pod on the main stem) will need ~2-3 weeks to reach harvest maturity. Variability in the corn crop has been a common theme while walking fields over the last couple weeks. Areas with insufficient moisture have experienced premature death (PMD) and reached black layer early, while areas with sufficient moisture are maturing normally. Start to prioritize fields for harvest based on stalk integrity and grain moisture.

Soybean Moisture and Harvest Timing- Minimizing Losses

The first combines are anticipated to start harvesting soybeans later this week in central MN and many more fields will be ready next week with the weather ahead. Soybeans can dry quickly and grain moistures need to be monitored closely. Minimizing excessive drydown and losses during harvest will ultimately maximize yields and profits. How can these be monitored as you're starting soybean harvest?

Grain Moisture

Target grain moistures between 14-15% to begin soybean harvest with an ideal harvest moisture of 13%. It is not uncommon for a few green leaves and stems in soybean fields that are at the correct harvest moisture. However, waiting for all leaves to be lost can result in over dried grain, which means loss of saleable weight at the elevator. These losses can be as much as 5.4% when harvesting at 8% moisture compared to 13%. Therefore, begin checking grain before all the leaves have dropped to ensure harvest begins when moisture nears ideal.

Harvested Moisture	Percentage of Yield Loss	Yield Loss @ 60 bu/ac
13%	0.0%	60
12%	1.1%	59
11%	2.3%	59
10%	3.3%	58
9%	4.4%	57
8%	5.4%	57

Soybean yield loss x grain moisture. Dorn, T. 2009. Univ. of Nebraska-Lincoln.

Harvest Losses

If you're starting to see soybeans on the ground during harvest, you can use the method below to determine yield losses as well as whether these are incurred pre or post-harvest.

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- **Pre-harvest-** Measure a 10 sq foot area in the standing soybeans and count the number of beans on the ground. 40 soybeans in a 10 sq ft area = ~1 bu/acre yield loss.
- **Machine Losses-**
 - Header Loss- As you're combining, back up the combine 20 ft. and measure out a 10-sq. ft. area in front of the header. Use the same process above to determine yield loss due from the header.
 - Threshing & Separating Loss- Measure a 10-sq. ft. area behind the combine and repeat the process.
- Combine the total losses between pre-harvest and machine losses to determine total loss.

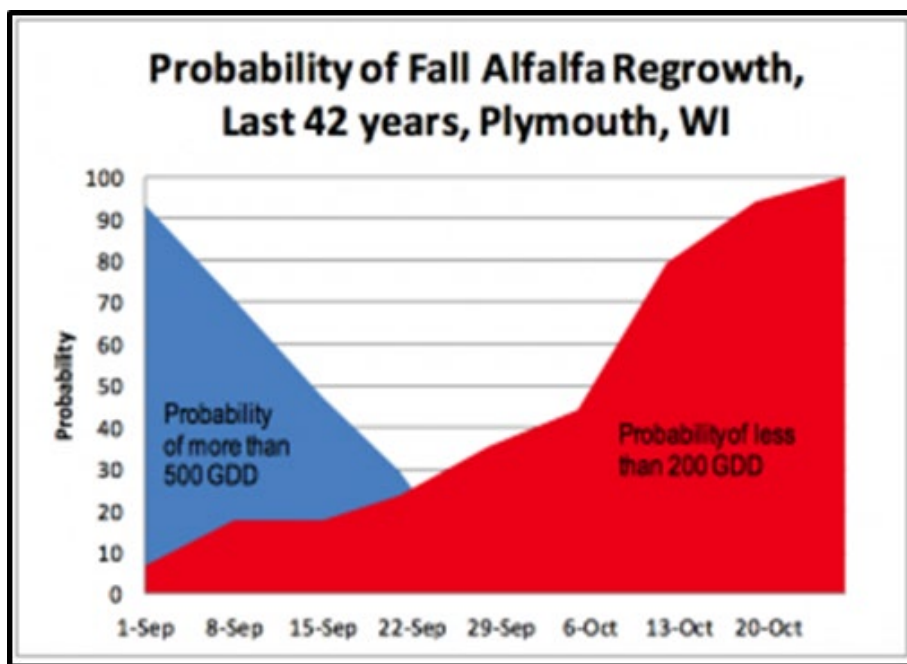
Alfalfa Last Cutting- Cut or Wait

The last half of September brings about the decision whether to take another cutting or leave it through the winter. The decision can be based on forage needs, stand health, and future rotation. However, there is a “no-cut” window that should be considered in order to improve stand persistence. What is this window?

- Allow more than 500 GDUs to be gained after the last cutting and prior to a killing frost (24°F) or gain less than 200 GDU after the last cutting.
- This “no-cut” window has been established for 2 reasons:
 - 1) Prior to Sept. 1- Enough regrowth allowed to replenish root carbohydrates.
 - 2) End of Oct/Beginning Nov.- Regrowth will be minimal and not use any root carbohydrates.
- The reason for the suggested restrictions is to allow the crop to have enough root carbohydrates, which improves winter survival and spring regrowth.

Utilizing long-term weather history, there is a 50% probability to gain more than 500 GDU (in Plymouth, WI) after Sept. 15. After Oct. 13th, there is about a 70% probability to gain less than 200 GDUs. We do not necessarily have to wait until a killing frost to take the last cutting, where research has indicated that alfalfa can be harvested earlier as long as there is less than 200 GDUs accumulated the remainder of the season.

If the stand is going to be kept, the decision to harvest early vs. delaying harvest should be based on potential for winter injury rather than forage quality since this changes little during September. It is important to consider factors such as age of stand, winter hardiness scores, fertility, and inventory when making these decisions.



Probability of fall alfalfa regrowth, last 42 years for Plymouth, WI. Undersander, D. 2012.

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