

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
May 16, 2023**

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's will be tracked in the 2023 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 is used for perennial ryegrass (T-Base = 32 F).

- Year to date GDD = 502 (Table 1)
- GDD last week (May 8-14) = 197; Long term average = 124
- GDD projected in next 10 days = 310 or 31/day (Table 1)
- Average GDD third week of May = 151 or 21.6/day
- The ten-day forecast suggests warmer than average temperature for the third week of May. Projected GDD is 31/day compared to the long-term average of 21.6/day.

Table 1. Growing Degree Days (GDD), March - May 2017 to March - May 2023 near Roseau MN.

Year	2023	2022	2021	2020	2019	2018	2017	2023 vs. 2022
March	0	0	131	30	0	0	90	0
April	93	95	236	183	211	184	458	-2
May1-14	409							
May		649	640	600	548	815	679	
Total		744	1,007	813	759	999	1,227	
*May 15-124	310							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

Perennial ryegrass plants with healthy crowns are in the tillering stage. Ryegrass plants that had small crowns last fall, or experienced cold temperatures due to reduced snow cover, water ponding, ice sheeting or other environmental stress will need additional time to access the degree of winter survival.

The U of MN conducts a perennial ryegrass winter hardiness trial each year to determine the severity of winter based on the degree of ryegrass winterkill. This trial is seeded, in early September, at the U of MN Magnusson Research Farm into fallow conditions which would be considered a worst-case scenario. Ratings taken last week indicate that all ryegrass lines survived the winter which is an indication of limited ryegrass winterkill in the winter of 22/23. With the recent warmer than average temperatures, this week should provide a good opportunity for field level ryegrass stand assessments.

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 2023, the ice-out date on Lake of the Woods was May 13th which is ten days later 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 recorded ice-out on Lake of the Woods are only two years apart in 2012 and 2014.

Table 2. Ice out date on Lake of the Woods from 2011 to 2022.

2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
May 13	May 16	April 23	May 2	May 14	May 14	April 24	May 4	May 3	May 21	May 15	April 8

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

Lake Bronson in Kittson County recorded an ice out date of May 1st, 2023. The median ice out date is April 16.

CROP MANAGEMENT

In the last couple of weeks, fertilizer applications in perennial ryegrass proceeded at a rapid pace. At a minimum, a quarter inch of rain is needed to move the applied urea into the root zone. With the spotty rain showers in early May, one of the questions 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 increased the percent nitrogen lost also increased. Soil temperature data from the NDAWN station last week ranged from the mid-50's to low 60's in bare ground and high 40's to mid-50's in sod conditions recorded at the U of MN Magnusson Research Farm.

Table 3. The percentage 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

Many winter annual weeds are bolting, clovers are growing well, and dandelions are flowering. Cool season annual weeds emerging include wild buckwheat, wild mustard, wild oats, smartweeds and common lambsquarters. Warm season weeds will soon begin to emerge (barnyardgrass, pigweeds, green and yellow foxtail), which creates a dilemma for full season weed control in perennial ryegrass. If broadleaf control was not applied last fall, now would be a good time to scout fields to determine the type of weeds present and growth stage of these weeds. If field scouting indicates winter annuals are present, now would be a time to get these fields sprayed before bolting and flowering is complete in these winter annual weeds. A second application for broadleaf weed control may be necessary depending upon the level of infestation of warm season broadleaf weeds.

Next week's newsletter will be released on May 23rd.