

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
June 27, 2023**

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's will be tracked in the 2023 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 is used for perennial ryegrass (T-Base = 32 F).

- Year to date GDD = 1,942 (Table 1)
- GDD last week (June 19-25) = 254; Long term average = 212
- GDD projected in next 10 days = 375 or 37.5/day (Table 1)
- Average GDD first week of July = 230 or 32.9/day
- The ten-day forecast suggests warmer than average temperatures for the first week of July. Projected GDD is 37.5/day compared to the long-term average of 32.9/day.

Table 1. Growing Degree Days (GDD), March - June 2017 to March - June 2023 near Roseau MN.

Year	2023	2022	2021	2020	2019	2018	2017	2023 vs. 2022
March	0	0	131	30	0	0	90	0
April	93	95	236	183	211	184	458	-2
May	959	649	640	600	548	815	679	+310
June 1-25	890							
June		959	1,007	995	919	1007	945	
Total		1,703	2,014	1,808	1,678	2,006	2,172	
*June 26-July5	375							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

The ten-day forecast indicates a continuation of the warming trend that began in mid-May. Perennial ryegrass fields continue to shed pollen which can be observed in mid-morning as puffs of dust rolling across a field.

SUMMER GRASS SEED FIELD TOUR – June 28

The annual grass seed summer tour is scheduled for June 28th 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 approximately 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. Donn Vellekson will lead a field tour of the various perennial ryegrass trials which includes: preemergence herbicides, fertility, growth regulator, postemergence herbicides and a perennial ryegrass variety trial.

CROP MANAGEMENT

With the extended hot dry weather many crops are showing signs of drought stress in gravel streaks, light textured soil, and other areas with shallow rooting depths. Perennial ryegrass in medium to heavy soil is holding up quite well. One of the questions asked is how deep are perennial ryegrass roots in the soil profile? The data below was collected in 2006 at the U of MN Magnusson Research Farm and suggests ryegrass rooting depth is at least 34 inches deep in the soil profile.

<u>Soil depth</u>	<u>Percent root dry matter</u>
0-6	75
6-12	9
12-18	7
18-24	3.6
24-34	5.5

PEST MANAGEMENT

Armyworms

Field scouting has identified low levels of armyworm larvae of various stages. Why do we see worms of various sizes? The data in Table 3 lists the number of days for armyworms to move through the six instar stages. It takes approximately 7-10 days for mating and eggs to hatch. In 2023, five distinct flights of moths have been documented. Depending upon when eggs were laid, we can predict the size of worms. Remember, insect growth and development are driven by temperature, so if daytime temperatures are warmer than averages the development will be faster than what is reported in Table 3. Armyworm eggs laid in the first week of June should be in the 3rd to 4th instar stages if conditions were favorable for larvae survival. Field scouting suggests that areas that had several thundershowers and rain in late May and into June have more armyworm larvae than areas that have been hot and dry. Lodged areas of fields are usually a favored location for armyworm larvae.

Table 3. Average number of days, corn foliage consumption and percent of total consumption of armyworm larvae at various instar stages. (Guppy et.al 1951)

Larval stage and size in (mm)	Number of days	Foliage consumption (mg)	Total foliage consumed (%)
1 st instar- 1.7	4.8	1	0.1
2 nd instar- 3.5	3.3	1.5	0.2
3 rd instar- 6.4	3.3	6	1.2
4 th instar-10	3.8	21	4.2
5 th instar-17.2	4.4	75	14.9
6 th instar-34.2	10.3	400	79.3
Total	29.9		

Next week's newsletter will be released on July 3rd.