

Vineyard IPM Scouting Report for week of 7 June 2010
UW-Extension Door County and Peninsular Agricultural Research Station
Sturgeon Bay, WI

Galls and Grapevines

A number of insects can cause galls on grape foliage. The most common gall that many grape growers are familiar with is the leaf form of grape phylloxera, caused by an aphid-like insect. A number of various shaped galls can occur on grapevines caused by the attack of small midge flies (family: Cecidomyiidae).

Gall formation in many instances is initiated by egg laying (oviposition) by the adult form of an insect or by feeding of early larval stages. Feeding by certain gall making insects results in the release of salivary fluids that may contain plant growth regulating substances (Auxins, IAA) and plant digesting enzymes, pectinases, proteases, and cellulases. The growth regulating substances released by feeding insects work in concert with the grapevines' response to insect attack. The grapevines' response to mechanical or chemical irritation is to isolate the toxins or invasion, resulting in a tumorous mass of tissue or gall. Galls may look destructive, but galls seldom injure the plant.

Once galls are apparent, there is no chemical control method that will eliminate the galls. Grapevines can support a large number of galls and still grow and reproduce normally. Grapevine tissues that are galled can be removed or pruned out and destroyed to reduce the number of future gall insects. Severe galling of newly established plants may lengthen the time to productivity, for example severe galling by phylloxera. However, most galls that infect the soft tissue (leaves, tendrils, shoots) of grapevine are of little economic importance.



Grape Filbert Gall

Is a rarely seen gall caused by the gall maker midge *Schizomyia coryloides*.



Grape Tumid Gall

Also called grape tomato gall. The gall is caused by the fly *Janetiella brevicauda*.



Midge galls

These galls are caused by a small fly. These galls were found on Foch and La Crosse grape leaves this week in Northeastern Wisconsin.

Grape Anthracnose – Steve Jordan

Grape anthracnose, also known as bird's eye rot, while often considered more of a threat in states south of Wisconsin, can still be a problem in Wisconsin vineyards. Early in the growing season, it is easy to confuse symptoms of grape anthracnose with black rot (see last week's IPM newsletter for a description of black rot), as they usually appear at the same time and have very similar symptoms. Thankfully, management of the two diseases is nearly identical.

The cause of grape anthracnose is the fungus, *Elsinoë ampelina*. It overwinters on infected canes and berries on the trellis or the vineyard floor. In the Spring, fruiting bodies on the infected tissue will produce spores during prolonged wet periods of longer than 24 hours with a minimum temperature of 36° F. These spores are then splashed to susceptible tissue. In cold weather, it requires approximately 2 weeks for symptoms of infection to become visible. Warmer temperature shortens the period of wetness required for infection and expression of the disease. At 90° F, only 4 days are required for expression of the disease. Infected tissue will eventually form fruiting bodies in the same growing season that release spores during wet weather, creating a second source of inoculum. Heavy rainfall and warm temperatures heavily favor infection and spread of anthracnose.

Symptoms

Anthracnose can infect all green tissue on a vine. The younger the tissue, the more susceptible it is to anthracnose. On leaves, symptoms are expressed as small, dark lesions with brown to black margins and grey to brown interiors. Eventually, the interior of the lesion will drop out, leaving a "shot hole" appearance. Severe infection will cause distortion and curling of the leaf.

Shoot symptoms appear as small, sunken lesions with reddish margins and grey interiors. As a lesion ages, the margin will turn dark brown to black and develop a rough texture. Large lesions can lead to cracking of the shoot. This can cause the shoot to weaken and break.

Symptoms on the fruit are very distinct. Berry lesions initially develop as small, circular spots that are reddish in color. As a lesion ages, a zonate or target board appearance will form with a sunken, reddish interior and a dark, raised margin. It is this appearance that gives the disease its other name, bird's eye rot. Lesions on the fruit can lead to berry cracking.



Anthracnose on fruit (Valiant)



Anthracnose on leaf (Valiant)



Anthracnose on shoot (Frontenac). This picture was taken last week (June 3) in a vineyard in St. Charles, Illinois.

Management

Sanitation is an important component of anthracnose management. During the dormant season, infected canes should be pruned out and burned. Infected fruit and cluster stems should also be removed from the trellis and vineyard floor. Also, any cultural practices to improve air flow within the canopy and decrease the duration of wet periods will help reduce conditions favorable to anthracnose.

A potential source of inoculum for anthracnose is wild grapevine located close to a vineyard. While eradication of wild grapevine is not often possible, removing it from fence row close to the vineyard will help, as the spores are spread short distances by splashing rainfall, and not by wind.

A fungicide program designed to control black rot will be effective in controlling anthracnose; they both appear at the same time in vineyards and fungicides effective for controlling black rot seem to work well for anthracnose. Just as it is for black rot, the period from pre-bloom to 6-7 weeks post-bloom is critical for protecting fruit from infection by anthracnose. A common recommendation for managing anthracnose is a dormant application of lime sulfur prior to bud break. Lime sulfur will kill some of the initial inoculum residing in the vineyard and reduce the amount of initial disease, but is only necessary for vineyards with a history of anthracnose.

This article was based on information found in the following:

Anthracnose of Grape (HYG-3208-08), Michael A. Ellis and Omer Erincik, Department of Plant Pathology, The Ohio State University

http://ohioline.osu.edu/hyg-fact/3000/pdf/HYG_3208_08.pdf

Anthracnose - *Elsinoë ampelina*, Annemiek Schilder, Department of Plant Pathology, Michigan State University

<http://grapes.msu.edu/anthracnose.htm>

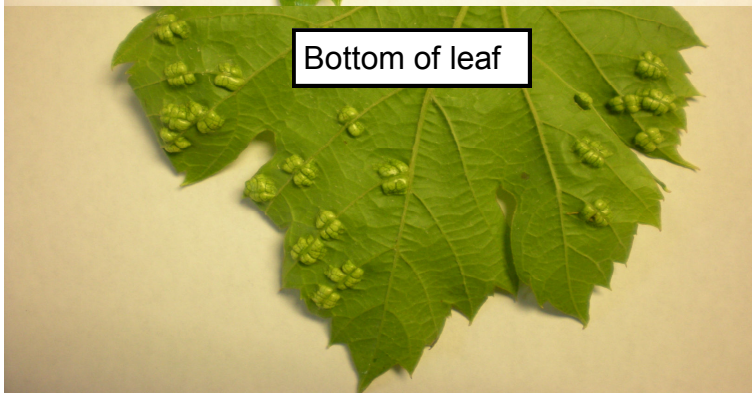
Midwest Small Fruit and Grape Spray Guide 2010

<http://www.ag.purdue.edu/hla/Hort/Documents/ID-169-2010.pdf>

What's lurking in or near the vineyard this week?

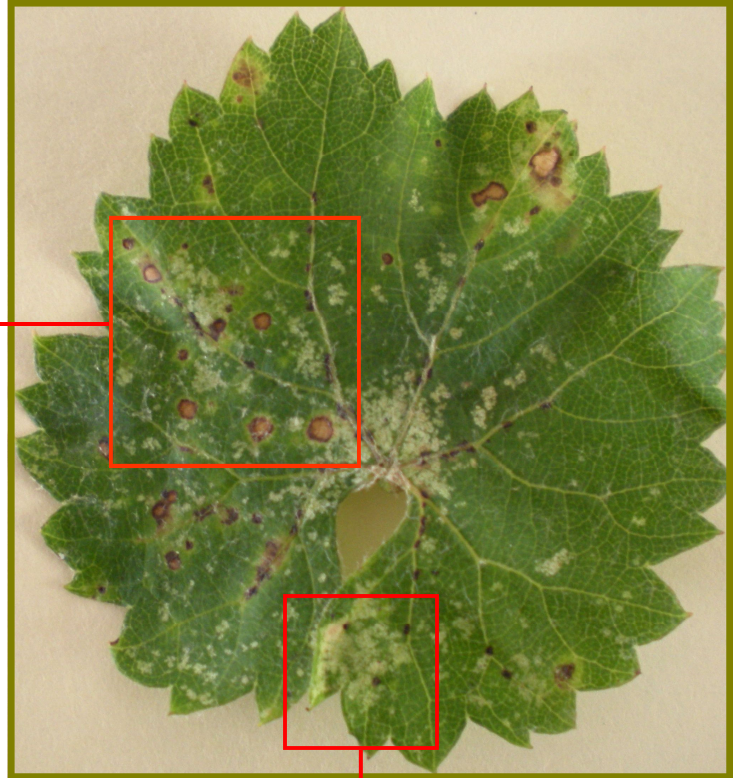
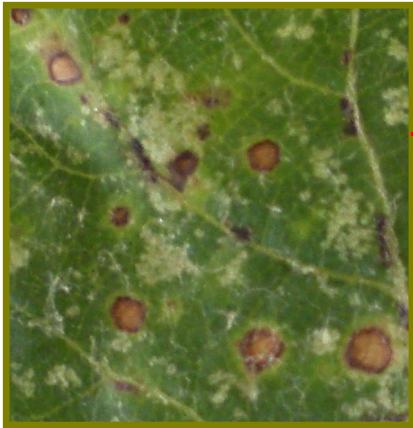


This grapevine (left) showing puckerred and tattered leaves with shot holing is likely from Mirid feeding. The attack took place while the leaves were still young and unfolded. If you look closely at the photo, there is a purple coloration or sting where the insect(s) were feeding. The damage likely took place earlier in the season by nymphs. Two insects may have caused this damage, the banded grape bug or *Lygocoris inconspicu-*ous. The adult stages of both these insects are predators and do not attack grapes

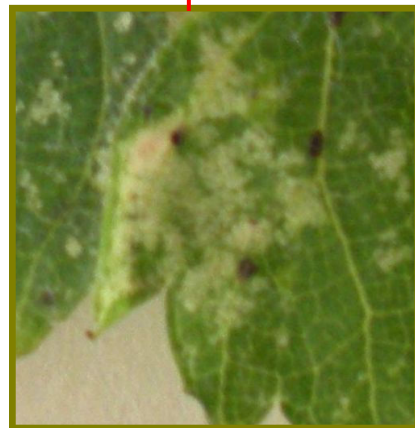


The grape leaves (left) are showing galls from attack of small flies or midges. These galls were found on grape leaves of both La Crosse and Foch in Northeastern Wisconsin.

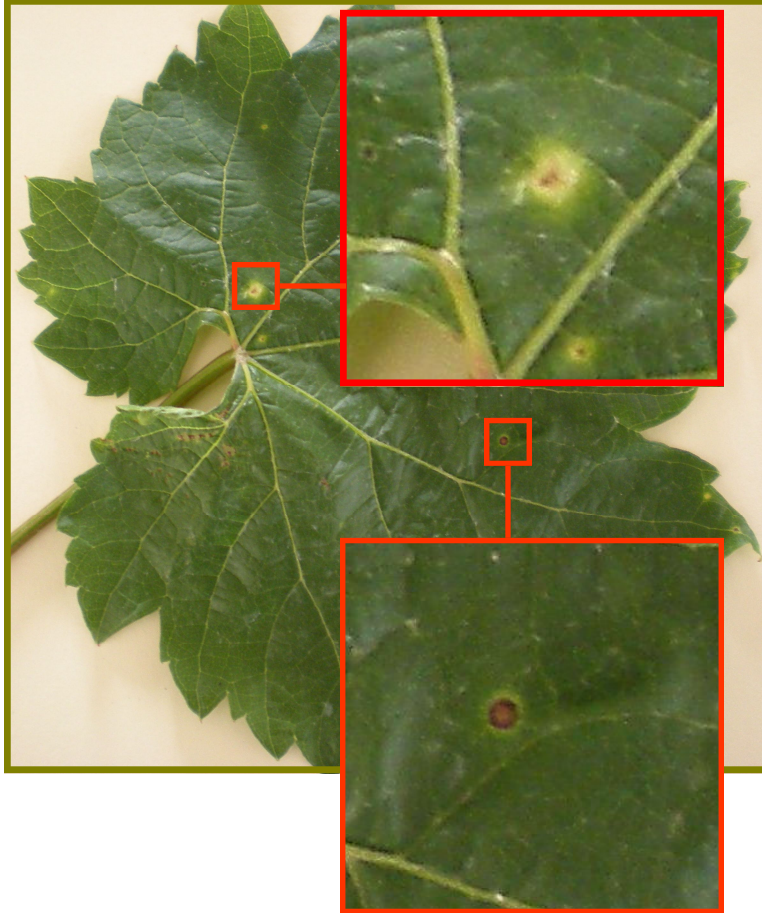
What's lurking
in or near the vineyard this week?



The grape leaf of La Crescent (above right) has a disease and insect problem. The stippled or light colored patches are the result of adults or larvae of the grape flea beetle feeding. The brown spots are the result of the pathogen black rot.



What's lurking
in or near the vineyard this week?

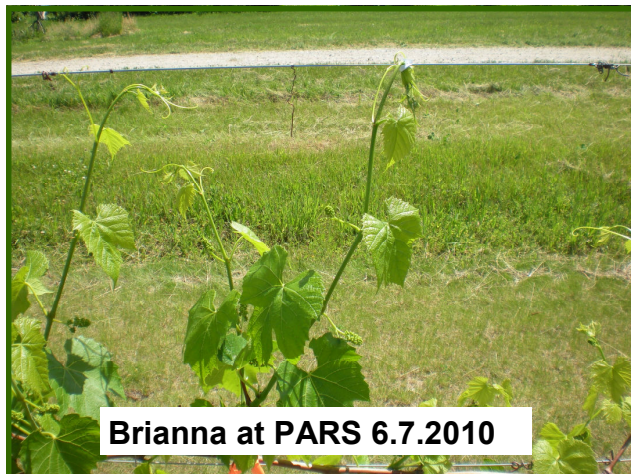


The grape leaf of La Crescent (left) has a disease problem. The leaf has both phomopsis (top inset) and black rot infection (bottom inset) symptomology.



Grape Plume Moth. Grape leaves at shoot apex woven and webbed together (left photo). Within the woven leaves is the larva (right photo).

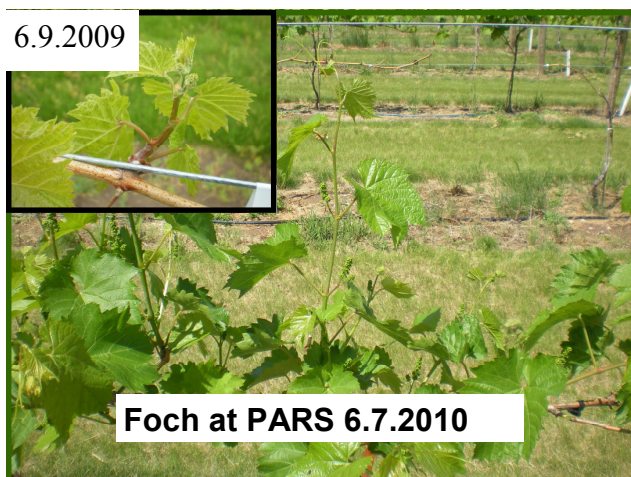
Development of wine grapes at the Peninsular Agricultural Research Station (PARS) Sturgeon Bay, WI and the West Madison Agricultural Research Station (WMARS), Madison, WI. Buds damaged by frost at PARS on 5/8 and 5/9/2010¹.



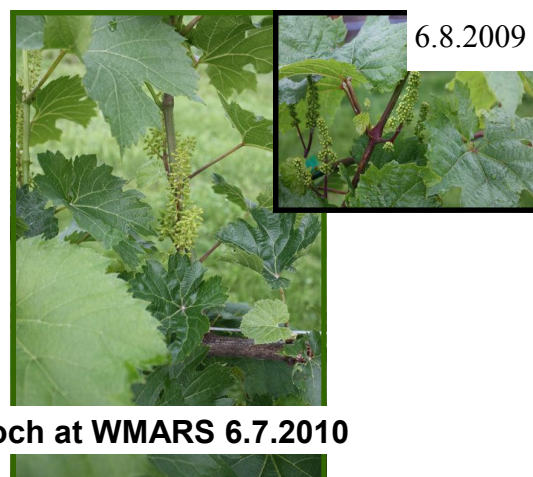
Brianna at PARS 6.7.2010



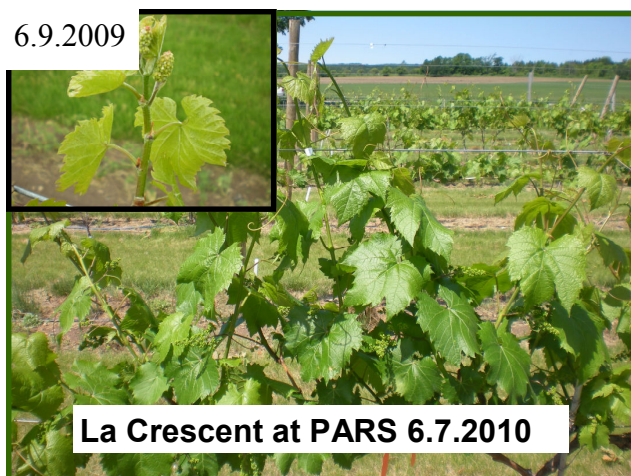
Brianna at WMARS 6.7.2010



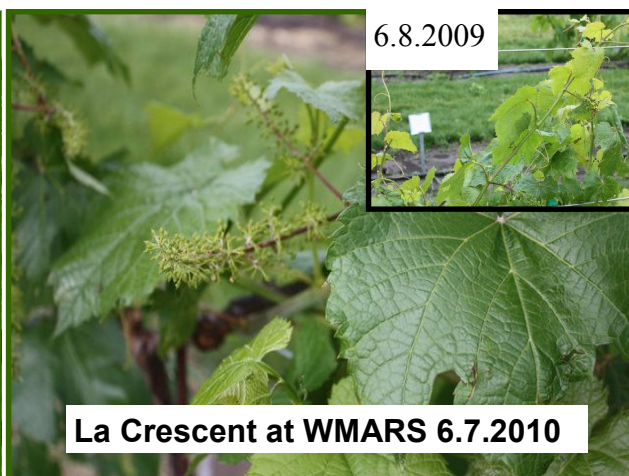
Foch at PARS 6.7.2010



Foch at WMARS 6.7.2010



La Crescent at PARS 6.7.2010



La Crescent at WMARS 6.7.2010

¹New buds selected at PARS this week for following phenology since buds featured in previous issue (week of 5.10.2010) of the IPM report were damaged by frost.

Development of wine grapes at the Peninsular Agricultural Research Station (PARS) Sturgeon Bay, WI and the West Madison Agricultural Research Station (WMARS), Madison, WI. [Buds damaged by frost at PARS on 5/8 and 5/9/2010¹](#).



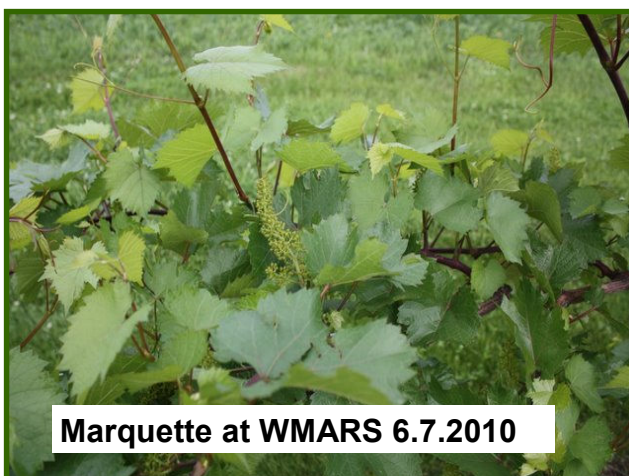
La Crosse at PARS 6.7.2010



La Crosse at WMARS 6.7.2010



Marquette at PARS 6.7.2010



Marquette at WMARS 6.7.2010



Wild grape at PARS 6.7.2010

¹New buds selected at PARS this week for following phenology since buds featured in previous issue (week of 5.10.2010) of the IPM report were damaged by frost.

Degree Day¹ (base 50) Accumulation since April 1, 2010 at Peninsular Agricultural Research Station in Sturgeon Bay, WI

Date	2010	2009	5 Year Average ²
6/6/2010	471	323	379

¹Modified method.

²Average from 2005 to 2009.

Degree Day¹ (base 50) Accumulation since April 1, 2010 at West Madison Agricultural Research Station, Madison, WI

Date	2010	2009	4 Year Average ²
6/6/2010	667	475	538

¹Modified method.

²Average from 2006 to 2009.

Accumulated degree days¹ (base 50) for the month of March at Peninsular Agricultural Research Station.

Year	Degree days (base 50)
2010	42
2009	12
2008	0
2007	37
2006	9
2005	8
2004	9

¹Modified method.

Low temperatures reported at Peninsular Agricultural Research Station, Sturgeon Bay, WI.

Date	Low °F
5/3/2010	44
5/4/2010	48
5/5/2010	41
5/6/2010	37
5/7/2010	32
5/8/2010	29 ¹
5/9/2010	29 ¹

¹Frost damage reported to some grape varieties in grape variety trial.

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