

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
June 1, 2021**

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's will be tracked in the 2021 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 = 982 (Table 1)
- Last week (May 24-30) accumulated GDD = 135
- Average GDD for the end of May = 175
- Projected GDD for the next 10 days = 423, or 42.3/day (Table 1)
- Average GDD for early June = 186, or 26.6/day
- The new 10 day forecast suggest very warm temperatures for beginning of June as the projected GDD accumulation is 42.3/day compared to the long term average of 26.6/day.

Table 1. Growing Degree Days (GDD), March - May 2015 to March - May 2021 near Roseau MN.

Year	2021	2020	2019	2018	2017	2016	2015	2021 vs. 2020
March	131	30	0	0	90	38	119	+101
April	236	183	211	184	458	263	367	+53
May 1-30	615							
May		600	548	815	679	765	659	
Total	982	813	759	999	1,227	1,066	1,145	
*May 31 - June 9	423							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

A cold front moved in last week and with it brought a weekly GDD accumulation of 135 (19.3/day) compared to the long term average of 175 (25/day). The new 10 day forecast indicates a significant warming trend with the projected GDD accumulation of 42.3/day which is well above the long term average of 27.4/day. Perennial ryegrass fields will quickly move from the jointing to the heading stage of growth.

SUMMER GRASS SEED FIELD TOUR - JULY 1

The annual grass seed summer tour is scheduled for July 1st and will be held at the U of MN Magnusson Research Farm. More details will follow in future newsletters.

ISOLATION STRIPS IN GRASS SEED CROPS

Many grass seed fields require an isolation strip in the certification process. Kris Folland is the local Field Supervisor with the Minnesota Crop Improvement Association (MCIA). If you have questions or concerns please contact your grass seed agronomist, seed conditioner or Kris with MCIA (218-791-2156).

CROP MANAGEMENT

Warm season weeds species (foxtails, barnyardgrass and pigweed species) have emerged and are growing well in tilled ground. These species are beginning to emerge in perennial ryegrass seed fields. Wild oat emergence was observed in several perennial ryegrass fields last week.

With the projected warm temperatures this week many perennial ryegrass field will be in the proper timing for an application of a growth regulator. Perennial ryegrass biomass production in seed fields has ranged from less than a ton to over 4 tons/acre. Some year's biomass production would be classified as "thin line" growth and others would be more of "lush", or even classified as rank growth. The rate of plant growth regulator can be adjusted based on biomass production in a given year, or field. Previous research would indicate that the application of a plant growth regulator generally will produce a positive response in perennial ryegrass seed yields in years of "thin" and "lush" growth. Check with your agronomist for local experience.

PEST MANAGEMENT

The first armyworm moth was captured on May 18th. The period from May 18-25 would be classified as a significant capture of armyworm moths. A cold front moved in on May 26 and with the cold temps no moths were captured in the traps. South winds and rain moved in on May 30 and a more moths were captured in the pheromone traps. It appears that we have experienced two moth flights into the perennial ryegrass growing regions of northern MN in 2021. Armyworm moth traps will be monitored through the end of June. Previous research in Ontario suggests it takes, on average 8.7 days for moths to mate and the females to lay eggs and another 7.5 days for the eggs to hatch into larvae. The data in Table 2 lists the number of days and forage consumption from the various instar stages on the armyworm larvae. Based on the first moth capture of May 18, this data would suggest that armyworm larvae may be in the 5th instar stage the week of June 21st. Field scouting will determine if armyworms in northern MN develop at the same rate as the research from Ontario. The current economic threshold for armyworms in grass crops are 4-5 larvae/square foot. Additional information on armyworms will follow in future newsletters.

Table 2. Average number of days, corn foliage consumption and percent of total consumption of armyworm larvae at various instar stages.

Larval stage and size in (mm)	Number of days	Foliage consumption (mg)	% total foliage consumed
1 st instar- 1.7	4.8	1	0.1
2 nd instar- 3.5	3.3	1.5	0.2
3 rd instar- 6.4	3.3	6	1.2
4 th instar-10	3.8	21	4.2
5 th instar-17.2	4.4	75	14.9
6 th instar-34.2	10.3	400	79.3
Total	29.9		

¹After Guppy, J.C. 1951. Three-year average in an Ontario, Canada environment (1957-1959).

²Adapted from Mukerji, M.K. and J.C. Guppy (1970) Estimated individual instar values determined from measurement of the manuscript's graphic data.

Next week's newsletter will be released on June 8th.