

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
May 12, 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 = 316 (Table 1)
- Last week (May 4-10) accumulated GDD = 60 (8.6/day)
- Average GDD for the second week of May = 124 (17.7/day)
- Projected GDD for second week of May 2020 = 111 (15.9/day)
- Average temperatures for second week of May = High 62.9F and low 36.1F
- Projected temperatures for second week of May 2020 = High 57F and low 37.8F
- The new ten day forecast suggests a return to normal temperatures with a projected accumulated GDD of 19.4/day compared to the average of 19.6/day

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

Year	2020	2019	2018	2017	2016	2015	2014	2019 vs. 2020
March	30	0	0	90	38	119	0	+30
April	183	211	184	458	263	367	159	-28
May		548	815	679	765	659	654	
May 1-10	103							
Total	316	759	999	1,227	1,261	1,145	813	
*May 11-20	194							

* Forecasted GDD at Roseau for the next 10 days.

Lake of the Woods – Ice-Out Date

The date when lakes are free of ice (ice-out date) is an indication of the “earliness” or “lateness” of spring. In 2020, the ice-out date on Lake of the Woods was May 2nd which is one day earlier than the median date of May 3rd (Table 2). The earliest recorded ice-out date is April 8th in 2012. The latest ice-out date was recorded on May 21st in 2014. It is interesting to note that the earliest and latest ice-out date on record are only two years apart in 2012 and 2014.

Table 2. Ice out date on Lake of the Woods from 2009 to 2020.

2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
May 2	May 14	May 14	April 24	May 4	May 3	May 21	May 15	April 8	May 5	April 13	May 8

*Median ice-out date for Lake of the Woods is May 3rd (MN DNR Website)

GENERAL CROP CONDITION

Last week was cold for the first week of May. With the limited GDD accumulation and several nighttime low temperatures in the mid-20's perennial ryegrass growth and development has been slow. The return to normal temperatures forecasted for later this week should promote tillering and a return to more normal growth and development in ryegrass.

CROP MANAGEMENT

The last couple weeks has been a busy one for fertilizer applications in perennial ryegrass. At a minimum, a quarter inch of rain is needed to move the applied urea into the root zone. With surface applied urea on the soil surface and limited rainfall, one of the questions being asked is how much nitrogen has been lost? Soil temperature is one of the factors that can influence nitrogen volatilization into the atmosphere. The data in Table 3 is research conducted by Overdahl, et al., in 1987. This research suggests that when soil temperatures are low (45F) nitrogen losses to volatilization was 6% after 10 days. As would be expected, as the soil temperature increases the percent nitrogen lost increased. Soil temperature data from the NDAWN station last week ranged from the high 40's in bare ground and low 40's for sod conditions recorded at the U of MN Magnusson Research Farm.

Table 3. Percent of surface applied urea volatilized as ammonia as influenced by soil temperatures and the number of days urea was left on the soil surface.

Days	Soil temperature in degrees F			
	45	60	75	90
	-----% nitrogen losses to volatilization -----			
0	0	0	0	0
2	0	0	1	2
4	2	2	4	5
6	5	6	7	10
8	5	7	12	19
10	6	19	14	20

*Source: Overdahl, et al., 1987

PEST MANAGEMENT

With the cold temperatures last week not much change has been observed in weed growth and development. Winter annuals are in the rosette stage and some of the leaves are purple in color which is an indication of sugar accumulation, most likely, due to the cold weather. Field pennycress, cockles, green flower pepper weed, clover spp. and dandelion in the rosette stage. However, dandelions on the south sides of buildings are beginning to show the characteristic yellow flower. With a few days of warm temperatures annual weeds will emerge and winter annuals will enter a rapid growth phase and begin to bolt. Dicamba and 2, 4-D is a standard broadleaf tankmix for broadleaf control in ryegrass. Weather forecast suggests a warming trend beginning mid-week with nighttime low temps well above freezing. Previous research has indicated that herbicide activity is maximized when broadleaf weeds are in a rapid growth phase a few days prior to and after herbicide applications.

Next week's newsletter will be released on May 19th.