

MINNESOTA TURF SEED COUNCIL
NEWSLETTER
April 26, 2022

INTRODUCTION

Welcome to the first edition of the Northern Minnesota Turf Seed Growers Newsletter for 2022. The primary objective of this newsletter is to report on weather conditions, crop growth & development, pest management and chart the year-to-date perennial ryegrass growing degree days (GDD) compared to the previous six years. This newsletter is scheduled for weekly distribution from the beginning of ryegrass green-up through swathing.

Suggestions on newsletter content should be directed to: Dave Grafstrom
Email: Grafts010@umn.edu
Cell: 320-293-8722

PERENNIAL RYEGRASS GROWING DEGREE DAYS (GDD)

Perennial ryegrass GDD's will be tracked in the 2022 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).

Formula to calculate GDD:
$$\frac{(\text{Daily High Temp}) + \text{Daily Low Temp} - 32}{2}$$

Thus far in 2022, we have accumulated 54 GDD's as of April 24th (Table1).

Table 1. Growing Degree Days (GDD), March - April 2016 to March - April 2022 near Roseau MN.

Year	2022	2021	2020	2019	2018	2017	2016	2022 vs. 2021
March	0	131	30	0	0	90	38	-131
April		236	183	211	184	458	263	
April 1-24	54							
Total		367	213	211	184	548	301	
*April 25-May 4	86							

* Forecasted GDD at Roseau for the next 10 days.

GENERAL CROP CONDITION

Thus far in 2022, the month of April has been more like March with the wind, snow and cold temps. Ryegrass seeded into wheat stubble had snow cover for the first three weeks of April. Fall seeded ryegrass without a cover crop and volunteer ryegrass stands were more exposed to the cold temperatures in mid-April. The NDAWN weather station at the U of MN Magnusson Research Farm recorded five nights of low temperatures in the mid-teens from April 14 - 19. However, soil temperatures (at a 4 inch depth) in this same timeframe didn't get below 32F. Several ryegrass plants growing in wheat stubble have been dug to examine the crowns. Plants that were dug show a well-established root system, white in color which usually is an indication of a healthy crown region. Ryegrass coming out of dormancy is more of a gradual process, not like the flipping of a switch. A better assessment of ryegrass winter survival will be made after a return to daily high temps in the 40's into the 50's.

CROP MANAGEMENT

The following is a review of the critical soil temperatures for perennial ryegrass growth and development. The following information is based on soil temperatures at a 4 inch depth that had air in the soil pore spaces (not waterlogged).

90F - Shoot growth ceases

77F - Root growth ceases

70F - Maximum temperature for expansion of root growth

60-75F - Optimum temperatures for shoot growth

50-65F - Optimum temperatures for root growth

40F - Shoot growth ceases

33F - Root growth ceases

20F - Low temperature that will kill plants if temperatures drops rapidly below 20F

The North Dakota Weather Network (NDAWN) has weather recording stations distributed state-wide in North Dakota and in Northwest MN. On April 24, the average soil temperatures in bare soil was 37F compared to 32F in turf conditions recorded at the Magnusson Research Farm. At the U of MN Magnusson Research during the month of April soil temperatures in turf conditions has not moved from 32F, while soil temps in bare ground has ranged from 32 to 37F. Perennial ryegrass seeded in wheat stubble would be similar to turf conditions as much of the sunlight would be reflected by wheat stubble. The short-term weather forecast suggests a continued colder than normal pattern as the calendar will turn to May before we see projected 50F high temps. A few days of heat is required in order to get a better assessment of perennial ryegrass winter survival.

PEST MANAGEMENT

With the snow still in the air, it may seem early to be thinking about weed control. However, winter annuals have a rapid growth rate and for optimum weed control an early application (pre-bolt) is required. This is especially true if a broadleaf herbicide was not applied last fall. If allowed to grow unchecked last fall, these winter annuals (cockle, shepardspurse, field pennycress, dandelion) will have a well-developed rosette of leaves near the soil surface and it seems as soon as the snow melts they begin to grow. For most effective weed control, broadleaf herbicides should be applied before the winter annuals begin to bolt.

Next week's newsletter will be released on May, 3rd