

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
July 11, 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 = 2,404 (Table 1)
- GDD last week (July 3-9) = 209; Long term average = 230
- GDD projected in next 10 days = 315 or 31.5/day (Table 1)
- Average GDD third week of July = 239 or 34.1/day
- The ten-day forecast suggests cooler than average temperatures for the third week of July. Projected GDD is 31.5/day compared to the long-term average of 34.1/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 1-9	288							
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 9-19	315							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

The new 10-day forecast suggests cooler than average temperatures. Perennial ryegrass fields are losing their green color and many areas of fields are turning brown. This brown color is most pronounced in light textured soil, compacted areas, and soils with shallow root profiles. The decision on when to swath ryegrass will be complicated this year by the accelerated ryegrass maturity due to lack of soil water in areas of these field.

CROP MANAGEMENT

The perennial ryegrass crop in 2023 is variable from short plants with low biomass production to fields that have average plant height and biomass production. The hot and dry weather in mid-May into June coupled with spotty rainfall are the primary factors in the reduction of ryegrass height and biomass production compared to what would be considered average. The shorter plant height and reduced biomass production will create a challenge in the swathing operation. In the last few years, disc cutters have been a popular swather choice in perennial ryegrass. However, with the reduced biomass, short plant height and lack of dew in the mornings the disc cutters may not be the best swather for the 2023 ryegrass crop.

The data in Table 2 is from Oregon State University and was obtained from on-farm strip trials.

Table 2. Perennial ryegrass seed yield and seed loss from various swather types operated in on-farm strip trials in Oregon. N.P Anderson, M. Goussard and B. Donovan, 2018.

Swather Type*	Seed Yield	Seed Loss	Seed Loss
	(#/acre)	(#/acre)	(%)
MD Single Auger	2,465 b	712 b	28.6 b
JD Double Auger	2,182 a	763 b	34.3 b
MD Draper	2,516 b	453 a	17.3 a
JD Rotary Disc	2,356 ab	630 b	27.6 b

*MD = MacDon; JD = John Deere

The above data was collected from on-farm strip trials conducted in Oregon and is the average of two sites the day the farmer cooperators would swath the field. Average seed moisture at swathing was 21.4%. The data collected, averaged over the two sites, suggest a difference in seed yield and seed loss based on the type of swather used in perennial ryegrass. The lower-case letters in Table 2 indicate no statistical difference, however if letters are different the values are different based on a statistical confidence level of (0.05). Data is limited from various swathers in perennial ryegrass in MN conditions. Several considerations for swathing the 2023 ryegrass crop in MN include:

- As swather width is reduced a short ryegrass plant may not produce a windrow that can be efficiently picked up with the combine
- The lack of biomass will result in more movement of the ryegrass plant from the swathing operation, especially traveling as speeds over 10 mph which will increase seed shatter.
- The lack of dew in the morning will result in more seed shatter, especially with more aggressive cutting operations.
- Ryegrass seed shatter increases as seed moisture moves from the mid-30's into the 20's.
- Wider swather widths, when operated at lower speeds, will produce a windrow that should be more efficiently be picked up with the combine.

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.

Isolated pockets of armyworm larvae have been observed in perennial ryegrass fields in the last couple of weeks. Remember, armyworm larvae that are over an inch long will soon pupate. If armyworms are in the ½ to ¾ 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.

In the last couple of weeks, no additional flights of armyworm moths have been detected.

Next week's newsletter will be released on July 18th.