

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
July 7, 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 = 2,024 (Table 1)
- Last week (June 29-July 5) accumulated GDD = 305 (43.6/day)
- Average GDD for the first week of July = 230 (32.9/day)
- Average GDD for the second week of July = 243 (34.7/day)
- Projected GDD for the second week of July 2020 = 276 (39.4/day)
- Average temperatures for second week of July = High 78F and low 54F
- Projected temperatures for the second week of July 2020 = High 81.6 and low 60.9F
- The new ten day forecast suggests a continuation of above average temperatures. The projected GDD accumulation of 39.6/day compared to the average of 34.4/day

Table 1. Growing Degree Days (GDD), March - July 2014 to March - July 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	600	548	815	679	765	659	654	+52
June	995	919	1,007	917	945	941	964	+76
July 1-5	216							
July		1,067	1,100	1,095	1,123	1,147	1,066	
Total	2,024	2,745	3,106	3,239	3,134	3,233	2,843	
*July 6-July15	396							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

The new ten day forecast suggests a continuation of the above average temperatures with projected GDD of 5.2/day above the long term average. Spring seeded ryegrass is still shedding pollen on the tillers and is in the seed filling stage on the main stem. Reports of armyworm infestations are widespread in perennial ryegrass (see discussion in the pest management section).

To maximize ryegrass seed yield it's critical to protect the entire seed head in addition to the flag leaf. The ryegrass seed head is a major source for the photosynthetic energy necessary for seed filling. Disease pathogens allowed to consume the ryegrass seed head will have a negative impact on seed yield and test weight.

CROP MANAGEMENT

The USDA-ARS tracks rust development and movement from the Gulf of Mexico to the northern plain states. In the last week of June 2020, leaf rust was reported to be at low incidence and severity in plots of winter and spring wheat in southern Minnesota. Field scouting continues to monitor and track the progress of rust as it moves northward. For additional information see the link below for the Cereal Rust Bulletin. The link to this site: (<http://www.ars.usda.gov/mwa/cdl>).

Reports of leaf and stem rust are as far north as southern MN. This rust pathogen travels into northern MN from southerly winds from southern states. The month of June had wind blowing from a southerly direction more than average. In 2020, we had a southerly winds recorded in 13 of 30 days for 43% of the time. In addition, the first five days of July had southerly winds in all five days. In June the average daily maximum wind speed was 26.9 mph. These southerly winds bring rust pathogens and armyworm moths which are two pests in perennial ryegrass seed production.

Year-to-date accumulated GDD as of July 5th was 2,024. Swathing typically will begin between 2,800 and 2,900 GDD. If we use the average GDD accumulation of 34 GDD for mid-July, swathing in spring seeded ryegrass should begin in approximately 3.5 weeks. For maximum seed production, the ryegrass seed head should be protected from rust pathogens. The rate and product used on the last trip across the field will determine if additional fungicide will be required to protect the seed head during the important seed filling stage.

PEST MANAGEMENT

Reports of armyworms in ryegrass appear to be wide-spread in the perennial ryegrass growing region. Armyworms don't overwinter in northern MN and are blown into the area on southerly winds. Each year, several flights of the armyworm moths can be blown into the area. The preferred areas for armyworm moths to lay eggs are in grassy areas and ryegrass fields are a prime candidate for armyworm moths to lay eggs, especially lodged areas of the field. An adult moth will live up to ten days and can lay up to 2,000 eggs. These egg masses white in color and will contain between 100-200 eggs. These eggs will hatch into caterpillars in two-to-three days. These caterpillars will move through six instars in two-to-three weeks.

Egg masses and caterpillars have been observed at the U of MN Magnusson Research Farm in spring seeded ryegrass with wheat or late summer seeded ryegrass into fallow ground. It doesn't appear to be any difference in numbers of egg masses, or caterpillars based on method of ryegrass establishment. It appears the most likely areas for armyworm moths to lay eggs are areas of lush vegetative growth and/or lodged areas in the field. With the increased armyworm pressure targeted insecticide applications probably will want to be on the upper end of the insecticide rate range. The insecticide will have to provide enough knockdown and residual for heavy infestations of armyworms in the lush foliage of mature perennial ryegrass. Talk to your seed agronomist for an insecticide choice that will provide good knockdown and provide residual control for armyworms. It's important to control armyworms before swathing as if armyworms are in the field at swathing they will tend to concentrate under ryegrass swaths and can cause economic ryegrass seed losses, but also harvesting losses due to the worms going through the combine.

Next week's newsletter will be released on July 14th