

## How are Grapes Coping with this Mild Winter?

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As you may have noticed the frequent snow melting we have observed in the past 4 weeks, the news in the media about the unusual mild winter, and the early emergence of crocus and tulips, it is obvious this winter has been warmer than normal and January has been reported in many parts of the country as the warmest on record. Even though this makes good weather for outside activities and a brief relief from snow shoveling and the bitter cold, vines don't see it that way.

Warm spells fool vines that spring is here and begin to wake up and resume growth.

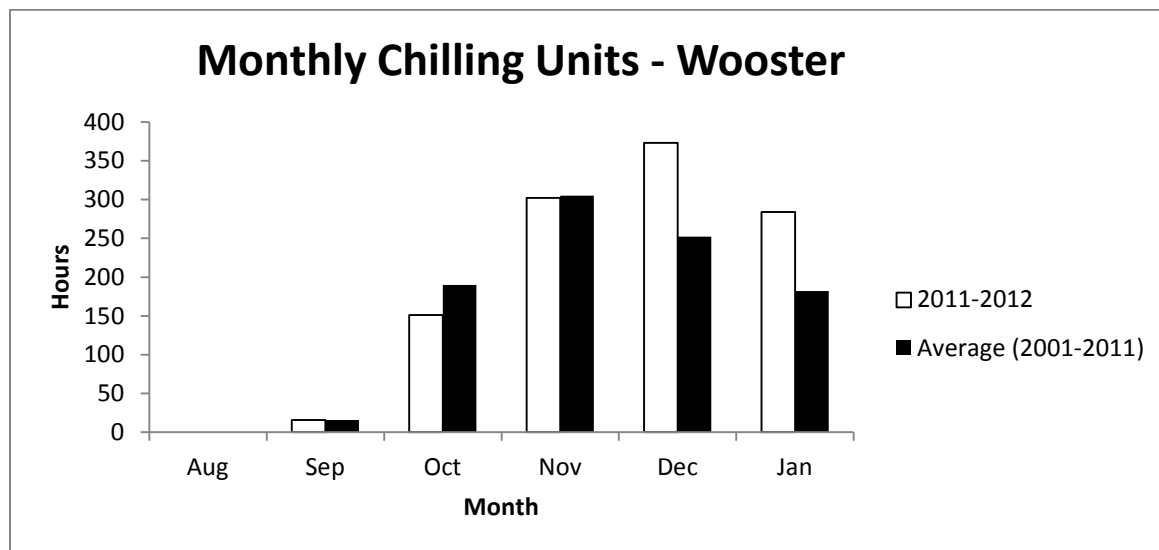
Physiologically, when vines satisfy their chilling requirements, they begin the deacclimation process (loss of cold hardiness) which is temperature dependent. That is, the warmer it is outside the quicker they deacclimate. To find out the status of grape hardiness, Yi Zhang, graduate student in the viticulture program, determined the chilling hours accumulated in 2011-2012 and cold hardiness (LT50) of some vinifera varieties grown in Wooster and Kingsville. Here are the findings:

- Typically, grapes satisfy their chilling requirements after 50-400 hours (depending on the variety) exposure to temperature between 32 and 45F. If we use a conservative figure of 800 hours, vines have already satisfied that requirement by December (Table 1). Chilling hours were higher than normal in December, and January (see Figure 1). So vines are not dormant any longer.
- Temperatures in January were warmer than normal (min, max, and mean) (Figure 2). Also, when expressed vs. the average as shown in Figure 3, the maximum temperature (red peaks) departed by up to 25 F from the average many times in January. That's not good...
- LT50 showed that the 2012 mild January caused an early deacclimation in all varieties tested by about 4F in Wooster and 2F in Kingsville (Table 2). In other words, vines began deacclimating and reached levels that we typically don't see this time of the year. Let's hope temperatures don't drop suddenly in the single digits or below 0F in the coming days.
- At this rate, we may expect an early spring with early bud break. But,...we can only talk about weather! As much as you can, try to delay pruning of vinifera varieties to minimize the chances for early bud break.

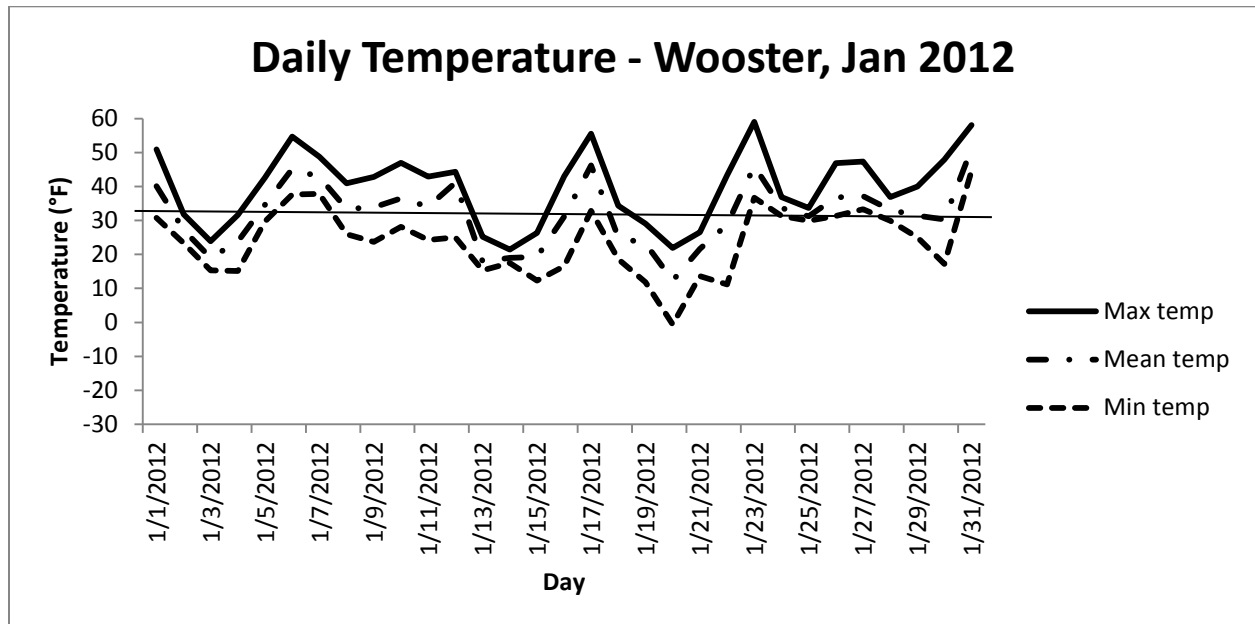
**Table1. Cumulative monthly chilling hours of temperature between 32 and 45F in Wooster in 2010-2012 vs. average (2001-2011).**

Month	2010-2011	2011-2012	Average (2001-2011)
August	0	0	0
September	5	16	15
October	157	167	194
November	462	469	491
December	545	842	753
January	615	1126	946
February	798		1135

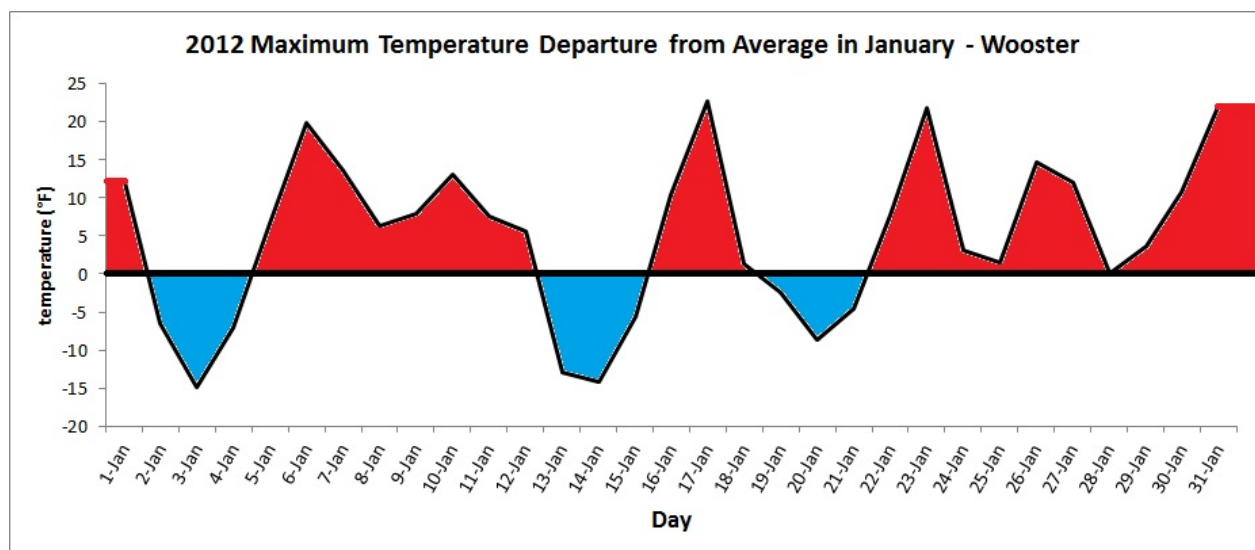
**Figure 1. Monthly chilling hour accumulation (32-45F) in 2011-2012 vs. average (2001-2011).**



**Figure 2. Daily maximum, minimum, and mean temperatures in January 2102 in Wooster.**  
*All temperatures were above normal.*



**Figure 3. Maximum temperature departure from the average in January 2012 in Wooster.**  
*Temperatures above average (above the 0 line) are indicated by the red peaks. Temperatures below average (below the 0 line) are indicated by the blue valleys. There are more peaks than valleys.*



**Table 2. Cold hardiness (LT50) of varieties grown in Wooster and Kingsville.** *Buds were collected in January and February 2012. Note higher LT50 on 31 Jan and 1 Feb than those from previous dates, indicating that vines are deacclimating. Some LT50 of same varieties were higher in Kingsville than in Wooster due to younger vines (e.g. Arneis).*

Wooster	LT50 (F)			Kingsville	LT50	
Variety	1/22/2012	1/31/2012		Variety	1/17/2012	2/1/2012
Arneis	-6.2	-2.2		Arneis	-2.0	0.1
Cab Sauv.	-10.8	-5.8		Cabernet Franc	-0.6	-0.2
Carmenere	-11.2	-6.9		Dolcetto	-7.8	-6.3
Dolcetto	-9.9	-7.4		Gamay noir	-8.3	-7.6
Durif	-9.6	-1.8		Pinot noir	-6.3	-5.4
Gamay noir	-12.6	-8.3		Regent	-3.6	-0.6
Kerner	-12.3	-2.2		Siegeerrebe	-5.1	-1.8
Merlot	-6.0	-3.5		Teroldego	-0.8	-1.5
Pinotage	-9.0	-7.2		Petit Manseng	-3.8	0.3
Sangiovese	-5.3	-2.9		Sangiovese	-4.5	-2.6
Siegeerrebe	-6.7	-1.5				
Syrah	-8.1	-6.0				
Malvesia	-8.5	-6.5				
Regent	-5.6	-5.4				
Sauv blanc	-3.6	-0.8				
Teroldego	-3.6	-0.8				