

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
May 11, 2021**

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's will be tracked in the 2021 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 = 482 (Table 1)
- Last week (May 3-9) accumulated GDD = 69
- Average GDD for the first week of May = 104
- Projected GDD for the next 10 days = 245, or 24.5/day (Table 1)
- Average GDD for second week of May = 124, or 17.7/day
- The new 10 day forecast suggest a warming trend as projected GDD accumulation of 24.5/day compared to the long term average of 19.7/day.

Table 1. Growing Degree Days (GDD), March - May 2015 to March - May 2021 near Roseau MN.

Year	2021	2020	2019	2018	2017	2016	2015	2021 vs. 2020
March	131	30	0	0	90	38	119	+101
April	236	183	211	184	458	263	367	+53
May 1-9	115							
May		600	548	815	679	765	659	
Total	482	813	759	999	1,227	1,066	1,145	
*May 10-19	245							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

Last week was cool and accumulated 9.9 GDD vs the long term average of 14.9. The short term weather forecast suggest a warmup by mid-week with average accumulation of 24.5 GDD/day. With the forecasted warm temperatures, perennial ryegrass and weeds will grow at an accelerated pace.

U of MN Winter Hardiness Perennial Ryegrass Trials

Perennial ryegrass varieties are seeded into bare ground seeded in early September without a cover crop to determine a winter survival score. These ryegrass varieties are seeded into a “worse case” scenario to determine the ryegrass plants ability to survive the winter. The objective of this trial is two-fold: 1) assess the winterkill potential of perennial ryegrass lines and, 2) evaluate genetic variability in winter survival of perennial ryegrass varieties grown in the environmental conditions.

Perennial ryegrass seeded in the fall of 2020, at the St. Paul Campus, all survived the winter, even annual ryegrass which suggests a mild winter in St. Paul in 2020/21. However, in Roseau the situation was a bit different. None of the annual ryegrass survived the winter and most of the ryegrass varieties gave a winter survival score that ranged from 1-5 on a rating scale of 9 (100% dead) to 1 (good vigor and no stand reduction). The annual ryegrass had a score of 9, while the average of perennial ryegrass was of approximately 2.5 which would be a slight stand loss and a moderate reduction in vigor. A second rating will be taken in a couple weeks at Roseau.

CROP MANAGEMENT

The data in Table 2 lists the average onset of the various critical ryegrass growth stages based on accumulated GDD. This data is averaged over years, locations and planting dates of ryegrass fields grown in the environmental conditions of northern MN. These ryegrass plant stages will be referenced in future newsletters and will serve as a benchmark to help in the scheduling various field operations throughout the growing season.

Table 2. Perennial ryegrass growth stage as influenced by accumulated GDD, averaged over years, locations and planting dates near Roseau, MN.

<u>Plant Stage</u>	<u>GDD</u>
Greenup	100
Tillering	200
Early Jointing	700
Late Jointing	900
Early Heading	1,100
50% Heading	1,300
Pollen Shed	1,600
Swathing	2,700

As of May 8th, year-to-date accumulation of GDD was 482. The new 10 day forecast projects 245 GDD by May 19th for a projected year-to-date GDD total of 727. By the end of the new 10 day period look for spring seeded ryegrass to be in the early jointing stage with late summer seeded ryegrass still in the tillering stage.

PEST MANAGEMENT

Armyworms don't overwinter in the environmental conditions of northern MN. Armyworm moths are blown into the area on air currents found in the low level jet streams from southern states. In 2020, several perennial ryegrass fields had severe armyworm feeding damage. In 2021, armyworm moth traps will determine the arrival of armyworm moths into the area. These armyworm moth traps will also give an indication of the intensity and duration of armyworm moth flights into the perennial ryegrass growing regions of northern MN.

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