

How To Use The Oak Wilt Vectors Emergence User Interface

What Is This Interface Used For?

The oak wilt vectors emergence user interface tool provides localized information about the emergence status of the two most important insects that transmit oak wilt in Wisconsin. The tool uses a degree-day model constructed from insect trapping data (Jagemann *et al.*, 2018) to provide guidance to reduce the risk of oak wilt introduction at the beginning of the high-risk period. Since this site provides information based on actual weather data, it is useful to refine the beginning of the periods when pruning, wounding and/or harvesting of oaks should be avoided.

Please note that this tool is intended to supplement, not replace, the calendar dates specified in the Wisconsin Department of Natural Resources' (DNR) [oak harvesting guidelines](#). This tool provides degree-day-based information about the beginning of the oak wilt high-risk period, not the end of the high-risk period. At this point, the tool is not built to predict future growing degree-day information.

If you have any questions about the interface tool, please contact your [Regional DNR Forest Health Specialist](#) or Kyoko Scanlon at Kyoko.Scanlon@wisconsin.gov.

How Do I Use This Interface?

This document addresses the basic information you need to use the interface. A short video tutorial is also available [here](#) and on the [DNR's oak wilt webpage](#).

This interface runs on the University of Wisconsin Ag Weather website and you only need to enter two pieces of information compute the status: the location and the date of interest.

Step 1: Go to the UW Extension Ag Weather website https://agweather.cals.wisc.edu/thermal_models/oak_wilt

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Oak Wilt Vectors Emergence Thermal Model

Choose the drop down Latitude and West longitude menu values that are the closest to your location.

Latitude: 42.9

West Longitude: -89.5

[How to find coordinates from Google Maps](#)

Date of Interest: 2020 March 30

Note: Date of interest must be prior to the current date. The degree day data in this system is available only up to the day before the current date for computation.

Compute Estimated Oak Wilt Vector Emergence Status

Oak Wilt General Information

Oak wilt is a deadly disease that affects oak trees. First documented in 1944, oak wilt has since been

Oak Wilt Vectors Emergence Thermal Model

This oak wilt degree-day model estimates cumulative emergence of the two most important insects that transmit oak wilt (*Colopterus truncatus* and *Carpophilus sayi*) in the spring across Wisconsin. The degree-day model was constructed based on recent vector trapping data in Wisconsin (Jagemann *et al.*, 2018). This model is a useful tool to refine the beginning of the periods when pruning, wounding, and/or harvesting

Step 2: Enter the latitude and longitude menu values that are the closest to the location of interest (i.e. timber sale site; your property with oak trees).

Step 3. Enter the date of interest. The system computes cumulative degree days since the first of the year up to the date that you specify as the date of interest. Data is collected at the end of every day, so the information is available only up to the day before the date you are viewing this site. The “Date of Interest” box defaults to the day before the current date. If a user chooses a future date, an error message will pop up.

Step 4: Click “Compute Estimated Oak Wilt Vector Emergence Status.”

The screenshot shows the 'UW EXTENSION AG WEATHER' website with a navigation bar for Weather, Sun/Water, Thermal Models, and About Us. The main content area is titled 'Oak Wilt Vectors Emergence Thermal Model' and features a sidebar with oak leaves. The main text displays cumulative degree days from January 1, 2020, to March 30, 2020, with a latitude of N42.9 and longitude of -89.5, resulting in 70 Celsius degree days. A recommendation states it is low risk for oak wilt above-ground transmission. A note mentions that growing degree days can accumulate quickly and recommendations can change in March, April, and May. The estimated vector emergence status is based on the degree day model (Jagemann et al., 2018), indicating less than 5% of *Colopterus truncatus* have emerged. The two most important insects transmitting oak wilt in Wisconsin are *C. truncatus* and *Carpophilus sayi*. At the bottom, there are three links: 'View all Degree Days for this date range', 'Download CSV', and 'Back'. Red arrows point to these links, with boxes labeled 6 and 7. A red bracket on the right side of the page groups the recommendation, note, and status sections, with a box labeled 5.

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Oak Wilt Vectors Emergence Thermal Model

The cumulative degree days
From January 1, 2020 to March 30, 2020
Latitude: N42.9, W Longitude: -89.5
GDD: 70 Celsius degree days

Recommendation

Currently it is low risk for oak wilt above-ground transmission.

Note: Growing degree days can accumulate quickly and subsequent recommendations can change quickly in March, April, and May. Please check back daily.

Estimated Vector Emergence Status

Based on the degree day model (Jagemann et al., 2018), it is estimated that less than 5% of *Colopterus truncatus* have emerged as of the date yet. *C. truncatus* and *Carpophilus sayi* are the two most important insects that transmit oak wilt in Wisconsin. *C. truncatus* emerges earlier in spring than *C. sayi*.

[View all Degree Days for this date range](#) | [Download CSV](#) | [Back](#)

5

6

7

Step 5: The result page shows information about your selection, the model recommendation and estimated vector emergence status.

Step 6: A list of daily degree-day data can be shown by clicking “View all degree days for this date range.”

Step 7: The data can be downloaded as a text file by clicking “Download CSV.” CSV stands for “Comma Separated Values” and is a text file that can be downloaded for further analysis.

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Reference:

Jagemann, S.M., Juzwik, J., Tobin P.C., and Raffa, K.F. 2018. Seasonal and regional distributions, degree-day models, and phoresy rates of the major sap beetle (Coleoptera: Nitidulidae) vectors of the oak wilt fungus *Bretziella fagacearum*, in Wisconsin. *Environmental Entomology*. 47(5): 1152-1164
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