MINNESOTA TURF SEED COUNCIL
NEWSLETTER
May 25, 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 = 847 (Table 1)
- Last week (May 17-23) accumulated GDD = 212
- Average GDD for the third week of May = 151
- Projected GDD for the next 10 days = 272, or 27.2/day (Table 1)
- Average GDD for end of May = 175, or 25/day
- The new 10 day forecast suggest a continuation of the warming trend as projected GDD accumulation of 27.2/day compared to the long term average of 25.1/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 1-23	480							
May		600	548	815	679	765	659	
Total	847	813	759	999	1,227	1,066	1,145	
*May 24 - June2	272							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

Perennial ryegrass is growing well and spring seeded crop is in the jointing stage of growth. With the projected warmer than average temperatures ryegrass plants will exhibit a vertical growth pattern. The new 10 day forecast suggests a continuation of the above average temperatures with the projected GDD accumulation of 27.2/day compared to the long term average of 25.1/day. With the forecasted warm temperatures look for spring seeded perennial ryegrass fields to be in the boot stage to early heading stage as the calendar changes to June.

CROP MANAGEMENT

Research has shown a nonionic surfactant is the best spray additive to use with Assure II in tolerant ryegrass varieties. Perennial ryegrass injury can occur if crop oil or a nitrogen source is added to the spray tank with Assure II. Again with Assure II, in tolerant ryegrass varieties, a nonionic surfactant at 0.25% v/v is recommended spray additive.

Questions are being asked about the control of volunteer wheat in perennial ryegrass. If a height differential exists between the volunteer wheat and ryegrass a rope wick with Roundup has been an effective treatment. The other choice would be Callisto at 3 oz/acre. Research has indicated a double

additive (MSO and nitrogen source) should be added with Callisto to optimize volunteer wheat control. Some ryegrass varieties will exhibit yellowing after an application of Callisto.

With ryegrass jointing in spring seeded ryegrass fields, growth regulator timing is right around the corner. Apogee and Palisade are growth regulators labeled for use in perennial ryegrass. Research has indicated that a surfactant and nitrogen source with Apogee has given increased seed yields compared to the standard additives. With Palisade a single additive is recommended as the double additive can cause ryegrass injury, especially at the high rate of Palisade. The following conclusions are based on small plot replicated research with growth regulators in perennial ryegrass over the last decade:

- The application of a growth regulator will result in increased perennial ryegrass seed yield of 150-300 pound/acre compared to the untreated
- Growth regulators will reduce plant height by 2 to 8 inches compared to the untreated
- Growth regulators in perennial ryegrass reduce lodging and keep plants upright which improves seed set during pollination
- Previous research in MN has indicated that plant growth regulators should be applied to perennial ryegrass seed production fields in the late boot to early heading stage
- Palisade performance will be reduced if the weather turn cool. Palisade performance is enhanced when ryegrass is in a period of rapid growth.
- Apogee rate of 6-8 oz/acre and Palisade at 1 to 1.5 pt/acre are recommended with a full ryegrass stand. If ryegrass has thin line growth, plant growth regulator rate can be reduced by 20-40%
- A single additive, nonionic surfactant at 0.25%v/v is recommended with Palisade
- With Apogee a double additive, a nonionic surfactant at 0.25% v/v and nitrogen either 28%, or AMS at 2.5% v/v
- A double additive is not recommended with Palisade as crop injury may result in certain environmental conditions (hot, dry)

U of MN Research Reports are available on the web: https://turf.umn.edu/seed-production-newsletters.

PEST MANAGEMENT

In 2021, armyworm moths have arrived in Roseau County on May18th. This is the first year that a coordinated armyworm moth trapping network has been established in the perennial ryegrass seed growing areas of northern MN. At one of the trapping sites, 6 miles NW of Roseau, moth capture counts were: 4 on 5/24, 14 on 5/21, 15 on 5/23 and 7 on 5/25. Moths that were captured are attracted to the trap by a female pheromone, so moths in the trap were males. Research data is limited on the correlation of moths captured in a trap and the infestation levels of armyworms larvae that feed on the crop. Previous research in Ontario suggests it takes 30-40 days from moth flights and egg laying to the beginning of the 6th instar stage. The 5th and 6th instar stage in armyworms cause the most damage Field scouting for will determine the level of armyworms larvae in perennial ryegrass fields. The current economic threshold for armyworms in grass crops are 4-5 larvae/square foot. Additional information on armyworms will follow in future newsletters.

Next week's newsletter will be released on June 1st.