

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
July 18, 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 = 2,601 (Table 1)
- GDD last week (July 10-16) = 197; Long term average = 243
- GDD projected in next 10 days = 369 or 36.9/day (Table 1)
- Average GDD the end of July = 334 or 33.4/day
- The ten-day forecast suggests warmer than average temperatures for the end of July. Projected GDD is 36.9/day compared to the long-term average of 33.4/day.

Table 1. Growing Degree Days (GDD), March - July 2017 to March - July 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	1,064	959	1,007	995	919	1007	945	+105
July 1-16	485							
July		1,104	1,174	1,179	1,067	1,100	1,123	
Total		2,807	3,188	2,987	2,745	3,106	3,233	
*July 17-26	369							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

The new 10-day forecast suggests warmer than average temperatures. Most of the ryegrass production area received thunderstorms with rain (some hail) last week. Perennial ryegrass fields in light textured soil that were grown with moisture deficit have been swathed. Other ryegrass fields are losing their green color and are beginning the dry down process. Ryegrass swathing in fields that had good soil moisture should begin later this week.

CROP MANAGEMENT

A few perennial ryegrass fields that were impacted by the lack of rainfall have been swathed. In other areas swathing is right around the corner. The decision on when to swath will be compounded this year by areas of moisture stress in areas of many fields. The following ryegrass swathing data is from the U of MN Magnusson Research Farm (Table 2). The swathing decision is a balancing act, not to cut the late-maturing seeds too early and the early-maturing seeds too late. When 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. Cutting too late (lower seed moisture) will reduce seed yield due to

increased shatter in the swathing and harvesting operations. Data in Table 2 suggests that ryegrass swathing in the mid-30's is the 'sweet spot'. Significant seed yield losses occurred when ryegrass was swathed when the seed moisture content was over 40% or when seed moisture levels dropped into the high 20's. Seed shatter can be reduced if swathing is conducted with dew on the plant foliage.

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

Late season rust has been observed at the U of MN Magnusson Research Farm in areas of perennial ryegrass not sprayed with a fungicide. Rust will not cause significant yield losses in perennial ryegrass fields that are turning brown and drying down. If the ryegrass field is still green and shedding pollen, a fungicide application may be management practice to consider.

The thunderstorms that moved through the area last week brought heavy rain that resulted in areas of the perennial ryegrass fields to lodge. Ryegrass that is lodged is a preferred location for armyworms. The armyworm trapping project in 2023 has documented five armyworm flights into the area in late May into July. Lodged ryegrass areas should be scouted before swathing for the presence of armyworms. If worms are detected in these lodged areas an insecticide treatment should be considered prior to swathing as if left unchecked these worms will concentrate under the swaths. Remember, it takes an average 4 days for armyworms to move through the six instar stages. Armyworm larvae that are over an inch long will soon pupate. If armyworms are one-half to one-inch-long, these are the ones that can cause considerable damage if the population is high (3-4/square foot). If armyworms are climbing up the ryegrass stem and cutting off the seed head an insecticide application may be warranted with fewer armyworms.

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