**MINNESOTA TURF SEED COUNCIL**
**NEWSLETTER**
**June 9, 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 = 1,031 (Table 1)
- Last week (June 1-7) accumulated GDD = 218 (31.1/day)
- Average GDD for the first week of June = 177 (25.3/day)
- Average GDD for the second week of June = 186 (26.6/day)
- Projected GDD for second week of June 2020 = 196 (28/day)
- Average temperatures for second week of June = High 70.7F and low 46F
- Projected temperatures for second week of June 2020 = High 69.1F and low 50.3F
- The new ten day forecast suggests a return to average temperatures after several weeks of above average temperatures. The projected GDD accumulation of 29.6/day compared to the average of 28.1/day

Table 1. Growing Degree Days (GDD), March - June 2014 to March - June 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 1-7 | 218 | | | | | | | |
| June | | 919 | 1,007 | 917 | 945 | 941 | 964 | |
| Total | 1,031 | 1,678 | 2,006 | 2,244 | 2,001 | 2,086 | 1,777 | |
| | | | | | | | | |
| *June 8-17 | 296 | | | | | | | |

* Forecasted GDD at Roseau for the next 10 days.

## GENERAL CROP CONDITION

Last week the accumulated GDD was 218 (31.1/day) which is 5.8 GDD/day warmer than the long term average for the first week of June. The new ten day forecast suggests temperatures will return to the long term average for the second week of June. The warm temperatures in the last couple weeks have accelerated ryegrass growth and development. Many ryegrass fields have moved from the jointing into the heading stage of development. The onset of heading is a good benchmark for the application of plant growth regulators in perennial ryegrass. Previous research has indicated an application of a plant growth regulator will reduce plant height in perennial ryegrass by an average of two to eight inches. This height reduction will improve seed and harvest efficiency by a reduction of plant lodging.

## CROP MANAGEMENT

With many ryegrass fields entering the early heading stage, now is the time to apply a plant growth regulator in perennial ryegrass. Apogee and Palisade are growth regulators labeled for use in perennial ryegrass seed production. 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 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
- Apogee rate of 8 oz/acre and Palisade at 1.5 pt/acre are recommended with full ryegrass stands. 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
- Recent research has suggested that 3 gallons of liquid AMS (10#/dry) with Apogee has given enhanced seed yields compared to the standard 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 Growth regulator research results are available on the web: mnturfseed.org

## PEST MANAGEMENT

One of the consequences of the recent heat and rainfall has been the emergence of insects all kinds to be more active and visible, especially towards evening. Research has not documented a yield loss in perennial ryegrass seed production from early season insect infestations. Research is ongoing to determine and identify early season insects that may cause yield losses in perennial ryegrass seed production. However, previous research has documented late season insect damage in perennial ryegrass seed production. Armyworm and grasshoppers are two insect species that can cause significant damage in perennial ryegrass seed production and will be covered in a future newsletter.

Next week's newsletter will be released on June 16th