

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
June 30, 2020**

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's will be tracked for the 2020 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 = 1,719 (Table 1)
- Last week (June 22-28) accumulated GDD = 243 (34.7/day)
- Average GDD for the end of June = 212 (30.3/day)
- Average GDD for the first week of July = 230 (32.9/day)
- Projected GDD for the first week of July 2020 = 315 (45/day)
- Average temperatures for first week of July = High 76F and low 52F
- Projected temperatures for first week of July 2020 = High 86 and low 67.3F
- The new ten day forecast suggests a continuation of above average temperatures. The projected GDD accumulation of 43.7/day compared to the average of 33.8/day

Table 1. Growing Degree Days (GDD), March - June 2014 to March - June 2020 near Roseau MN.

Year	2020	2019	2018	2017	2016	2015	2014	2019 vs. 2020
March	30	0	0	90	38	119	0	+30
April	183	211	184	458	263	367	159	-28
May	600	548	815	679	765	659	654	+52
June 1-28	906							
June		919	1,007	917	945	941	964	
Total	1,719	1,678	2,006	2,244	2,001	2,086	1,777	
*June 29-July 8	437							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

The new ten day forecast suggests above average temperatures with projected GDD of 9.9/day above the average. With the warm daily high temperatures and the above average nighttime lows, coupled with the recent rainfall, ryegrass plants will grow at a rapid pace. Spring seeded ryegrass has been shedding pollen and is beginning the seed filling stage. When the ryegrass seedhead is fully emerged is a good time to apply the final fungicide to protect the seedhead from rust (see discussion in the crop management section). The seedhead in ryegrass is the primary source for photosynthate needed for optimum seed filling and test weight.

CROP MANAGEMENT

Historically, in northern Minnesota environments, crown rust has been observed after approximately 1,500 GDD and leaf and stem rust at 1,900 GDD. Year to date, we have accumulated 1,719 GDD (Table 1). The new 10-day forecast indicates we will soon be in the window for potential leaf and stem rust infestations. Rust spores that move into the area from the Gulf of Mexico got a slower start this year, thanks to a cold winter for most of the U.S. However, with the recent warm weather and strong southerly winds, rust spores can move long distances in a few days. Ryegrass is, or will soon have full head extension. The following are several strategies for rust control in ryegrass post heading:

- 1) Scout ryegrass fields for rust every two-to-three days. In favorable environmental conditions rust can increase rapidly and this fungal pathogen can “explode” in just a few days.
- 2) If a fungicide has been applied with a previous trip across the field, apply a fungicide when the last applied fungicide is about to “run out”. The number of days of disease protection will depend upon the fungicide used and product rate.
- 3) Spray a fungicide when ryegrass seedhead is fully extended. Historically, leaf and stem rust occurs at approximately 1,900 GDD. A full rate of a fungicide will provide rust protection for 21 to 28 days. A fungicide applied at 1,900 GDD should provide disease protection until ryegrass swathing (approximately 2,800 GDD).

The results in Table 2, are a summary of fungicide research conducted in northern MN. The results below are from eight site years from 2016-2019. Other fungicides were evaluated in one or two years and the results are available on the MN Turf Council web site: mnturfseed.org.

Table 2. Perennial Ryegrass Fungicide Yield Summary from 2016-2019.

Product	Additive	Rate/acre	*Yield (% mean)
Priaxor	NIS 0.25%	6 oz	105
Quilt Excel	COC 1%	14 oz	103
Folicur	NIS 0.25%	5 oz	97
Untreated	None	None	89

*Average ryegrass yield = 1,479#/acre

PEST MANAGEMENT

Armyworms moths have been observed in the area. Armyworms don't overwinter in northern MN and are blown up on southerly winds. Armyworms can cause economic losses in ryegrass seed production from leaf feeding, head clipping and feeding under swaths. The recent rains have caused some areas of ryegrass fields to lodge and these areas are an ideal spot for moths to lay eggs. Seagulls flying over and around ryegrass fields may be in indication of an insect infestation.

Grasshoppers can cause economic damage in ryegrass seed production. In our area, grasshopper emergence corresponds with the blooming of lilacs. Grasshoppers generally are a more of a problem in dry compared to wet years. In wet years a fungal pathogen acts as a biological control agent for grasshoppers. When scouting for grasshoppers, field edges are the first places to check as often times grasshoppers move in from surrounding areas into ryegrass fields. Grasshopper feeding on ryegrass can clip ryegrass seed heads which can be the cause of significant seed yield losses.

Next week's newsletter will be released on July 7th