

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
April 18, 2017**

INTRODUCTION

Welcome to the first edition of the Northern Minnesota Turf Seed Growers Newsletter for 2017. The primary objective of this newsletter is to report on weather conditions, crop growth & development, pest management and to chart year-to-date perennial ryegrass growing degree days (GDD) compared to the previous six years. The newsletter is scheduled for weekly distribution from the beginning of ryegrass green-up through swathing. Special alerts will be sent as pest infestations dictate or production problems arise during the growing season.

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RYEGRASS GROWING DEGREE DAYS (GDD)

Ryegrass GDD will be tracked for the 2017 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 2017, we have accumulated 274 GDD as of April 15th (Table1). The long term average GDD accumulation for March is zero. In the last few years, warmer March temperatures have resulted in GDD accumulation in March. In fact, in 5 of the past 7 years, GDD accumulation in March has been above the long term average of zero.

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

Year	2017	2016	2015	2014	2013	2012	2011	2017 vs. 16
March	90	38	119	0	0	304	7	+52
April		263	367	159	80	370	278	
April 1-15	184							
Total	274	301	486	159	80	674	285	
April 16 to 25	122							

* Forecasted GDD at Roseau for the next 10 days.

The long term average GDD for the first and second week of April is 1.1 and 6.3/day, respectively. In 2017, actual accumulated GDD for the first and second week of April was 10.7 and 13.0/day, respectively. At the end of April, in the Roseau area, long term weather records indicate daily highs of 56.6 F and daily lows of 31.1 F for an average of 12 GDD/day. The ten day forecast suggests normal temperatures of 12.2 GDD/day. Forecast for the last week of April suggest warmer than average temperatures with an accumulated GDD of 19 GDD/day.

GENERAL CROP CONDITION

The 2017 season appears to be one of significant leaf and tissue desiccation in ryegrass. After the snow melted, much of the above ground ryegrass leaf tissue was green. However, in the first two weeks of April, nightly low temperatures below freezing were recorded on 8 of 9 days. Further, recorded low temperatures in this 9 day stretch was: 18, 20, 26, 26, 27, 27, 31 and 32 degrees. These cold temperatures resulted in significant browning of the ryegrass leaf tissue. Ryegrass plants with healthy crowns will be able to regenerate new growth from the crown. However, if the ryegrass crown is weak, damaged from water ponding, late summer seeding, or lack of snow cover these plants may not be able to recover. Field scouting will determine the level of ryegrass crown injury.

CROP MANAGEMENT

Soil temperature of 40F is a good indicator of the beginning of the growing season (Table 2). In 2017, 40F soil temperature was recorded in black ground on March 30th and in sod conditions on April 13th. Black ground, most likely, would be similar to a late summer seeding of ryegrass in fallow or prevent planted situations, while sod conditions would be similar to ryegrass in wheat stubble. It's interesting to note that in 2016 the difference between bare and sod ground was only one day. However, in 2017, the difference between black ground and sod was two weeks (15 days).

Table 2. Calendar date of 40F soil temperature, (4 inch depth) in black ground and sod conditions, near Roseau in 2008 to 2017.

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Black	3-30	4-14	3-31	4-19	5-4	3-12	4-8	3-30	4-14	4-15
Sod	4-13	4-15	4-15	5-9	5-7	3-23	4-23	4-13	4-29	4-18
Difference	15	1	16	20	3	11	15	14	15	3

Herbicide Carryover

What is the herbicide carryover potential of Nortron, 2, 4-D or Banvel applied to ryegrass last fall, if the ryegrass crop winterkilled? A plant back trial was conducted in 2013 at the U of MN Magnusson Research Farm. Crops evaluated included: canola, soybeans and wheat. Herbicides were applied to wheat stubble on 9/30/12. The entire area was tilled on 5/25/13 and seeded to canola, soybeans and wheat on 5/26/13. Crop injury scale 1 = none to 9 = severe damage. Plant back crops were not harvested, but a visual crop injury observations made on 7/11/13. Visual ratings of 3 or less would be unlikely to reduce crop yields. Crop injury ratings were below a 3 from Nortron at 2 pints and Banvel+2, 4-D amine at 1 pint/acre for soybeans and wheat. Canola had an injury rating of 4.0 from Nortron at the 2 pint rate and seemed to be a riskier plant back option. Nortron at 2X rate (4 pints) resulted in crop injury of 5.0, 5.3 and 6.3 to wheat, soybeans and canola, respectively and likely would have caused yield reduction on all crops tested. The conclusion of this trial was soybeans or wheat were an acceptable plant back options when normal use rate of either Nortron, 2, 4-D, or Banvel were applied to a ryegrass crop in late fall.

Full report of the information can be found at the link below.

U of MN Research Reports

Grass Seed research results are available on the web. Research reports from 1967 to 2016 can be found on the web: http://www.mnturfseed.org/html/progress_reports.html

Next week's newsletter will be released on April 25th, 2017.