

**MINNESOTA TURF SEED COUNCIL  
NEWSLETTER  
April 20, 2021**

**INTRODUCTION**

Welcome to the first edition of the Northern Minnesota Turf Seed Growers Newsletter for 2021. The primary objective of this newsletter is to report on weather conditions, crop growth & development, pest management and chart the year-to-date perennial ryegrass growing degree days (GDD) compared to the previous six years. This newsletter is scheduled for weekly distribution from the beginning of ryegrass green-up through swathing.

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**PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)**

Perennial ryegrass GDD's will be tracked in the 2021 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).

Formula to calculate GDD:  
$$\frac{(\text{Daily High Temp}) + \text{Daily Low Temp} - 32}{2}$$

Thus far in 2021, we have accumulated 282 GDD's as of April 18<sup>th</sup> (Table1).

Table 1. Growing Degree Days (GDD), March - April 2015 to March - April 2021 near Roseau MN.

<b>Year</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2021 vs. 2020</b>
March	131	30	0	0	90	38	119	+101
April		183	211	184	458	263	367	
April 1-18	151							
Total	282	213	211	184	548	301	486	
*April 19-28	75							

\* Forecasted GDD at Roseau for the next 10 days.

**GENERAL CROP CONDITION**

Thirteen of the first 20 days of March had daily high temperatures that ranged in the low 40's to the high 50's. The result of these temps was a rapid melt of the snow pack. Perennial ryegrass plants exhibited green foliage after the snow melted. Since mid-March, we have had 12 days of temps in the low to mid 20's. Further, in this same timeframe we have had three days of low temps in the teens to single digits. These low temps have had a desiccation effect on the foliage of the ryegrass plant. Plants that were green are now showing a fair amount of dead leaf tissue. Several ryegrass plants have been dug to examine the crowns. Plants that were dug show a well-established root system, white in color which usually is an indication of a healthy crown region. What will this leaf desiccation mean to ryegrass growth and development? Ryegrass coming out of dormancy is more of a gradual process, not like the flipping of a switch. A better assessment of ryegrass winter survival will be made after a return to daily high temps in the 40's into the 50's.

## **CROP MANAGEMENT**

A review of the critical soil temperatures for perennial ryegrass growth and development may be of interest with the recent warm weather followed by cold temperatures. The following information is based on soil temperatures at a 4 inch depth that had air in the soil pore spaces (not waterlogged).

90F - Shoot growth ceases

77F - Root growth ceases

70F - Maximum temperature for expansion of root growth

60-75F - Optimum temperatures for shoot growth

50-65F - Optimum temperatures for root growth

40F - Shoot growth ceases

33F - Root growth ceases

20F - Low temperature that will kill plants if temperatures drops rapidly below 20F

The North Dakota Weather Network (NDAWN) has weather recording stations distributed state-wide in North Dakota and in Northwest MN. In the last 30 days, the average soil temperatures in bare soil was 39F compared to 35F in turf conditions recorded at the Magnusson Research Farm. Perennial ryegrass seeded in wheat stubble would be similar to turf conditions as much of the sunlight would be reflected by wheat stubble. Perennial ryegrass plants should begin to grow with the return to more seasonal temperatures later in the week which will allow a better assessment of perennial ryegrass winter survival.

## **PEST MANAGEMENT**

It may seem early to be thinking about weed control, but a couple considerations for early season weed control include; Nortron and winter annual weed control. Nortron has been successfully used for control of annual bluegrass and foxtail barley. Nortron appears to be more effective when applied early and if activated by moisture. One strategy to consider would be make an application of Nortron on field edges as that is the most likely place to see annual bluegrass.

Winter annuals have a rapid growth rate and for optimum weed control an early application (pre-bolt) is needed. This is especially true if a broadleaf herbicide was not applied last fall. If allowed to grow unchecked last fall, these winter annuals (cockle, shepardspurse, field pennycress, dandelion) will have a well-developed rosette of leaves near the soil surface and it seems as soon as the snow melts they begin to grow. For most effective weed control, broadleaf herbicides should be applied before the winter annuals begin to bolt.

Next week's newsletter will be released on April 27<sup>th</sup>.