

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
June 23, 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 = 1,476 (Table 1)
- Last week (June 15-21) accumulated GDD = 248 (35.4/day)
- Average GDD for the third week of June = 197 (28.1/day)
- Average GDD for the fourth week of June = 212 (30.3/day)
- Projected GDD for the fourth week of June 2020 = 248 (35.4/day)
- Average temperatures for fourth week of June = High 74F and low 49.7F
- Projected temperatures for fourth week of June 2020 = High 76.4F and low 58F
- The new ten day forecast suggests a continuation of above average temperatures. The projected GDD accumulation of 37.5/day compared to the average of 30.7/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 1-21	663							
June		919	1,007	917	945	941	964	
Total	1,476	1,678	2,006	2,244	2,001	2,086	1,777	
*June 22-July1	375							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

Last week the accumulated GDD was 248 (35.4/day) which is 7.3 GDD/day warmer than the long term average for the third week of June. The new ten day forecast suggests this warming trend will continue as the temperatures at the fourth week of are projected to be above average by 5.1 GDD/day. Further, the average low temperature will continue to be well above average. The average low temperature for the fourth week of June is 49.7 compared to the projected average low temperature of 58F. This is a difference of 8.3F/day which will promote rapid perennial ryegrass growth and development. Many spring seeded ryegrass fields will begin to shed pollen this week, while fall seeded and fields were burned this spring will be heading.

CROP MANAGEMENT

In the last couple weeks many locations have received two significant rainfall events in the ryegrass growing regions of Minnesota. Will these rain events impact nitrogen availability and uptake in perennial ryegrass? Plant tissue tests can provide some insight into this question. A plant tissue tests can give an indication of current nutrient status in ryegrass. The results in Table 2 was research conducted in 2018 in cooperation with Rice Farms. Ryegrass samples were taken on June 1, 2018 and sent to AGVISE Labs for processing. Critical level for nitrogen was in the 3.5% range and didn't appear to be limiting for ryegrass growth and development.

At this site sulfur was a limiting factor for plant growth and development. This data would suggest that an N: S ratio of greater than 24:1 could result in ryegrass seed yield reductions. The AMS treatment had more S, K and Mg than field rate of urea, or the added 26-0-0 to account for the nitrogen in the AMS. This data suggests tissue analysis can diagnose nutrient deficiencies in ryegrass seed production.

If tissue test are to be taken it's important to have paired samples of ryegrass plants. One sample should be from areas of the field that are green and healthy and the other from areas of the field that the plant growth is not as vigorous. If tissue samples suggest a nitrogen deficiency a postemergence application of 28% nitrogen can be applied to supplement nitrogen fertility in perennial ryegrass.

Table 2. The influence of supplemental nitrogen and sulfur on perennial ryegrass 'Evolution' seed yield and nutrient content at Rice Farms in 2018.

Added fertility*	Yield	N	P	K	S	Ca	Mg
	#/acre	-----%					
26-0-0-30s	1660	3.6	0.42	3.1	0.38	0.53	0.50
26-0-0	1342	3.4	0.40	2.6	0.14	0.48	0.42
None	1325	3.3	0.40	2.8	0.14	0.45	0.44
LSD (0.05)	139	NS	NS	0.4	0.07	NS	0.08

*Entire field received an 8-40-40 on 9/10/17 and a 110-0-0 on 5/6/18. Supplemental fertility applied on 5/11/18. Experimental design was a RCBD with three replications.

PEST MANAGEMENT

Leaf and stem rust has the potential to cause significant yield losses in perennial ryegrass. Crown rust is another disease that will infect ryegrass, but the yield losses are not as dramatic as from leaf and stem rust. Historically, crown rust leaf can be detected after the accumulation of 1,400 GDD and leaf and stem rust after 1,800 GDD. As of the current date, we have accumulated enough GDD's to be in the window for crown rust and by next week will have accumulated enough GDD's for leaf and stem rust. More on ryegrass rust control in next week's newsletter.

ISOLATION IN GRASS SEED CROPS

Depending upon the grass seed crop and type of certification, isolation areas may be required. Please contact your grass seed field man, or Kris Folland with MCIA for additional details.

Next week's newsletter will be released on June 30th