MINNESOTA TURF SEED COUNCIL
NEWSLETTER
July 3, 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 = 2,195 (Table 1)
- GDD last week (June 26-July 2) = 253; Long term average = 220
- GDD projected in next 10 days = 332 or 33.2/day (Table 1)
- Average GDD second week of July = 243 or 34.7/day
- The ten-day forecast suggests cooler than average temperatures for the second week of July. Projected GDD is 33.2/day compared to the long-term average of 34.7/day.

Table 1. Growing Degree Days (GDD), March - July 2017 to March - July 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
May	959	649	640	600	548	815	679	+310
June	1,064	959	1,007	995	919	1007	945	+105
July1-2	79							
July		1,104	1,174	1,179	1,067	1,100	1,123	
Total		2,807	3,188	2,987	2,745	3,106	3,233	
*July 5-12	332							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

On July 1st, a light infestations of leaf and stem rust was observed in perennial ryegrass at the U of MN Magnusson Research Farm in areas NOT sprayed with a fungicide. Areas of ryegrass without a fungicide treatment give an indication of when rust is first detected and the severity of infestations. No leaf diseases were observed in areas that received a fungicide treatment. Leaf and stem rust spores that infect perennial ryegrass travel on south winds from southern states. Recent rains and high humidity will favor the development of leaf rust in perennial ryegrass. The length of time that a fungicide will provide protection against rust is influenced by:

1) Product used in last trip across the field.
2) Fungicide rate
3) Disease severity and environmental conditions
4) The number of days since the last fungicide application

Now that we know leaf rust in the area be sure to review the last fungicide application timing. If the fungicide protection is about to run out and the timing of ryegrass swathing is a couple of weeks or more away a fungicide application may be warranted to protect the ryegrass seed yield potential.

CROP MANAGEMENT

The USDA-ARS tracks rust development and movement from the Gulf of Mexico to the northern plain states. As of June 16, crown rust was observed in buckthorn at the U of MN St. Paul campus. Buckthorn is an alternate host for rust that infects wheat and other grasses. For additional information on the movement of rust from southern states into Minnesota the attached link will provide this information. The link for the Cereal Rust Bulletin: (http://www.ars.usda.gov/mwa/cdl).

Historically, in northern MN environmental conditions, crown rust has been observed after 1,500 and leaf and stem rust after 1,900 GDD. Rust spores travel on low level jet stream winds from southern states into the perennial ryegrass production areas of northern MN. Perennial ryegrass is heading, and many fields are in full head extension. To maximize perennial ryegrass seed yield, it is important to protect the entire ryegrass seedhead from diseases that can reduce the photosynthetic area of the seedhead. The following are strategies for rust control in perennial ryegrass post heading.

1) Scout ryegrass fields for rust a couple times a week as in favorable environmental conditions rust can develop and increase rapidly and this disease can "explode" in a few days.
2) If a fungicide has been applied with a previous trip across the field, apply a fungicide when the last fungicide is about to "run out." The number of days of disease protection will depend upon the fungicide used and product rate.
3) Apply a fungicide when the ryegrass seedhead is fully extended. A full rate of Priaxor or Quilt Excel at full head extension should provide protection for 21 to 28 days. As of July 2nd, the year-to -date accumulated GDD was 2,195. The new 10-day forecast indicates close to average temperatures for the next 10 days. Historically, ryegrass swathing will begin after the accumulation of 2,700 to 2,800 GDD. If we assume an average of 35 GDD/day for the first couple weeks of July, swathers could be rolling in ryegrass in three weeks. A full rate of Priaxor or Quilt Excel applied at full head extension should provide disease protection until swathing.

PEST MANAGEMENT

Armyworms

In 2023, five flights of armyworm moths have been documented into the ryegrass production area of northern MN. The moth capture from the seven traps are as follows:
May 19-23 = 43
May 29-June 2 = 40
June 4-5 = 195
June 13-19 = 93 with 83 from 2 traps
June 25-29 = 36 with 27 from 2 traps

A summary of the moth capture data indicates that June 4-5 was a widespread moth capture. The 195 moths captured over two days (14 moths/trap/day) is the largest number since this project began in 2021. However, the moth capture from June 13-19 and June 25-29 were isolated to areas to two areas in Lake of the Woods County that experienced thunderstorms and rain. Field scouting will determine the egg hatch and survivability of armyworms larvae.

Next week's newsletter will be released on July 11th.