MINNESOTA TURF SEED COUNCIL
NEWSLETTER
July 26, 2022

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's (from snow melt to swathing) will be tracked in the 2022 growing season with comparisons to the previous six years. A base temperature, T-Base = 32 degrees F, will be used for perennial ryegrass.

- Year to date GDD = 2,580 (Table 1)
- Last week (July 18-24) accumulated GDD = 260; the long term average = 239
- Projected GDD for the next 10 days = 367, or 36.7/day (Table 1)
- Average GDD for the first week of August = 229, or 32.7/day
- The 10 day forecast suggests warmer than average temperatures for the end of July into the first week of August as the projected GDD is 36.7/ day vs the long term average of 33.1/day.

Table 1. Growing Degree Days (GDD), March - July 2016 to March - July 2022 near Roseau MN.

Year	**2022**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2022 vs. 2021**
March	0	131	30	0	0	90	38	-131
April	95	236	183	211	184	458	263	-141
May	649	640	600	548	815	679	765	+9
June	959	1,007	995	919	1,007	917	945	-48
July 1-24	877							
July		1,174	1,179	1,067	1,100	1,095	1,123	
Total		3,188	2,987	2,745	3,106	3,239	3,233	
*July 25- Aug 3	367							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

The ten day forecast indicates a continuation of the warming trend of the last couple weeks. Many perennial ryegrass fields have areas in the field that are turning brown. Monitor these fields several times a week as when ryegrass seed moisture drops into the low 40%, seed moisture losses can be over 3% points/day.

CROP MANAGEMENT

With ryegrass beginning to turn from green to light brown, swathing will be right around the corner. The following ryegrass swathing data is from Oregon (Table 2) and the U of MN Magnusson Research Farm (Table 3). When to swath ryegrass? The swathing decision is a balancing act, not to cut the late-maturing seeds too early and the early-maturing seeds too late. When ryegrass is cut too early (high seed moisture content) will shorten the seed filling time which leads to immature seeds and reduced seed size and weight. Cutting too late (lower seed moisture) will reduce seed yield due to increased shatter in the swathing and harvesting operations. Data in Tables 2 and 3 suggest that ryegrass swathing in the mid-30's is the 'sweet spot'. Significant seed yield losses occurred when ryegrass was swathed when the seed moisture content was over 40% or, when seed moisture levels dropped into the high 20's. Seed shatter will be reduced if swathing is conducted with dew on the plant foliage.

Table 2. Harvest components in perennial ryegrass swathed at different moisture contents and seed shatter, Lindsay Farms near Shedd, Oregon in 2004.

Seed Moisture	Seed Yield	Cleanout	1,000 seed wt.	Seed Germ	Seed Shatter*	Seed Shatter**
(%)	(#/acre)	(%)	(%)	(%)	(#/sq. ft.)	(#/sq. ft.)
45	1,695	14.5	1.84	95.9	2	17
36^	1,727	15.1	1.82	97.0	3	78
29	1,662	14.5	1.87	95.8	4	131
LSD (0.05)	48	NS	NS	NS	NS	82

*Ryegrass seed shatter between swaths
**Ryegrass seed shatter under swaths
^ Normal swathing moisture content of perennial ryegrass

Table 3. Ryegrass seed yield, seed moisture and test weight influenced by cutting date average over two small plot locations (Rice Farms and U of MN Mag Farm in 2014).

Sample Date	Seed Yield*	Seed Moisture**	Test Wt.***
	(% of the mean)	(%)	(#/bu)
7/30	96.9	46	28.5
8/1	93.8	43	29.2
8/3	107.5	40	29.3
8/5	110.2	38	29.9
8/7	121.7	34	30.1
8/9	93.9	28	31
8/12	88.8	26	31
LSD (0.05)	6.2		

*Mean seed yield U of MN Mag Farm = 1,368#/acre and Rice Farms 1,348#/acre
** Seed moisture determined by microwave oven
*** Clean seed test weights corrected to 12.5% moisture

PEST MANAGEMENT

Late season rust has been observed at the U of MN Magnusson Research Farm in areas of perennial ryegrass not sprayed with a fungicide. Rust generally will not cause significant yield losses in perennial ryegrass fields that are turning brown and drying down. If the ryegrass field is still green and shedding pollen, a fungicide application may be management practice to consider.

Isolated pockets of armyworm larvae has been observed in perennial ryegrass fields in the last couple weeks. Remember, armyworm larvae that are over an inch long will soon pupate. If armyworms are in the ½ to ¾ inch long, these are the ones that can cause significant damage if the population is high (3-4/square foot). If armyworms are climbing up the ryegrass stem and cutting off the seed head an insecticide application may be warranted with fewer armyworms.
In the last couple weeks no additional flights of armyworm moths have been detected.

Next week's newsletter will be released on August 2nd