

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
July 14, 2020**

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's will be tracked for the 2020 growing season with comparisons to the previous six years. The accumulation of GDD's will begin after the snow has melted from the perennial ryegrass fields and continue through swathing. A base temperature of 32 degrees F will be used for perennial ryegrass (T-Base = 32 F).

- Year to date GDD = 2,294 (Table 1)
- Last week (June 29-July 5) accumulated GDD = 270 (38.6/day)
- Average GDD for the second week of July = 243 (34.7/day)
- Average GDD for the third week of July = 239 (34.1/day)
- Projected GDD for the third week of July 2020 = 264 (37.7/day)
- Average temperatures for the third week of July = High 79F and low 53F
- Projected temperatures for the third week of July 2020 = High 80 and low 58.9F
- The new ten day forecast suggests a continuation of above average temperatures. The projected GDD accumulation of 37.7/day compared to the average of 33.8/day

Table 1. Growing Degree Days (GDD), March - July 2014 to March - July 2020 near Roseau MN.

Year	2020	2019	2018	2017	2016	2015	2014	2019 vs. 2020
March	30	0	0	90	38	119	0	+30
April	183	211	184	458	263	367	159	-28
May	600	548	815	679	765	659	654	+52
June	995	919	1,007	917	945	941	964	+76
July 1-12	486							
July		1,067	1,100	1,095	1,123	1,147	1,066	
Total	2,294	2,745	3,106	3,239	3,134	3,233	2,843	
*July 13-22	377							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

The new ten day forecast suggests a continuation of the above average temperatures with projected GDD of 3.9/day above the long term average. Since the week ending May 12th we have had 9 straight weeks of above average GDD/day. The following is weekly GDD/day departures from average.

- 5/19 - +10 GDD/day
- 5/26 - +6.7
- 6/2 - +9.8
- 6/9 - +1.5
- 6/16 - +5.2
- 6/23 - +6.8
- 6/30 - +9.9
- 7/7 - +5.2
- 7/14 - +3.9

CROP MANAGEMENT

Many spring seeded ryegrass fields are past physiological maturity with others not far behind. Once the plant has reached physiological maturity the plant will begin the dry down process until swathing. The above average accumulation of GDD in June and thus far in July may have accelerated ryegrass maturity.

When to swath ryegrass? With spring seeded ryegrass beginning to turn from green to light brown, swathing will not be far off. The following ryegrass swathing research was conducted at the U of MN Magnusson Research Farm and at Rice Farms in 2014 (Table 2). The swathing decision is a balancing act, if ryegrass is cut too early (high seed moisture content) will shorten the seed filling time which leads to immature seeds and reduced seed size and weight. However, cutting too late (lower seed moisture) will reduce seed yield due to increased shatter in the swathing and harvesting operations. Data in Table 2 suggest that seed moisture content in the mid-30's was the optimum seed moisture to swath ryegrass. Significant seed yield losses occurred when ryegrass was swathed when the seed moisture content was over 40% or when seed moistures dropped into the high 20's.

Table 2. Ryegrass seed yield, seed moisture and test weight influenced by cutting date average over two small plot locations (Rice Farms and U of MN Mag Farm in 2014).

Sample Date	Seed Yield*	Seed Moisture**	Test Wt.***
	(% of the mean)	(%)	(#/bu)
7/30	96.9	46	28.5
8/1	93.8	43	29.2
8/3	107.5	40	29.3
8/5	110.2	38	29.9
8/7	121.7	34	30.1
8/9	93.9	28	31
8/12	88.8	26	31
LSD (0.05)	6.2		

*Mean seed yield U of MN Mag Farm = 1,368#/acre and Rice Farms 1,348#/acre

** Seed moisture determined by microwave oven

*** Clean seed test weights corrected to 12.5% moisture

PEST MANAGEMENT

Why all the armyworms in 2020? Armyworm moths are blown into the area on southerly winds. In June of this year southerly winds were recorded in 13 of 30 days for 43% of the time and the average daily maximum wind speed was 26.9 mph. These southerly winds bring army worm moths and rust pathogens which are two pests in perennial ryegrass seed production.

Armyworm caterpillars have been observed at the U of MN Magnusson Research Farm in both spring seeded ryegrass with wheat or late summer seeded ryegrass into fallow ground. It doesn't appear to be any difference in numbers of egg masses or caterpillars based on method of ryegrass establishment. It appears the most likely areas for armyworm moths to lay eggs are areas of lush vegetative growth and/or lodged areas in the field. Continue to scout for armyworms and, if needed, control caterpillars before swathing as worms will concentrate under ryegrass swaths and can cause economic ryegrass seed losses, but also harvesting losses due to the worms going through the combine.

Next week's newsletter will be released on July 21st