

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
May 14, 2019**

RYEGRASS GROWING DEGREE DAYS (GDD)

Ryegrass GDD will be tracked for the 2019 growing season with comparisons to the previous six 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, after snow has melted from ryegrass fields, to the current calendar date.

- Year to date, GDD = 355 (Table1)
- Average temperatures for the second week of May, high of 62.9 F and low 36.1 F
- Average GDD accumulation for second week of May = 124 (17.7/day)
- Actual GDD for second week of May = 93 (13.3/day)
- Second week of May in 2019 was cooler than average by +4.4/day
- Current 10-day forecast projects daily highs in the mid 60's and lows in the high-40's
- Projected 10-day GDD = 229 (22.9/day)
- Average GDD accumulation for third week of May = 151 (21.6/day)
- Current 10 day forecast projects warmer than average temperatures (+1.3 GDD/day)

Table 1. Growing degree days (GDD), March - May 2013 to March - May 2019 near Roseau MN.

Year	2019	2018	2017	2016	2015	2014	2013	2019 vs. 18
March	0	0	90	38	119	0	0	0
April	211	184	458	263	367	159	80	+27
May		815	679	765	659	654	640	
May 1-12	144							
Total	355	999	1,227	1,066	1,145	813	720	
*May 13-22	229							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

The current 10-day forecast projects warm temperatures and a rapid accumulation of GDD's. Perennial ryegrass is in the tillering stage of growth. The next critical stage growth stage is jointing. As a review, the following are the average GDD for the various perennial ryegrass growth stages in northern MN. The GDD numbers below are averaged over various management systems (spring and fall seed) at Roseau, MN.

<u>Growth Stage</u>	<u>GDD</u>
Greenup	<200
Tillering	200-700
Early Jointing	700-850
Late Jointing	900-1,050
Mid-heading	1,300-1,550
Pollen Shed	1,600-1,800
Swathing	2,700-2,900

PEST MANAGEMENT

As the soil temperature warms from the 40's into the 50 degrees F, look for accelerated annual weed emergence, especially the cool season broadleaves and grasses (common lambsquarters, smartweed spp., wild mustard, wild buckwheat and wild oat). Now is the time to schedule fields to be scouted for broadleaf weeds. Winter annuals (shepardspurse, pennycress and cockle) are in the late rosette stage and will soon be bolting. Dandelions were in full blooming over the weekend! Annual weeds (volunteer canola, mustard, wild buckwheat and smartweed) are first to emerge in the spring. A tank mix of dicamba and 2, 4-D (0.5-1pt of each) is an effective broad-spectrum broadleaf control option for weed control in ryegrass. If the broadleaf weed control program includes a fall and spring application, the spring application can be extended compared to a spring only program. A spring only program will have to be made soon, to control winter annual weeds.

CROP MANAGEMENT

Last week's newsletter presented information on nutrient content of perennial ryegrass straw, roots and grain. Questions have been asked what happens to nutrients when straw is burned? Previous research in the northern plains has estimated most of the carbon, nitrogen and sulfur would be lost with minimal loss of P & K. Recent research by Heard and colleagues at Carmen, Manitoba collected wheat, oats and flax straw from three regions in Manitoba to determine nutrient losses after burning. Straw samples were between 4 to 6% moisture. When averaged over the three species, carbon and nitrogen losses were over 90% in all three species. On average, 98% of the nitrogen was lost, 24% of the P, 35% of the K and 75% of the sulfur were lost through burning. The nutrient values in one ton of spring wheat straw and ash can be found in Table 2. Estimates of wheat straw are variable, but a good wheat crop will yield 2.5 to 2.8 tons dry matter/acre.

This research agrees with previous research on the losses of carbon, nitrogen and sulfur. However, P & K losses are greater than previously reported. The authors speculate that smoke and particulate matter was the most likely cause of P & K nutrient loss. The take home message, fertilizer rates may have to be adjusted to account for nutrient losses from burning due to reduced mineralization of wheat straw.

Table 2. Nutrient Content in One Ton of Harvested Straw and Ash in Spring Wheat.

Nutrient	Straw	Ash	% loss
	-----pounds-----		
Carbon	826	77	91
Nitrogen	22	0.4	98
Phosphorus*	2.7	2.4	11
Potassium*	29	24	17
Sulfur	2.2	0.7	68

*Convert P & K values to P₂O₅ and K₂O, multiply by 2.29 and 1.2, respectively

Source: Heard, Cavers and Adrian, Manitoba Agriculture, Carmen Manitoba

SUMMER GRASS SEED FIELD TOUR - JUNE 25

Mark your calendar for the annual grass seed summer tour. The tour this summer is scheduled for Tuesday, June 25th at 5:00 pm to be held at the U of MN, Magnusson Research Farm. More information on specific tour stops will follow in future newsletters.

Next week's newsletter will be released on May 21st, 2019.