

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
June 18, 2024**

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's will be tracked in the 2024 growing season with comparisons to the previous seven 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 is used for perennial ryegrass (T-Base = 32 F).

- Year to date GDD = 1,410 (Table 1)
- GDD last week (June 10 - 16) = 212; Long term average = 186
- GDD projected in next 10 days = 322 or 32.2/day (Table 1)
- Average GDD for the third week of June = 197 or 28.1/day
- The ten-day forecast suggests warmer than average temperatures for the fourth week of June. Projected GDD is 32.2/day compared to the long-term average of 30.3/day.

Table 1. Growing Degree Days (GDD), March - June 2017 to March - June 2024 near Roseau MN.

Year	2024	2023	2022	2021	2020	2019	2018	2017	2024 vs. 2023
March	0	0	0	131	30	0	0	90	0
April	296	93	95	236	183	211	184	458	+203
May	653	959	649	640	600	548	815	679	-306
June 1-16	461								
June		1,064	959	1,007	995	919	1,007	945	
Total		2,116	1,703	2,014	1,808	1,678	2,006	2,172	
*June 17-26	322								

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

Many perennial ryegrass fields are in the heading stage and will soon be shedding pollen. The recent thunderstorms with heavy wind driven rains often result in lodged areas in ryegrass fields. With dry weather lodged ryegrass tends to become more erect in a few days, especially if previously treated with a growth regulator.

SUMMER GRASS SEED FIELD TOUR – June 27

The annual grass seed summer tour is scheduled for June 27th with the field tour to begin at 5pm at the U of MN Magnusson Research Farm. Directions to the U of MN Magnusson Research Farm. At the intersection of MN Hwy 11 and 310, proceed north on MN 310 for two miles, turn left (west) on Roseau County 16 and proceed west for approximately three miles. The U of MN Research Farm is located on the north side of Roseau County 16.

Dr. Nancy Ehlke, U of MN grass seed breeder will provide an update on the U of MN ryegrass breeding program. Dr. Jacob Jungers will highlight potential new crops for NW MN. Donn Vellekson will lead a tour of the perennial ryegrass field trials to include: preemergence herbicides, fertility, postemergence herbicides and a perennial ryegrass variety trial.

CROP MANAGEMENT

Research in spring wheat has documented that the flag leaf is the primary contributor of photosynthate to fill the wheat head. That is why for maximum seed production it is critical to protect the flag leaf from leaf diseases. What about perennial ryegrass? What is the primary structure/s that supply photosynthate to the developing seed head? Research conducted by Tretheway et.al., evaluated seed weight (thousand seed weight) produced from various parts of the perennial ryegrass plant at full head extension. Ryegrass plant parts were covered during the seed filling period. The results of this research (Table 2) indicate the lowest seed weight was from plants that had the entire ryegrass seed head covered. A disease infestation like leaf and stem rust on the seed head will reduce the photosynthetic area. This research highlights the importance of timing a fungicide to protect the ryegrass seedhead from full head extension through physiological maturity. One of the conclusions of this research was that over 60% of the energy required to produce ryegrass seeds came from the seedhead and associated plant structures (spikelet's, 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

PEST MANAGEMENT

Armyworms

Field scouting has identified pockets of armyworm larvae. In addition to armyworm larvae, Brachnid wasp cocoons have been observed in perennial ryegrass fields. The Brachnid wasp is a beneficial insect which will kill the larvae by laying eggs in armyworm caterpillar. This beneficial insect is a good reminder that just because armyworm moths have been captured in a pheromone trap does not mean that we will see an outbreak of armyworms. Field scouting will determine the level of armyworm pressure in perennial ryegrass fields.

Crown Rust and Leaf & Stem Rust

Crown and leaf and stem rust are two leaf diseases that can cause economic yield losses in perennial ryegrass seed production. Crown rust pustules are orange in color while leaf and stem rust are red in color. In northern MN conditions we typically can see Crown rust after 1,500 and leaf and stem rust after the accumulation of 1,900 GDD. More on rust in next week's newsletter.

Next week's newsletter will be released on June 25th.