



Growing Degree Day Models And Daily ET Available Online

By DOUG SOLDAT

Department of Soil Science, University of Wisconsin-Madison

The turf programs at the University of Minnesota and University of Wisconsin have benefitted from a close relationship over the past several years. We teach the School of Turfgrass Management together, we've collaborated to conduct and publish several scientific studies, and we've even begun to make some of our courses available to each other's students as online educational tools have improved. Now that you know that history, maybe you'll be a little less reluctant to check out the new UW Turfgrass Science web site at www.turf.wisc.edu. It has some cool features that we thought our neighbors to the west might enjoy.

At www.turf.wisc.edu, you'll find several growing degree day maps and models for Wisconsin and Minnesota so you can improve *Poa annua* seed head suppression and perfectly time your applications of herbicides and insecticides. We also added a spreadsheet that you can download to better manage your trinexapac-ethyl and paclobutrazol applications on creeping bentgrass putting greens. An example of one of the growing degree day maps is shown below (Fig. 1).

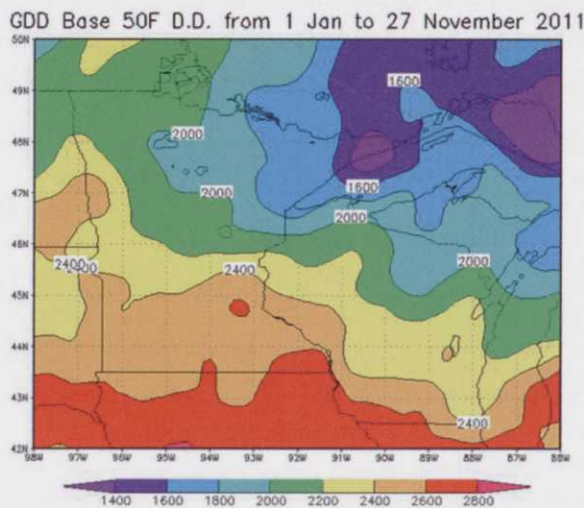
This model was developed a number of years ago based on

research at Purdue University. The scientists found that ester formulations of herbicides are more effective early in the spring (GDD 110-150) while amine formulations are more effective later in the spring (GDD 200-600). The Spring Broadleaf Herbicide Timer will give you a map of the accumulated growing degree days and help you make the best decision regarding herbicide formulation based on the weather.

Next, under irrigation scheduling, you'll find a program to assist with irrigation scheduling called WIS-TURF (Wisconsin Irrigation Scheduler for Turf). This scheduler was developed by scientists at UW for agricultural irrigation and I had the opportunity to modify and fine tune it specifically for turf. I'll be working on an instructional video which will describe how to use the new scheduler at your course, so keep an eye out for that in early spring. We have also added evapotranspiration maps to the web site to help you keep track of ET on a daily basis - no weather station required (Fig. 2). We hope you'll find this information useful and a fitting "thank you" for letting us keep Paul Bunyan's axe all these years!

Spring Broadleaf Herbicide Timer

Figure 1



Suggested Timing:

Ester Formulations: 110-150

Ester/Amine Formulations: 150-200

Amine Formulations: 200-600

Source: Schelcher, Throssell, Reicher, and Weisenberger (1995)

Broadleaf weeds are best controlled in fall. However, spring applications are often employed. IN cooler temperatures, amine formulations are less effective than ester formulations. However, later in the spring, as landscape plants are flowering and air temperatures are warmer, amine formulations are more effective. This model identifies the optimum timing for the ester, amine, and combination formulations.

Figure 1. A screenshot of the Spring Broadleaf Herbicide Timer at www.turf.wisc.edu. The web site has five other similar growing degree day models that can help you maximize application efficiency.

Figure 2

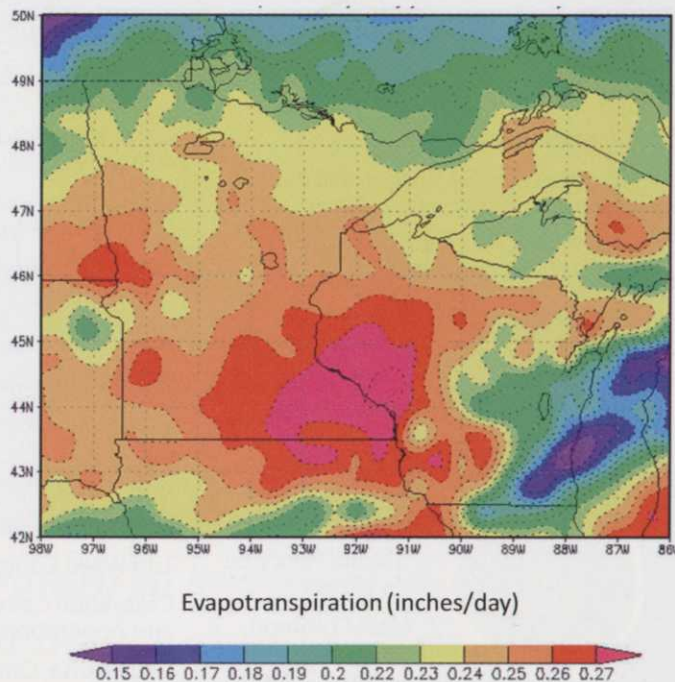


Figure 2. Daily ET maps available at www.turf.wisc.edu. You can improve irrigation scheduling by keeping track of the daily ET and rainfall for your course using the Wisconsin Irrigation Scheduler spreadsheet also available on the site.