MINNESOTA TURF SEED COUNCIL
NEWSLETTER
July 28, 2015

RYEGRASS GROWING DEGREE DAYS (GDD)

Ryegrass GDD will be tracked for the 2015 growing season with comparisons to the previous five years. A base temperature of 32 degrees F will be used for ryegrass (T-Base = 32 F)
Reported GDD are based on the total accumulation from the beginning of the calendar year to the current date. As of July 26th, accumulated GDD for 2015 are 3,041 (adjusted GDD = 2,769), see Table 1. The most recent ten day forecast suggests temperatures very close to the long term average. Projected GDD for the ten day period ending August 6th is 345 or 34.5/day. Average GDD for the end of July is 34/day.

Table 1. Growing degree days (GDD) for March 2010 to June 2015 near Roseau MN.

Year	2015	2014	2013	2012	2011	2010	2015 vs. 14
March	119	0	0	304	7	137	+119
April	367	159	80	370	278	476	+208
May	659	654	640	726	639	707	+5
June	941	964	975	979	898	911	-23
July 1-26	955						
July		1,066	1,088	1,230	1,162	1,174	
Total	3,041^	2,843	2,783	3,609	2,984	3,405	
July 28-Aug 6*	345						

* Forecasted GDD at Roseau for the next 10 days.
^ Total GDD for 2015.
^Adjusted GDD (-272 GDD) due to extensive ryegrass leaf desiccation in April 2015 = **2,769**

GENERAL CROP CONDITION

After the chance of thunder showers early in the week, the short term forecast suggests several days of dry weather. With dry windy weather, ryegrass maturity may proceed at a rapid pace. Swathing of fall seeded ryegrass will begin later this week with the majority delayed into next week. To maximize ryegrass seed yield and quality, previous field experience suggest the seed moisture should be below 40% moisture before swathing. As always, environmental and specific field conditions will influence the actual swathing date for ryegrass.

PEST MANAGEMENT

Ryegrass seeded this spring with wheat, (2016 harvest) for the most part, looks good. Leaf rust is beginning to show up in seedling ryegrass. Previous research has NOT shown a benefit from a fungicide application at this time of the year. The fungicide applications are effective in rust control. However, no yield advantage or difference in rust infections have been observed the summer following fall treated or untreated plots. To date, leaf and stem rust that infects ryegrass has not overwintered in northern Minnesota and spores that cause infections must blow up from the southern regions of the United States each season.

CROP MANAGEMENT

Straw management

Spring wheat is rapidly turning color and harvest will be right around the corner. One of the primary methods of ryegrass stand establishment is to seed ryegrass with spring wheat. Straw management is a critical step in the management of a profitable ryegrass seed crop. A little extra time taken to adjust the straw distribution pattern out the back of the combine will pay dividends in a more uniform ryegrass crop in 2016. Pay attention to both wheat straw and fines, as both can act like a blanket to smother the young ryegrass plants. Be sure to adjust both the straw chopper and chaff spreaders that will spread hulls and other "fines". Again, a uniform spread of the wheat straw is the first step in successful ryegrass crop.

A light harrowing operation, when the straw is dry, will help distribute the wheat straw which tends to reduce the smothering effects of straw and will generally result in a more uniform ryegrass stand. If the straw is damp, it tends to bunch or clump which can smother the young ryegrass plants. Another benefit of a light harrowing operation, it will help incorporate the P and K applied after wheat harvest and will make these nutrients more available to the ryegrass root system. P and K are required for root and crown development which improves plant vigor and helps with winter survivability.

RYEGRASS SEED STORAGE MANAGEMENT

Ryegrass seed moistures in the 2014 season ranged from dry, >10% to wet, >16%. In previous years, problems with ryegrass seed quality have been reported, if the moisture content of the ryegrass seed going into storage is greater than 11-12%. Ryegrass seed moisture greater than 12% may require supplemental heat, in addition to air, to dry the seed to a moisture level suitable for long term storage. Make sure to monitor moisture content of ryegrass seed in storage and be prepared add supplemental air, or move seed, in order to reduce hot spots or lower seed moisture content of ryegrass seed in storage. With variable moisture levels of ryegrass seed, it will be **very important** to monitor the seed moisture content of ryegrass seed in the bin. If hot spots develop in storage, air alone may not remove the moisture and heat fast enough. If hot spots are detected, be prepared to move seed from the bin as soon as possible as past experience suggests ryegrass seed moisture in the 11-12% range is required for long term seed viability and storage.

Air bins can help reduce seed temperature and help maintain ryegrass seed quality during storage. Air flow resistance and fan pressure are usually expressed in inches of water in a column. This term comes from gauges called U-tube manometers that measure this pressure (static pressure). Air flow resistance of a crop and the fan pressure to overcome it depends upon how fast air is moving and how long and narrow the paths for air movement. For grains and oil seeds the main factors involved are:

- Seed size (size and shape of seed)
- Depth of crop in the bin (short large diameter bins generally have lower static pressure than tall narrow bins)
- Air flow rate

The expected static pressure charts are available for most grains and oil seeds. However, data is limited for ryegrass and this topic may require local investigation of ryegrass in storage using u-tube manometers to generate this information.

Next week's newsletter will be released on August 4, 2015.