

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
July 21, 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 = 2,554 (Table 1)
- Last week (July 13-July 19) accumulated GDD = 260 (37.1/day)
- Average GDD for the third week of July = 239 (34.1/day)
- Average GDD for the fourth week of July = 234 (33.4/day)
- Projected GDD for the fourth week of July 2020 = 273 (39/day)
- Average temperatures for the fourth week of July = High 78F and low 53F
- Projected temperatures for the fourth week of July 2020 = High 79.1 and low 62.4F
- The new ten day forecast suggests a continuation of above average temperatures. The projected GDD accumulation of 39.4/day compared to the average of 33.4/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 1-19	746							
July		1,067	1,100	1,095	1,123	1,147	1,066	
Total	2,554	2,745	3,106	3,239	3,134	3,233	2,843	
*July 20-29	394							

* 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 6/day above the long term average. Several ryegrass fields have been swathed with more fields to be swathed this week. In general, spring seeded ryegrass fields are the first to mature, followed by late summer seeding in stubble followed by late summer seeding in fallow. Ryegrass fields that were burned this spring tend to be later to mature than fields that were not burned. It's important to closely monitor ryegrass fields as seed moisture levels can drop 1 to 3% points/day as seed moisture levels fall from the mid 40's to mid-30%. See the July 14th newsletter for a discussion on ryegrass seed moisture and swathing.

CROP MANAGEMENT

Since the week ending May 12th we have had 10 straight weeks of above average accumulations of GDD/day. Due to the cool April and early May of 2020, GDD accumulations in ryegrass were trending well below normal. However, in the last 10 weeks, GDD accumulations have ranged from +1.5 to +10/day above normal. This extended period of above average GDD accumulation has resulted in ryegrass swathing beginning approximately a week earlier than the long term average.

<u>Week Ending</u>	<u>GDD/Day Departure from Normal</u>
5/19	+10
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
7/19	+3

PEST MANAGEMENT

Previous research has shown the benefits of a growth regulator in perennial ryegrass seed production. Ryegrass seed heads that are upright tend to have more efficient pollination and have more air movement in the canopy which reduces the probability of leaf and head diseases. How about seed weight? Research conducted by Tretheway et.al covered up various portions of the perennial ryegrass plant during the seed filling period. The results are presented in Table 2. The results of this research indicate that the lowest seed weight was from plants that had the entire ryegrass seed head covered. This research highlights the importance of a growth regulator to keep the plant upright and fungicides to protect the ryegrass seedhead from full head extension through physiological maturity. One of the conclusions of this research was over 60% of the energy required to produce ryegrass seeds came from the seedhead and associated plant structures (spikelets, glumes, and peduncle).

Table 2. Influence of ryegrass 1,000 seed weight by shading various portions of the ryegrass plant (Tretheway et. al.).

<u>Treatment</u>	<u>TSW (grams)</u>
Stems wrapped	2.95
Heads wrapped	2.55
Flag leaf removed	3.06
Flag leaf attached	3.10
Unlodged tiller	3.10
LSD (0.05)	0.28

Next week's newsletter will be released on July 28th