

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
May 9, 2018**

RYEGRASS GROWING DEGREE DAYS (GDD)

Ryegrass GDD will be tracked for the 2018 growing season with comparisons to the previous six years. A base temperature of 32 degrees F will be used for ryegrass (T-Base = 32 F). Reported GDD are based on the total accumulation from the beginning of the calendar year to the current date. Thus far in 2018, we have accumulated 300 GDD as of May 6th (Table1). The long term average temperatures for the first week of May indicates a daily high of 60.3 F and low temperature of 32.6 F, with an average GDD accumulation of 104, or 14.9/day. The current 10 day forecast suggest a continued warming trend with projected daily highs in the high 60's to low 70's and lows in the high 30's to mid-40's. If this forecast holds true, the accumulated GDD for the next ten day period will be 248 GDD, or 24.8/day.

Table 1. Growing degree days (GDD), March & April 2011 to March & April 2017 near Roseau MN.

Year	2018	2017	2016	2015	2014	2013	2012	2018 vs. 17
March	0	90	38	119	0	0	304	-90
April	184	258	263	367	159	80	370	-74
May		679	765	659	654	640	726	
May 1-6	116							
Total	300	1,027	1,066	1,145	813	720	1,400	
*May 7-16	248							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

With the recent warm weather, perennial ryegrass fields are beginning to green-up. Field observations suggest the majority of the spring seeded ryegrass appears to have survived the winter. However, additional time will be required to make a stand assessment of perennial ryegrass seeded in the fall, or ryegrass that didn't have an established crown going into winter.

U of MN Winter Hardiness Perennial Ryegrass Trial

Each year the U of MN conducts a perennial ryegrass winter hardiness trial at the U of MN Magnusson Research Farm. The objective of this trial is twofold; 1) assess the winter kill potential for perennial ryegrass, and 2) evaluate genetic variability of various perennial ryegrass varieties. This trial is seeded into fallow ground in the late summer and does not have a cover crop which is a worst case scenario for winter survivability. The fall 2017 seeded ryegrass lines all died (didn't survive the winter) which is an indication of the importance of a cover crop to catch snow. Without stubble to catch snow, ryegrass fields tend to blow clean which exposes the ryegrass crown to freeze thaw conditions.

PEST MANAGEMENT

Dandelions are beginning to flower on the south side of buildings and would expect to see full bloom by this weekend (Mother's Day). This is a good reminder to scout fields, especially those that didn't receive a broadleaf treatment last fall. Winter annuals and cool season perennial weeds grow fast and now would be a good time to scout ryegrass fields for these weeds.

CROP MANAGEMENT

Now that perennial ryegrass fields are beginning to green-up and with the projected increase in daily temperatures, now would be a good time to talk to your grass seed fieldman and agronomists to determine a timeline for plant food applications in ryegrass. In most soil types the frost is out of the ground and the fields are beginning to firm up which will allow the application of fertilizer without rutting up the fields.

When should nitrogen be applied in perennial ryegrass grown for seed production? That answer will depend upon production practices, labor and equipment constraints, field conditions and the source of nitrogen applied. In the environmental conditions of northern MN, perennial ryegrass goes through three distinct phases in the uptake and utilization of nitrogen from the soil.

- **Phase 1 - Slow nitrogen uptake - up to approximately 700 GDD**
- **Phase 2 - Rapid nitrogen uptake - 700-1,300 GDD**
- **Phase 3 - Nitrogen redistribution- greater than 1,300 GDD**

Thus far in 2018, we have accumulated 300 GDD. Previous fertility research in perennial ryegrass suggests that if some nitrogen was applied in the fall, spring nitrogen applications can be delayed until approximately 700 GDD without yield consequence. In a spring only nitrogen application program, nitrogen should be applied earlier (up to 500 GDD) as ryegrass may show symptoms of nitrogen stress without nitrogen in the root zone. Ideally, rainfall after spring applications of fertilizer will assist the movement of nitrogen into the ryegrass root zone. The current 10 day forecast indicates an average GDD accumulation of 24.8/day. Based on most recent weather information, we will accumulate 500 GDD in 8 and 700 GDD in 16 days.

The U of MN scientists have conducted nitrogen fertility research in perennial ryegrass for several years. Summary of these results include:

- Fall application of P & K and 30-50 pounds of nitrogen after wheat harvest the fall
- P & K only in fall seeded, or prevent planted ryegrass
- Harrow straw to incorporate fertilizer and distribute wheat straw
- Spring applied nitrogen based on yield goal, but 140 pounds has given consistent results
- Positive ryegrass yield response observed from 15% ESN and 85% urea
- If possible schedule applications of spring fertilizer before a rain. If no rain in forecast, consider the use of a nitrogen stabilizer and/or rolling fields to help move nitrogen to the soil
- If soil test for P is in the low to medium range, additional P (40 pounds) in the spring has shown ryegrass seed yield increases compared to no additional P
- Grass seed research summaries and individual reports can be found on the web at the link below.

U of MN Research Reports

Grass Seed research results are available on the web. Research reports from 1967 to 2017 can be found on the web: http://www.mnturfseed.org/html/progress_reports.html

Next week's newsletter will be released on May 16th, 2018.