

Vineyard IPM Scouting Report for week of 12 August 2013
UW-Extension Door County and Peninsular Agricultural Research Station

Grape Berry Cracking

Recently, I received an email from a grower wondering why grape berries of St. Pepin were cracking. Some years berries crack and other years grape berry development progresses without any cracked berries. Berry development has three distinct growth phases. After pollination, grape berry growth is rapid and occurs through cell division and cell enlargement. At this time, the sugar content remains low and organic acids accumulate. This period of rapid growth typically lasts for 3 to 4 weeks based on observations of *Vitis vinifera*. The second phase of berry development is a lag phase of growth in which berry growth is slowed while organic acids accumulate to their highest concentrations. During this stage, the berries begin to lose chlorophyll and the berries remain very firm. Stage two last between 2 to 3 weeks. Stage three is marked by a period of rapid berry growth. At this stage the berries begin to soften and sugars accumulate while organic acids decline. The berries' growth takes place by cell enlargement only.

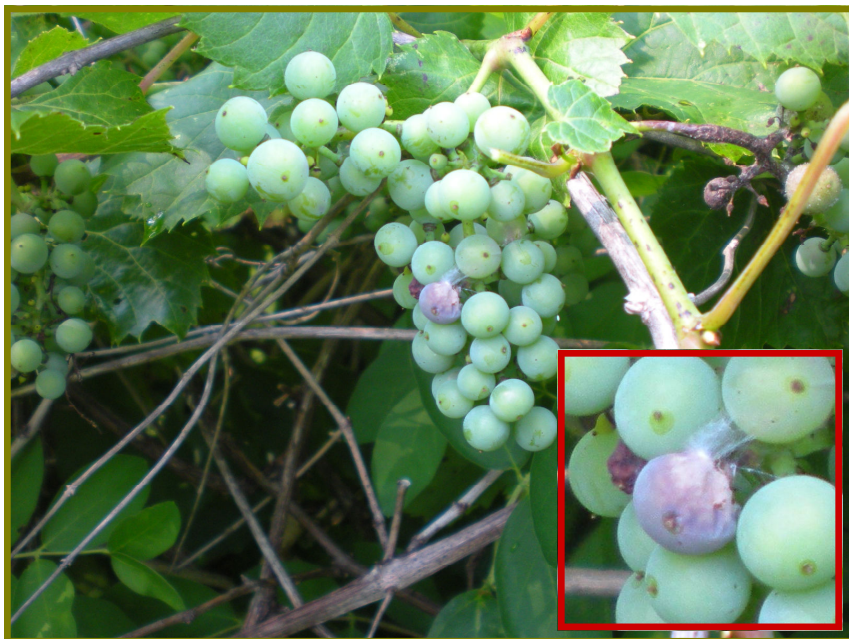
Stage three is the period in which veraison takes place and pigments of red varieties will start to appear. It is at stage three, typically, when berry cracking occurs. Although it is unknown why cracking occurs, it is believed it is the result of cell enlargement being arrested and the interaction with environmental conditions.

Irrigation may play a role in berry cracking. Initial research in the 1980's suggested that heavy irrigation resulted in berry cracking. It is widely known that the internal pressure on berries increases after irrigation. However, recent work by plant physiologist Mark Mathews at UC Davis suggests that berry cracking is more pronounced in vines that are water stressed. So under irrigation, i.e. water stressed vines potentially could be more of a problem than over irrigating. While water stressed vines can contribute to berry cracking, Mathews believes that other physiological or mechanical tears are also responsible for berry cracking. At this time, there is no conclusive answer that can be pointed to that causes berry cracking.

Berry cracking provides an opportunity for pathogens to enter the fruit clusters. Cracked fruit is likely to become infected with bunch rots and so growers should consider protecting fruit once berry cracking has occurred. Berries that are damaged by hail or birds are similarly prone to infection by bunch rot organisms.

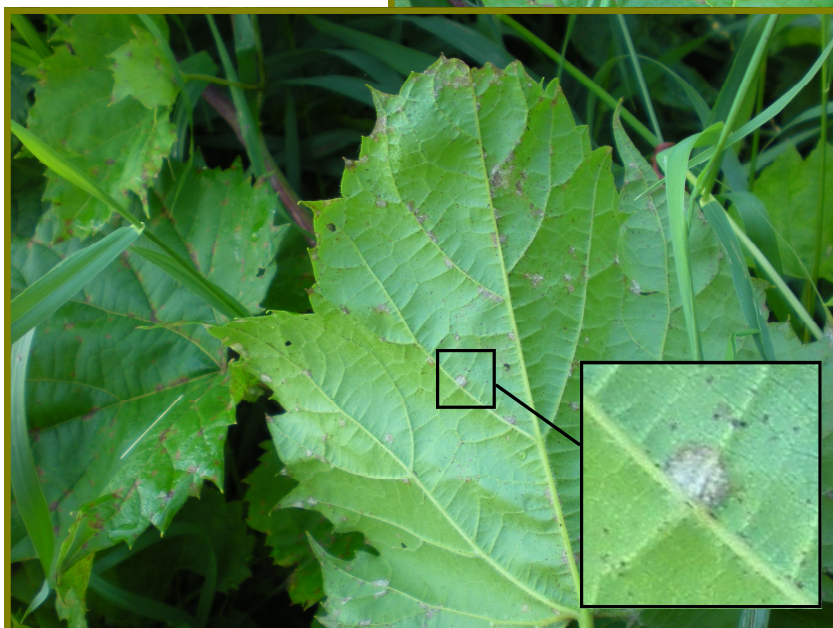
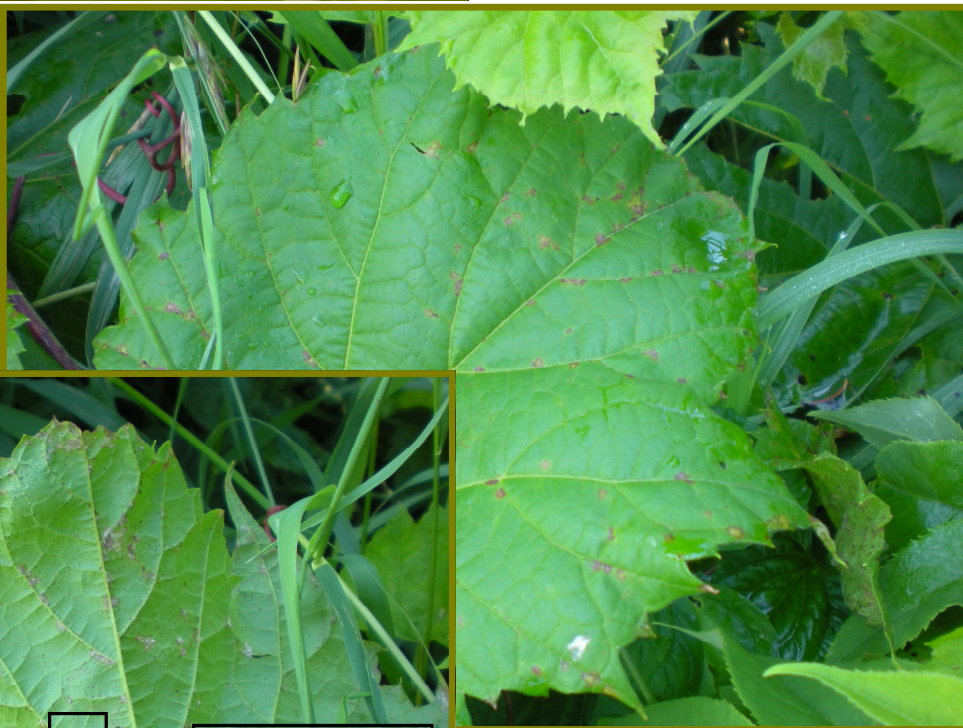


**Cracked berries of St. Pepin. Photo submitted by Jerrold Robaidek
Sampson Valley Vineyard**



**Grape Berry Moth
on wild grapes at
PARS, 7. 22.2013.**

When scouting clusters look for berries that are webbed together and on red grape varieties look for berries that have

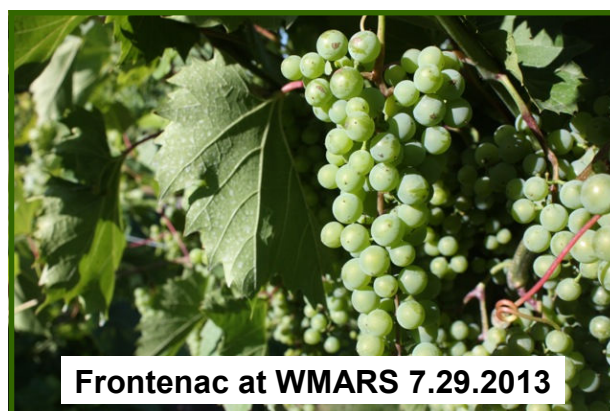
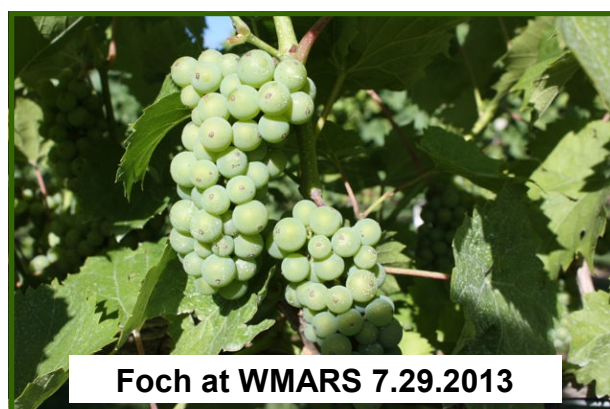


**Downy mildew on wild grape
at PARS.** Upper photo shows
lesions on top of leaf and lower
photo shows downy growth on
lesions. 7.22.2013.

Downy mildew on
tendrils, grape cluster,
and leaf of wild grape
at PARS on
8.12.2013.

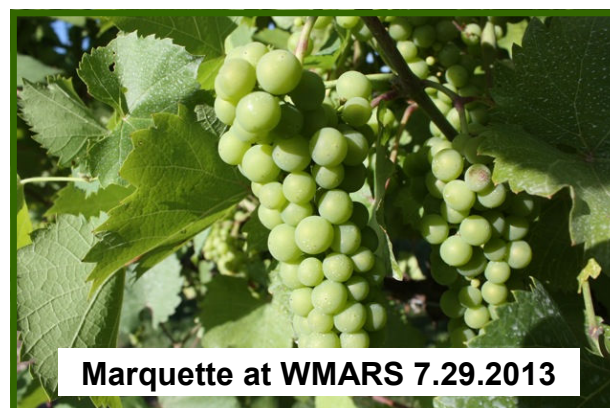
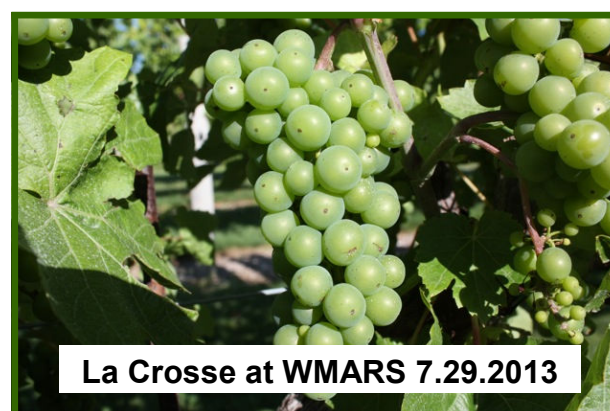


Development of wine grapes in the grape variety trials at the Peninsular Agricultural Research Station (PARS) Sturgeon Bay, WI and West Madison Agricultural Research Station (WMARS), Madison, WI



2013

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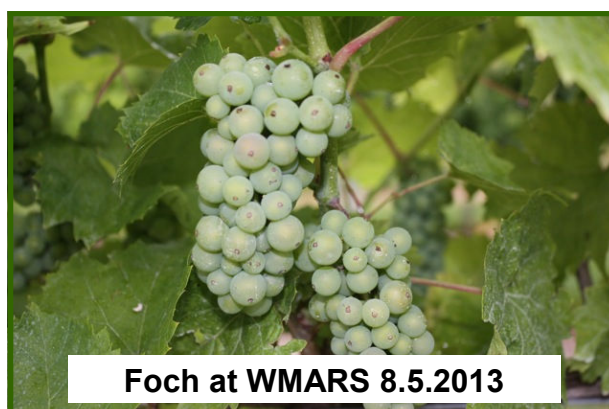
Brianna at PARS 7.22.2013



Brianna at WMARS 8.5.2013



Foch at PARS 7.22.2013



Foch at WMARS 8.5.2013



Frontenac at PARS 7.22.2013



Frontenac at WMARS 8.5.2013

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Brianna at PARS 8.12.2013



Brianna at WMARS 8.12.2013



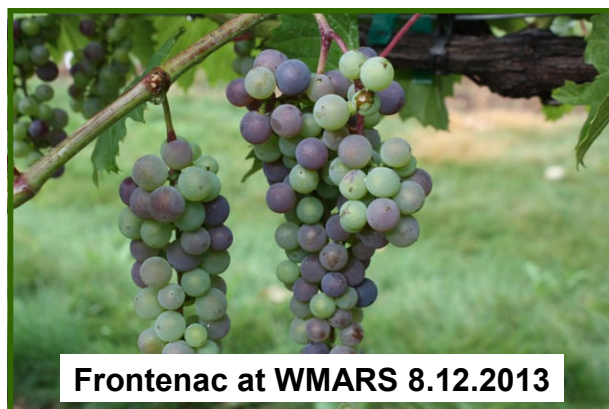
Foch at PARS 8.12.2013



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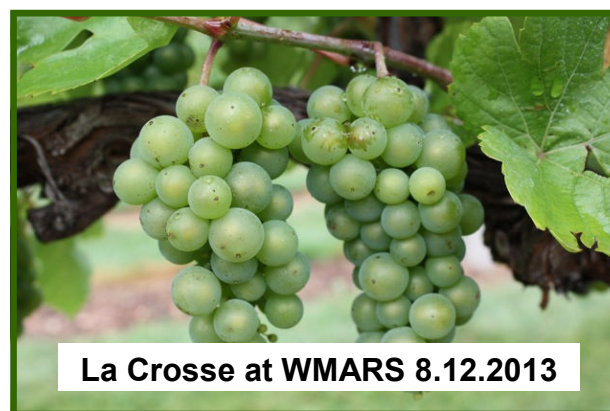
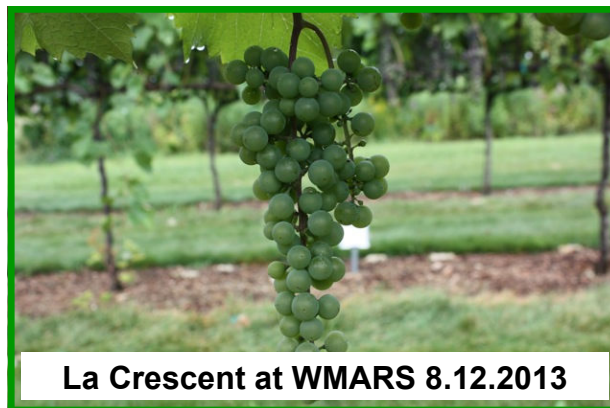
Frontenac at PARS 8.12.2013



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Grape progress update of other varieties in the grape variety trial located at the Peninsular Agricultural Research Station.



Grape progress update of other varieties in the grape variety trial located at the Peninsular Agricultural Research Station.



**Degree Day¹ (base 50) Accumulation from April 1 to August 4, 2013 at
Peninsular Agricultural Research Station in Sturgeon Bay, WI**

Date	2013	2012	5 Year Average²
4/1 to 8/4	1226	1612	1439

¹Modified method.

²Average from 2008 to 2012.

**Degree Day¹ (base 50) Accumulation from April 1 to August 4, 2013 at
West Madison**

Date	2013	2012	5 Year Average²
4/1 to 8/4	1658	2079	1860

¹Modified method.

²Average from 2008 to 2012.

**Accumulated degree days¹ (base 50) for the month of March in Sturgeon Bay and
Madison, WI.**

Year	Madison WI	Sturgeon Bay WI
GDD (base 50, ceiling 86)		
2013	1 ²	0
2012	252	106
2011	13	3
2010	72	38
2009	51	12
2008	1	0
2007	90	41
2006	22	7
2005	40	9
2004	49	11

¹Modified method.

²Data from <http://www.doa.state.wi.us/degreedays/>

Please scout your vineyards on a regularly scheduled basis in an effort to manage problem pests. This report contains information on scouting reports from specific locations and may not reflect pest problems in your vineyard. If you would like more information on IPM in grapes, please contact Dean Volenberg at (920)746-2260 or dean.volenberg@ces.uwex.edu