

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
April 30, 2024**

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's will be tracked in the 2024 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 = 282 (Table 1)
- GDD last week (April 22-28) = 95; Long term average = 86
- GDD projected in next 10 days = 164 or 16.4/day (Table 1)
- Average GDD for the third week of April = 71 or 10.1/day
- The ten-day forecast suggests warmer than average temperatures for the first week of May. Projected GDD is 16.4/day compared to the long-term average of 14.9/day.

Table 1. Growing Degree Days (GDD), March - April 2017 to March - April 2024 near Roseau MN.

Year	2024	2023	2022	2021	2020	2019	2018	2017	2024 vs. 2023
March	0	0	0	131	30	0	0	90	0
April		93	95	236	183	211	184	458	
April 1-14	139								
April 15-28	143								
Total		93	95	367	213	211	184	548	
*April 29- May 8	164								

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

Soil temperatures, in turf conditions, reached 40F last week. Biological activity in the soil begins to increase at 40F degree soil temperature as does tillering in perennial ryegrass. In 2024, 40F soil temperature was reached on April 8th in bare soil and April 22nd in turf conditions (Table 2). In the twelve-year period from 2013 to 2024, the range between bare soil and turf conditions was 1 day in 2016 and 23 days in 2021. In 2024, the difference in bare soil vs turf conditions was 14 compared to 10 days for the twelve-year average.

Table 2. Calendar date of 40F soil temperature, at a four-inch depth, in black ground and turf conditions near Roseau in a twelve-year period from 2013 to 2024.

	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Bare	4-8	4-28	5-3	4-3	4-22	4-16	4-20	3-30	4-14	3-31	4-19	5-4
Turf	4-22	5-1	5-6	4-26	4-27	4-29	4-29	4-13	4-15	4-15	5-9	5-7
Difference	14	3	3	23	5	8	9	15	1	16	20	3

CROP MANAGEMENT

In 2024, perennial ryegrass plants were green after the snow melted. However, several days with temps in the 20's resulted in significant leaf desiccation (brown leaf tissue to the entire crown). Additional time will be needed to make a complete assessment of the perennial ryegrass stands. If ryegrass stands are slow to green up, stand determinations should be made by the second week of May based on the current year's accumulated GDD. Several factors appear to be important for ryegrass winter survival including ryegrass crown diameter, time of seeding, stubble to catch snow and ponded water.

Perennial ryegrass critical growth stages, based on GDD's in Minnesota growing conditions, are listed in Table 3. This data averaged over years, locations and planting dates of ryegrass fields grown in the environmental conditions near Roseau, 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 and monitoring pest infestations throughout the growing season.

Table 3. The onset of perennial ryegrass growth stage as influenced by accumulated GDD, averaged over years, locations and planting dates near Roseau, MN.

<u>Plant Stage</u>	<u>GDD</u>
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

As of April 28th, the year-to-date accumulation of GDD was 282. The new 10 day forecast projects 164 GDD by May 8th for a projected year-to-date GDD total of 446. Spring seeded ryegrass will be tillering stage for the next couple of weeks. Previous U of MN research suggests that nitrogen should be in the rooting zone by 500 GDD with no fall N and up to 700 GDD if 30-50 units of N was fall applied.

PEST MANAGEMENT

Winter annual weeds have begun to grow and produce a rosette of leaves near the soil surface. Field pennycress, cockle, Shepards purse, and marestail are examples of winter annual weeds in ryegrass fields. If winter annual weeds were not controlled last fall, field scouting will determine if an early season herbicide treatment will be needed to control these winter annual broadleaf weeds.

As the soil temperatures increase, the first annual weeds to emerge are volunteer canola, sunflowers, smartweed, annual bluegrass, wild oats, and wild mustard. Volunteer canola and sunflowers emergence was observed in several fields at the end of last week. A soil applied herbicide (Dual, Nortron or Prowl) can be an effective method of weed control in perennial ryegrass fields, but these products should be applied prior to weed emergence in the spring. Nortron has some foliar activity, but root uptake is responsible for most of the herbicidal efficiency.

Next week's newsletter will be released on May 7th.