

**MINNESOTA TURF SEED COUNCIL
NEWSLETTER
May 14, 2013**

INTRODUCTION

Welcome to the second edition of the Northern Minnesota Grass Seed Newsletter for 2013. The primary objective of this newsletter is to report on growing conditions, crop development and progress of perennial ryegrass and bluegrass crops. The newsletter is scheduled for weekly distribution from the beginning of ryegrass green-up to harvest. Special alerts will be sent as pest infestations dictate or production problems arise.

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RYEGRASS GROWING DEGREE DAYS (GDD)

Ryegrass GDD will be tracked for the 2013 growing season with comparisons to the last 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 calendar date. Thus far in 2013, we have accumulated only 224 GDD as of May 12th (Table1). Thus far in 2013 season, we have accumulated fewer GDD than any year in the last five, even 2008 which was a cool spring. The short term forecast indicates an improvement in temperatures. The projected GDD for next week at Roseau is 177 (25.3/day). If the current forecast holds, by next weekend we will have accumulated approximately 400 GDD's for the current calendar year.

Table 1. Growing degree days (GDD) for March 2008 to May 2013 near Roseau MN.

Year	2013	2012	2011	2010	2009	2008	2013 vs. 12
March	0	304	7	137	30	6	-304
April	80	370	278	476	247	202	-594
May		726	639	707	515	501	
May 1-12	144						
Total	224	1,400	924	1,320	792	709	
May 13-19*	177*						
Total	401*						

* Forecasted GDD at Roseau for the next 7 days.

Soil temperature generally is a good indicator of the “earliness or lateness” of the growing season (Table 2). In 2013, we reached 40 F in tilled soil on May 4th. This is the latest recorded 40 degree soil temperature in the last 7 years! We reached 40 F in sod conditions on May 7th but since that date soil temperatures have retreated back into the high-30's.

Table 2. Calendar date when soil temperatures reach 40 F, in tilled and sod conditions near Roseau in 2006 to 2013.

	2013	2012	2011	2010	2009	2008	2007	2006
Tilled	5-4	3-12	4-8	3-30	4-14	4-15	4-14	4-11
Turf		3-23	4-23	4-13	4-29	4-18	4-19	4-11
Difference		11	15	14	15	3	5	0

GENERAL CROP CONDITION

Ryegrass

Perennial ryegrass is beginning to green-up and break out of winter dormancy. Frost, for the most part, is out of the ground in agricultural fields. Spring seeded ryegrass is further along in the developmental process than ryegrass seeded in the late summer. With the projected temperatures this week, ryegrass will enter a more rapid vegetative growth phase than in previous weeks, which will allow a better assessment of ryegrass winter survivability.

CROP MANAGEMENT

Ryegrass

When should nitrogen be applied in ryegrass? The ryegrass plant goes through three distinct phases in the uptake and utilization of nitrogen from the soil.

- Phase 1 - Slow nitrogen uptake
- Phase 2 - Rapid nitrogen uptake
- Phase 3 - Nitrogen redistribution, slow or no uptake (movement within the plant)

Phase 1 takes place in the fall and early spring and corresponds to ryegrass plants in the vegetative to tillering stage. Research in Oregon indicates less than 20% of the above ground biomass is accumulated prior to tillering. In Minnesota conditions, ryegrass will be in Phase 1 from the vegetative stage to tillering (up to 700 GDD).

Phase 2 is the time for rapid nitrogen uptake in ryegrass. This corresponds to ryegrass in the jointing to early heading stage. Research from Oregon indicates ryegrass plants can take up 2 to 4 pounds of nitrogen/day during Phase 2. This rapid uptake of nitrogen is completed at head emergence which is 6 weeks or more prior to harvest. It is critical to have nitrogen in the root zone during this period of rapid nitrogen uptake. In Minnesota conditions ryegrass will be in Phase 2 from jointing to heading (700 to 1,250 GDD)

Phase 3 occurs during heading to mature seed set (> 1300 GDD). The majority of the nitrogen has been taken up by the ryegrass plant and nitrogen needs are redistributed in the plant from lower leaves and tillers to the upper parts of the plant. Nitrogen applied at this time is of limited utility for ryegrass seed yield. The exception may be foliar feeding and will be a topic discussed in a future newsletter.

Thus far in 2013, we have accumulated 224 GDD. If all nitrogen is to be applied in the spring, fertilizer application should be earlier (250-450 GDD) than if the nitrogen is applied in a split application program (fall and spring) program (up to 800 GDD). With the projected 10 day forecast of high temps in the mid-60's and lows in the mid-40's, in 10 days we will accumulate approximately 240 GDD (24 GDD/day). If this forecast holds, in 10 days we will have accumulated an additional 240 GDD. Year to date, the accumulated GDD is 224 + the 10 day projected 240 = 461 GDD. Now is the time to schedule nitrogen applications in ryegrass. It's important to get nitrogen into the root zone prior to the time of high nitrogen demand (phase 2).

A discussion of weed control programs in ryegrass will be included in next week's newsletter which will be released on May 21, 2013.