MINNESOTA TURF SEED COUNCIL
NEWSLETTER
April 25, 2018

INTRODUCTION

Welcome to the first edition of the Northern Minnesota Turf Seed Growers Newsletter for 2018. 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 2018 growing season with comparisons to the previous six years. In northern MN, the accumulation of GDD is triggered after the snow has melted from perennial ryegrass fields. The base temperature for ryegrass is 32 degrees F (T Base = 32 F)

Formula to calculate GDD:

$$\frac{(\text{Daily High Temp} + \text{Daily Low Temp}) - \text{T base}}{2}$$

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 62 GDD as of April 22nd (Table1). In much of the region, the North Dakota Agricultural Weather Network (NDAWN) has recorded temperatures of 20-30 degrees below normal. The short term forecast suggests a significant warming trend as we will accumulate more GDD in the next 7 days than we have accumulated for the entire year!

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

Year	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2017 vs. 17**
March	0	90	38	119	0	0	304	-90
April		458	263	367	159	80	370	
April 1-22	62							
Total		548	301	486	159	80	674	
*April 23 to May 2	204							

* Forecasted GDD at Roseau for the next 10 days.

For the last week of April, the average daily high and low temperatures are 56.6 and 31.1 F, respectively. Further, the average GDD accumulation will be 12.3 GDD/day. The current ten day forecast suggests above average temperatures and the accumulated GDD of 20.4/day (204 GDD for the 10 day period).

GENERAL CROP CONDITION

The 2018 season appears to be one of significant leaf and tissue desiccation in perennial ryegrass. If the ryegrass crown is healthy, green leaf tissue will be observed with the removal of the dead leaf tissue. Further, when ryegrass crowns are removed from the ground, white root tissue will be observed as the crowns are pulled or dug from the soil. Ryegrass plants with healthy crowns will be able to regenerate new growth from this crown region. However, if the ryegrass crown is weak, damaged from water ponding, late summer seeding, or lack of snow cover these plants will be slow to recover and if the damage is severe, will result in stand loss. Field scouting will determine the level of ryegrass crown injury.

CROP MANAGEMENT

The data in Table 2 lists the average onset of a perennial growth stage based on the accumulation of GDD. The data presented is averaged over years, locations and planting dates from perennial ryegrass fields in the Roseau area.

Table 2. Perennial Ryegrass Growth Stage by Accumulated GDD

Plant Stage	**GDD**
Greenup	100
Tillering	300
Early Jointing	700
Late Jointing	900
Early Heading	1,100
50% Headed	1,300
Pollen Shed	1,600
Swathing	2,700

The data in Table 2, will be referenced in future newsletters. The GDD information will serve to benchmark perennial ryegrass growth stages which can be used in scheduling various field activities throughout growing season.

Next week's newsletter will be released on May 2nd, 2018.