

**MINNESOTA TURF SEED COUNCIL  
NEWSLETTER  
April 30, 2019**

**RYEGRASS GROWING DEGREE DAYS (GDD)**

Ryegrass GDD will be tracked for the 2019 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, after snow has melted from ryegrass fields, to the current calendar date.

Thus far in 2019, we have accumulated 204 GDD as of April 28<sup>th</sup> (Table1). The current 10-day forecast projects a cool down in temperatures with daily highs in the mid 50's to the mid 40's and lows in the low-to-high 30's. If this forecast holds true, the accumulated GDD for the next ten-day period will be 118 GDD, or 11.8/day. The long-term average temperatures for the second week of May has a daily high of 62.9 F and low temperature of 36.1 F, with an average GDD accumulation of 124, or 17.7/day.

Table 1. Growing degree days (GDD), March & April 2013 to March & April 2019 near Roseau MN.

<b>Year</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2019 vs. 18</b>
March	0	0	90	38	119	0	0	0
April		184	458	263	367	159	80	
April 1-28	204							
Total		184	548	301	486	159	80	
*April 29 - May 8	118							

\* 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. Early observations indicate the majority ryegrass (spring or fall seeded) appears to have survived the winter.

**U of MN Winter Hardiness Perennial Ryegrass Trial**

Each year a perennial ryegrass winter hardiness trial is conducted 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, without a cover crop which is a worst-case scenario for ryegrass winter survivability. Perennial ryegrass lines seeded in the fall of 2018 have a 100% stand. This is an indication that the winter conditions of 2018-19 were favorable to overwintering of perennial ryegrass.

**PEST MANAGEMENT**

As GDD's accumulate, the growth and development of biennial weeds will proceed at a rapid pace. As average daily temperatures increase, herbicide applications for broadleaf weeds will be right around the corner! This is especially true if a broadleaf herbicide was NOT applied last fall as winter annuals (dandelion, shepardspurse, and cockle) are green, actively growing and will bolt in a few weeks. Cool season annual weeds (volunteer canola, mustard, and smartweed) are first to emerge in the spring. Weeds can grow at a rapid pace and regular scouting is essential to determine the best weed control program for your situation.

## **CROP MANAGEMENT**

Soil temperature of 40F is a good indicator of the beginning of the growing season (Table 2). In 2019, 40F soil temperature was recorded in black ground on April 16<sup>th</sup> and in sod conditions on April 24<sup>th</sup>. The black ground soil temp would be similar to a late summer seeding of ryegrass in prevent plant or fallow, while temps in sod conditions would be similar to ryegrass in wheat stubble. It's interesting to note that in the 10-year period (2010-2019) the average number of days between bare and sod ground was 11.2 days, while the number of days between the 40-degree temperature in tilled and turf conditions ranges from 1 day in 2016 to 20 days in 2014. This year we are close to the average of 8 days difference between when the first 40-degree mark was recorded in tilled and turf conditions.

Table 2. Calendar date of 40F soil temperature, (4-inch depth) in black ground and sod conditions, near Roseau in a 10-year period from 2010 to 2019.

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Black	4-16	4-20	3-30	4-14	3-31	4-19	5-4	3-12	4-8	3-30
Sod	4-24	4-29	4-13	4-15	4-15	5-9	5-7	3-23	4-23	4-13
Difference	8	9	15	1	16	20	3	11	15	14

## **SPRING RYEGRASS FERTILITY**

Last week's newsletter touched the basic concepts for fertility management in perennial ryegrass.

Below are several management practices (BMP's) for perennial ryegrass spring fertility management.

- Spring applied nitrogen should be applied prior to 500 GDD's with no previous nitrogen and up to 700 GDD if a modest amount of nitrogen was applied in the fall
- Delay applications of spring nitrogen until the frost has come out of the ground and the fields have firmed up to decrease the chances of rutting the field with heavy equipment
- Early May forecast suggests we will be close to the average GDD accumulation of 17.7/day. To reach 500 GDD will take approximately 17 days and 700 GDD in 28 days
- Spring applied nitrogen should be based on yield goal, but 140 pounds of nitrogen has given consistent results after a good wheat crop with average residue. Nitrogen rate should be reduced in PP situations, high residual N, or if a below average wheat crop was harvested
- Positive ryegrass yield response observed from 15% ESN and 85% urea
- If soil tests low in sulfur, has course texture, or heavy residue consider a supplemental application of AMS with spring nitrogen
- 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
- If plants show nitrogen stress mid-season, perennial ryegrass is tolerant to foliar 28% nitrogen

## **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](http://www.mnturfseed.org/html/progress_reports.html)

Next week's newsletter will be released on May 7<sup>th</sup>, 2019.