

Vineyard IPM Scouting Report for week of 2 June 2014
UW-Extension Door County and Peninsular Agricultural Research Station

Leaf Phylloxera

This past week there have been some reports of galls appearing on immature leaves (see photo on right). Most of these reports of galls are on the varieties Frontenac and Frontenac gris. Initially my thoughts were that it was too early in the season for phylloxera to be appearing. However, I thought back to the 2009 season and remembered seeing early galls appearing on Frontenac. The 2009 growing season started similar to the 2014 season in that both followed extremely cold winters. Look back to the first report and you will see in the tables that the

winter cold events were similar. I am not sure what this means as far as phylloxera getting a jump on the season. What we have observed this year and in 2009 is the first generation of phylloxera. Often times this first generation goes unnoticed simply because there are so few galls. However with Frontenac the galls are readily noticeable simply because the deep red color of the galls contrasts with the deep green leaves. The question now is should the first generation be controlled once the galls have formed.



First generation galls of phylloxera on Frontenac on May 27, 2014. Photo submitted by Steven Koenig.

Once the galls have formed with the female entombed within the gall it is very difficult to control (kill) the females within the galls with an insecticide. The first generation of phylloxera typically results in only a few galls on the third and fourth leaves. Within these galls the female is laying up to two hundred eggs that will become the second generation. You should focus on controlling the second and third generation of crawlers. After the third generation, the seceding generations of crawlers hatch from the eggs at different times. This results in age structural classes within a generation making control more difficult. When will the second generation hatch and emerge from the galls? Emergence of the second generation needs to be monitored so control measures can be targeted to manage the emerging crawlers.

You need to begin to scout and monitor the galls for egg hatch. There are a couple of ways to monitor egg hatch. You can dissect galls every couple of days and observe if egg hatch has occurred. Simply slice through a gall and look within the gall with a 10X hand lens. What you are looking for are crawlers.

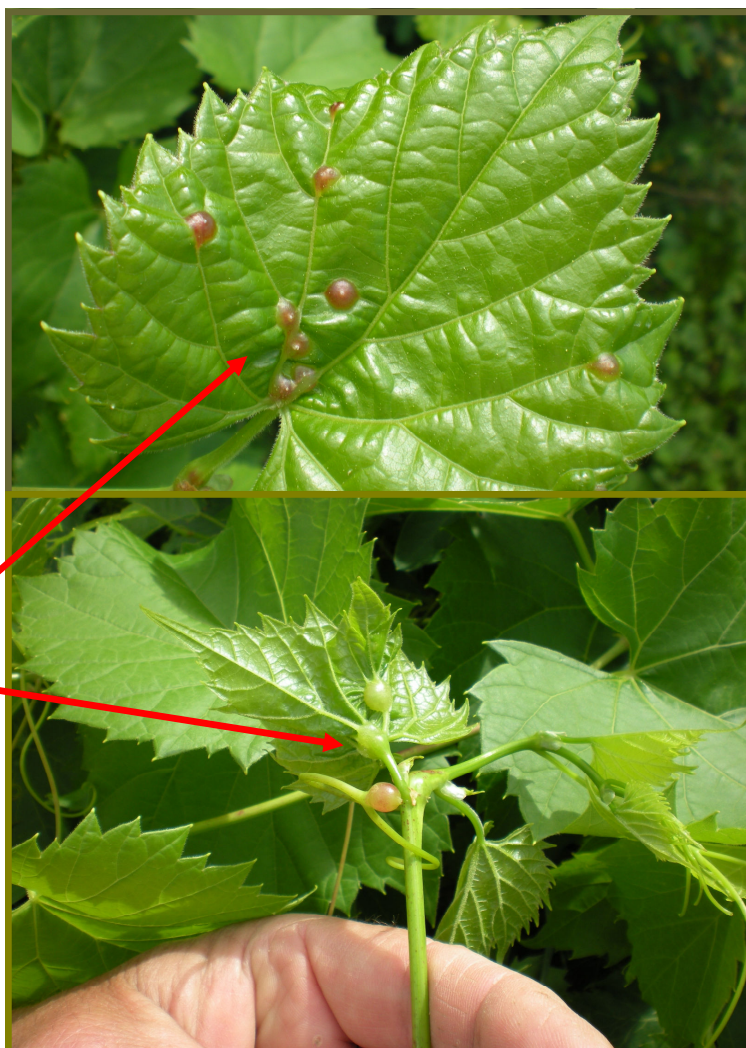
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Another way to monitor for egg hatch is to place double sided sticky tape on the shoot above the galled leaf. After egg hatch the crawlers will emerge from the gall and travel towards the shoot tip to start the gall process over again. As the crawlers travel to the shoot tip they will become stuck to the double sided sticky tape. Again you will need a 10X hand lens to observe the presence or absence of the crawlers on the sticky tape.



Be aware that you may find other galls that look similar to phylloxera galls on green grape tissues starting in June. The most common galls are from the grape tumid gallmaker. Grape tumid galls can be found on leaves, petioles, tendrils, and flower clusters. Unlike phylloxera galls, grape tumid galls are smooth in appearance. A sure way to differentiate between phylloxera and grape tumid galls is to dissect the galls. Grape tumid galls will contain a small larvae that is pale yellow to bright orange in color. Before dissecting the gall observe if an exit hole is apparent. If an exit hole is visible the larvae has already left the gall and dropped to the ground to pupate. Grape tumid galls seldom become so prevalent that they cause economic damage.

Use double sided sticky tape to monitor for crawlers emerging from “mother galls” on leaves below the sticky tape. Photo credit: Don Johnson et. al 2010 University of Arkansas at http://comp.uark.edu/~dtjohnso/GP_Johnson_Vienna_Sept_10.pdf



Galls from the grape tumid gallmaker. A quick glance may suggest that these galls are from phylloxera. Take notice of the smooth appearance compared to phylloxera galls on the following page.

Stages of grape Phylloxera



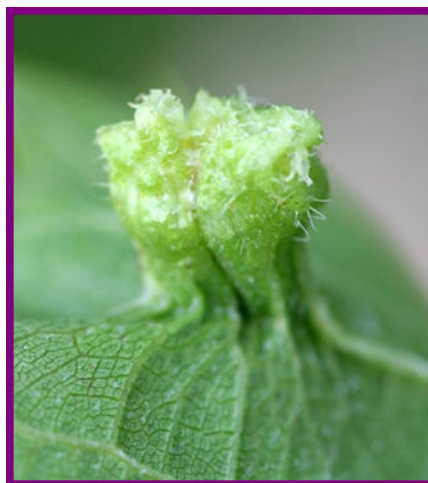
Mature female on upper leaf surface of grape leaf.



Mature female injects saliva that starts gall initiation. At this stage of gall development the female is prone to contact insecticides.



Young galls become apparent on underside of leaf surface.



Mature galls contain female and up to 200 eggs.



As eggs hatch the gall splits open and crawlers emerge.



Inside of gall showing dead female and young crawlers.

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



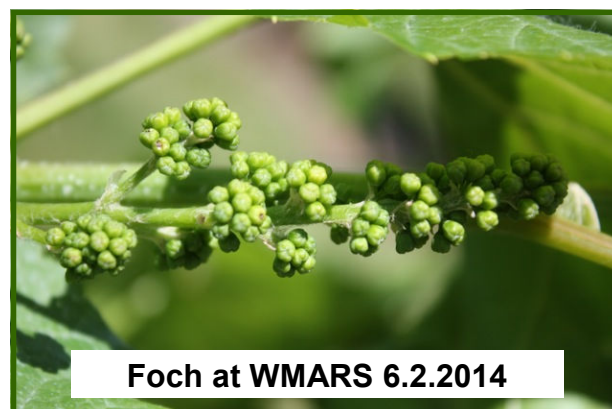
Brianna at PARS 6.2.2014



Brianna at WMARS 6.2.2014



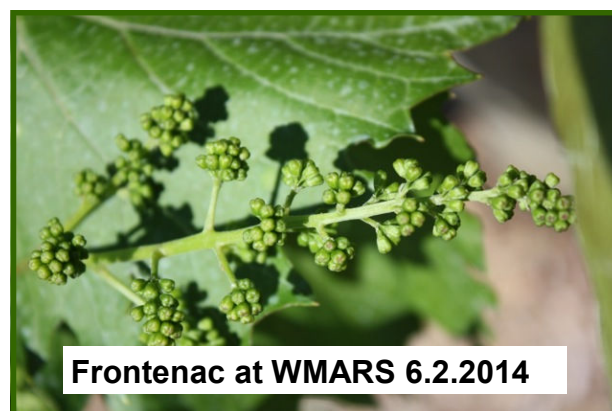
Foch at PARS 6.2.2014



Foch at WMARS 6.2.2014



Frontenac at PARS 6.2.2014



Frontenac at WMARS 6.2.2014

2014

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



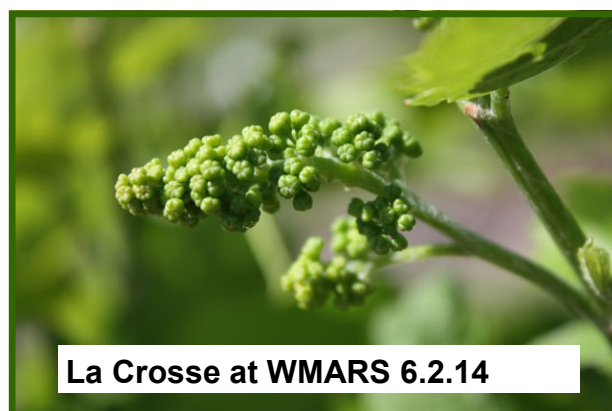
La Crescent at PARS 6.2.14



La Crescent at WMARS 6.2.14



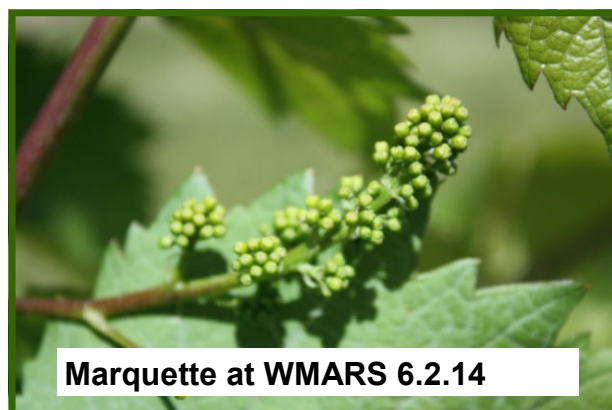
La Crosse at PARS 6.2.14



La Crosse at WMARS 6.2.14



Marquette at PARS 6.2.14



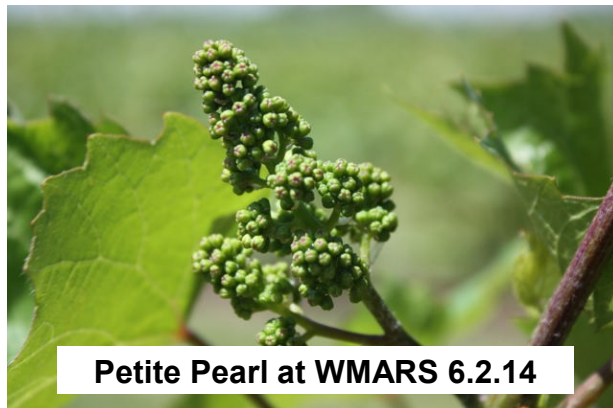
Marquette at WMARS 6.2.14

2014

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



Petite Pearl at PARS 6.2.14



Petite Pearl at WMARS 6.2.14



Aromella at PARS 6.2.14



Leon Millot at PARS 6.2.14



Vignoles at PARS 6.2.14



Noiret at PARS 6.2.14

2014

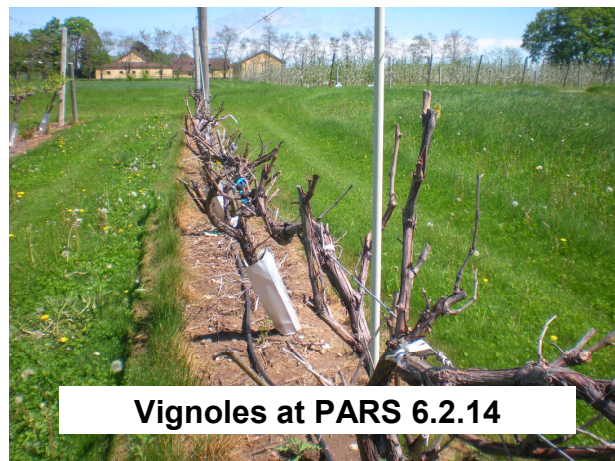
Grape varieties showing the greatest winter injury at the trial at the Peninsular Agricultural Research Station, Sturgeon Bay, WI.



Aromella at PARS 6.2.14



Leon Millot at PARS 6.2.14



Vignoles at PARS 6.2.14



Noiret at PARS 6.2.14

....as a comparison to Marechal Foch and Frontenac (below) at the trial at the Peninsular Agricultural Research Station, Sturgeon Bay, WI.



Foch at PARS 6.2.14



Frontenac at PARS 6.2.14

2014

**Degree Day¹ (base 50) Accumulation from April 1 to May 26, 2014 at
Peninsular Agricultural Research Station in Sturgeon Bay, WI**

Date	2014	2013	5 Year Average²
4/1 to 5/26	192	191	244

¹Modified method.

²Average from 2009 to 2013.

**Degree Day¹ (base 50) Accumulation from April 1 to May 26, 2014 at
West Madison**

Date	2014	2013	5 Year Average²
4/1 to 5/26	339	364	410

¹Modified method.

²Average from 2009 to 2013.

**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)		
2014	2 ²	nd
2013	1	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