

GRAPEVINE COLD HARDINESS MODEL NOW AVAILABLE FOR ALL AGWEATHERNET STATIONS

Just in time for the cold weather, the WSU Viticulture Research Team, lead by Dr. Markus Keller, in collaboration with [AgWeatherNet](http://weather.wsu.edu) (weather.wsu.edu) directed by Dr. Gerrit Hoogenboom will be releasing a [Grapevine Cold Hardiness Model](#) for all available AgWeatherNet weather stations throughout Washington.

This model is based on simulations^{**} of how grapevines respond to cold temperature throughout the winter. It provides the estimated critical low temperature thresholds for bud damage of over 20 wine and juice grape cultivars based on the locally observed temperature for each weather station. These thresholds represent temperatures that would kill 10%, 50%, and 90% of the primary buds for each particular cultivar. The model also predicts how the cold hardiness of the selected cultivar is changing in response to local temperatures as the dormant season progresses. If a temperature threshold has been reached, a warning statement indicating the level of damage is provided.

In addition, the Grape Cold Hardiness Model page has direct links to information regarding [Assessing and Managing Cold Damage in Washington Vineyards](#) (<http://cru.cahe.wsu.edu/CEPublications/EM042E/EM042E.pdf>), a new WSU Viticulture and Enology Extension publication.

Official launch of the model will be December 1, 2011. It is available on the [Grape Cold Hardiness Model](#) (<http://weather.wsu.edu/awn.php?coldhardiness=2011model>) page on AgWeatherNet. In order to access the model, you must be a registered user of AgWeatherNet. Registration is free. A short video on how to use the model is also available at the [WSU Viticulture and Enology Extension Website Cold Hardiness](#) page (<http://wine.wsu.edu/research-extension/weather/cold-hardiness/>).

This model is the result of recently published research efforts by Ferguson *et al.* (2011) in Annals of Botany, titled "[Dynamic thermal time model of cold hardiness for dormant grapevine buds.](#)" (<http://aob.oxfordjournals.org/content/107/3/389.abstract>).

With partial funding from the Washington Association of Wine Grape Growers, the WSU Viticulture Research Team will continue to monitor cold hardiness levels for up to 20 grape cultivars at WSU-IAREC in Prosser, WA. These real-time observations can be found on the [WSU Viticulture and Enology Extension Website Cold Hardiness](#) page. This site also contains valuable information regarding preventing, assessing and responding to cold damage in vineyards.

***Note of caution: As with all models, there is an associated error with the temperature threshold estimate. While the warning statements may not indicate bud damage, if actual temperatures reached levels near the threshold level, damage may still have occurred. Conversely, if the threshold temperature was met, this does not necessarily mean widespread bud damage. Careful vineyard assessment after a suspect cold event is still a necessary part of management.*