How to use code

Abstract

This model is distributed by the Washington State University Viticulture Program, located at WSU-IAREC, 24106 North Bunn Rd., Prosser, WA 99350, USA. This model is also currently available at WSU's AgWeatherNet (weather.wsu.edu). A login account is required to view the model, but it is currently free of charge. More information on cold hardiness modeling and monitoring can be found at: http://wine.wsu.edu/research-extension/weather/cold-hardiness.

Keywords:—

1 How to use code part of the excel file

The WSU cold hardiness model (version 2) developed by John Ferguson is written in Visual Basic as a macro. Press Ctl-m to run the model, then press Ctl-g to graph the output. The model will read the variety-specific constants from the `input_parameters` worksheet. Weather data will be read from the `input_temps` worksheet. All temperatures are in degrees Celsius. Results will be placed in the `model_output` worksheet. Running the model will clear any previous results that are in the `model_output` worksheet.

If you get an error about running macros and security, you will need to change that setting.

Depending on your version of Excel, you may need to open Excel without the model, change the **Tools** > **Macro** > **Security** to low, click ok, then open the model. Newer versions of Excel will give a security warning that macros have been disabled. Select **Options** > **Enable** this content.

The model code may be viewed and/or edited by clicking on **Tools** > **Macro** > **Macros** > **model** > **Edit. Newer versions, select View** > **Macros** > **View macros** > **Edit**.

You should modify the pertinent columns of the input_temps worksheet to suit your local conditions. The current default data is from Prosser, Washington. Change the data in the input_parameters worksheet to the variety of interest by copying the pertinent line from variety_parameters. If you have any measured cold hardiness (Hc) values, put them in column H of the input_temps worksheet and change that column heading to a correct description of your data. Keep all yellow column headings intact. The default observed Hc values are for Cabernet Sauvignon in Prosser.

Feel free to play with some of the values placed in the input_parameters sheet to explore how the model works , get it to fit your observations, or model a variety not listed. If the model shows that deacclimation is delayed at your location it probably means the Ecodormancy_boundary is too large.

The model uses integer day of year (jday) as the time variable, typically starting on day 250 (September 7th) and counting past the first of the year to day 500 (May 15th).