

**MINNESOTA TURF SEED COUNCIL  
NEWSLETTER  
April 28, 2020**

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

Perennial ryegrass GDD's will be tracked for the 2020 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).

- Year to date GDD = 140 (Table 1)
- Last week (April 20-26) accumulated GDD = 71 (10.1/day)
- Average GDD for the end of April =86 (12.3/day)
- Projected GDD for the next 10 days = 191 (19.1/day)
- Average GDD for first week of May = 104 (14.9/day)
- The new ten day forecast suggests more GDD will be accumulated (191) than the total accumulated GDD, year-to-date (140)

Table 1. Growing Degree Days (GDD), March - April 2014 to March - April 2020 near Roseau MN.

<b>Year</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2019 vs. 2020</b>
March	30	0	0	90	38	119	0	+30
April		211	184	458	263	367	159	
April 1-26	110							
Total	140	211	184	548	301	486	159	
*April 27-May 6	191							

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

**GENERAL CROP CONDITION**

April of 2020 continues to be cooler than the long term average. However, the new ten day forecast suggests a warming trend with a projected GDD accumulation of 19.1/day compared to the average of 14.9/day. Frost is making its way out of the ground as dry soil surfaces during the day are replaced by wet and even ponded water by morning. Frost depths at the U of MN Magnusson Research Farm as of April 26<sup>th</sup>; 3-5 inches in fine fescue sod, 8 to 10 inches in wheat stubble and 14-18 inches in soybean stubble.

Perennial ryegrass plants are beginning to break winter dormancy and are beginning to green-up. Ryegrass plants breaks dormancy in more of a gradual than a rapid process compared to other grasses. Several factors influence the speed in which perennial ryegrass breaks dormancy. These factors include: variety, size of crown going into winter, time of seeding (spring or fall), the amount of residue on soil surface, soil moisture content and temperature. With the projected warm temperatures and frost coming out of the ground, ryegrass plants will continue the green-up process which in a few days will allow a better assessments of perennial ryegrass stands and winter survival.

## **CROP MANAGEMENT**

The data in Table 2 lists the average onset of the various critical ryegrass growth stages based on accumulated GDD. This data is averaged over years, locations and planting dates of ryegrass fields grown in the environmental conditions of northern MN. These ryegrass plant stages will be referenced in future newsletters and will serve as a benchmark to help in the scheduling various field operations throughout the growing season.

Table 2. Perennial ryegrass growth stage as influenced by accumulated GDD, averaged over years, locations and planting dates near Roseau, MN.

<b><u>Plant Stage</u></b>	<b><u>GDD</u></b>
Greenup	100
Tillering	200
Early Jointing	700
Late Jointing	900
Early Heading	1,100
50% Heading	1,300
Pollen Shed	1,600
Swathing	2,700

Previous fertility research indicates that if 30-50 units of nitrogen was applied in the fall, perennial ryegrass yields were not reduced if the applied nitrogen was in the root zone by 700 GDD. In a spring only nitrogen application program, the nitrogen should be applied earlier than if some fall nitrogen was in the rooting zone. A spring only nitrogen program should have the nitrogen in the ryegrass rooting zone by 500 GDD.

As of April 26<sup>th</sup>, year-to-date accumulation of GDD was 140. The new 10 day forecast projects 191 GDD by May 6<sup>th</sup> for a projected year-to-date GDD total of 331. The long term average GDD for the second week of May is 17.7/day. If no nitrogen was applied last fall spring nitrogen should be in the root zone by the second week of May and if fall nitrogen was applied by the end of the third week of May.

## **PEST MANAGEMENT**

With the recent cold weather plant growth generally has been very slow. This is about to change as warm temperatures arrive later in the week. Winter annuals will be the first week species observed when scouting ryegrass fields. If a broadleaf herbicide was not applied last fall these fields should be one of the first scouted for broadleaf weed, especially winter the annuals. For most effective weed control, broadleaf herbicides should be applied before the winter annuals begin to bolt. Often times winter annuals will begin to bolt before many of the warm season broadleaf weeds germinate and grow. In this scenario, a split application strategy for broadleaf weed control should be a strong consideration as winter annual control is more effective when the herbicides are applied prior to the bolting stage.

Next week's newsletter will be released on May 5<sup>th</sup>.