

Vineyard IPM Scouting Report for week of June 8, 2009
UW-Extension Door County and Peninsular Agricultural Research Station
Sturgeon Bay, WI

Powdery Mildew

Powdery mildew is the most prevalent fungal disease problem of grapes in Wisconsin. The disease impacts not only the leaves, tendrils, and shoots but also the grapes themselves. Infection of the grape berries by powdery mildew near the time of bunch closure can result in secondary problems such as bunch rot. Infection of the leaves, results in a decrease in photosynthesis that results in reduced Brix levels, reduced vine growth, and decreased winter hardiness. Powdery mildew is a native disease to the northeastern United States. Understandably, native grapes have some resistance to powdery mildew, whereas most all French-American hybrids are highly susceptible to infection by powdery mildew.

Powdery mildew overwinters on the bark of vines in spore bearing structures that protect the spores from decay. When a tenth of an inch or more of rain occurs and the temperature is at least 50 degrees or more, the spore bearing structures swell and the spores are released. This first release of spores is the primary infection period and usually starts near bud break and continues until the post bloom period. Moisture is not necessary for infection to occur after the spores have been released. Be aware that 50 degrees is the minimum temperature for infection to occur, but higher temperatures (between 59 and 68 degrees or higher) results in much greater potential for infection. Temperatures above 90 degrees often results in little or no infection by powdery mildew.

If the primary infection is successful a white powdery looking mat appears on vegetative surfaces. This powdery mass produces more spores that leads to more infections. These spores are blown by the wind and do not require rain for infection to occur. The amount of spores produced is regulated by temperature. Temperatures between 65 to 85 degrees results in a new generation of spores every 6 to 7 days. Whereas cool temperatures (mid 50's), the generation time is approximately 14 to 16 days. The cool temperatures this spring should allow you to lengthen the time between applications for control of powdery mildew.

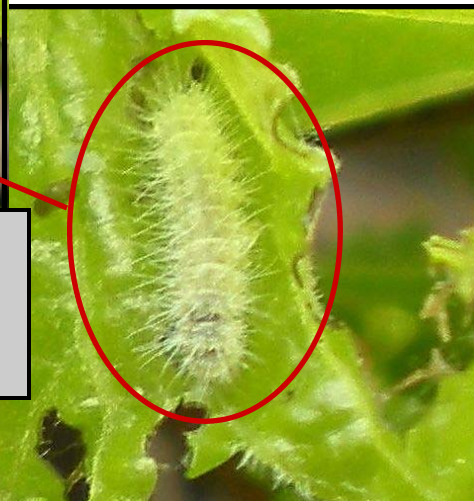
However, bear in mind a couple IPM principles- consult last year's records. If you had a powdery mildew problem last year, there likely is a large source of powdery mildew spores in your vineyard this year. Managing powdery mildew early with dormant sprays and then applying protective fungicides beginning at bud-break will normally help prevent later outbreaks, but remember the primary infection period for powdery mildew continues post bloom. Berry clusters are susceptible to infection for approximately 4 weeks post-bloom. To reduce berry infection, remove 4 to 6 basal cane grape leaves around the clusters to hasten the cuticle development of the grapes exposed to sunlight. Leaf removal also allows additional air and fungicides to penetrate the grape clusters, reducing the potential for powdery mildew infection.

Since powdery mildew can be a consistent threat throughout the growing season, fungicides are often applied on regular schedule for disease management. Applying fungicides consistently puts powdery mildew under tremendous selection pressure which can result in fungicide resistant populations. To avert fungicide resistance, do not apply fungicides from the same chemical class more than twice repeatedly. There are a large number of fungicides available for powdery mildew management and you should rotate fungicides from different fungicide classes (see table on page 2). For example, if you applied a sterol inhibiting fungicide (Rubigan, Nova, Elite, or Procure) one time, use a fungicide from another fungicide class during the next application. By rotating to different fungicide classes, you reduce the risk of powdery mildew developing resistance.

Fungicides for powdery mildew management in Wisconsin.

Trade name	Chemical name	Use rate	Reapplication interval	Begin applications	Fungicide class	PHI (days)
Elite 45 WP	tebuconazole	4 oz./acre	14-21 days	1-5 in. shoot	Sterol	14
Nova 40W	myclobutanil	3-5 oz./acre	21 day maximum	1-5 in. shoot	Sterol	14
Procure 50WS	triflumizole	4-8 oz./acre	14-21 days	1-5 in. shoot	Sterol	7
Rubigan 1 EC	fenarimol	2-6 oz./acre	14-18 days	1-5 in. shoot	Sterol	21
Abound 2F	azoxystrobin	10-15.5 fl. Oz./acre	10-14 days	1-5 in. shoot	Strobilurin	14
Flint	trifloxystrobin	1.5-2 oz./acre	14-21 days	6-12 in. shoot	Strobilurin	14
Pristine	Pyraclostrobin (boscalid)	8-12.5 oz./acre	14-21 days	Bud-break	Strobilurin + Carboximide	14
Sovran	kresoxim-methyl	3.2-4.8 oz./acre	14-21 days	Bud-break	Strobilurin	14
Endura	boscalid	4.5 oz./acre	10-14 days	Bud-break	Carboximide	14
Topsin-M 70 WDG	Thiophanate-methyl	3/4-11/2 lbs/acre	14-21 days	Bud-break	Benzimidazole	14
Quintec	quinoxifen	3-6.6 fl.oz./acre	14-21 days	6-12 in. shoot	Quinolines	14
Adament 50 WG	Tebuconazole & trifloxystrobin	3-4 oz./acre	14-21 days	6-12 in. shoot	Sterol & Strobilurin	14
Armicarb 100	potassium bicarbonate	2.5 –5 lbs/acre	5-14 days	First sign		0
Armicarb O	potassium bicarbonate	2.5-5 lbs/acre	5-14 days	First sign		0
Various	Sulfur	Use label rates				
Various	Fixed Copper	Use label rates				
Glacial Spray-Fluid	Petroleum Oil	1 –2% concentration	10-21 days	Pre-bloom		0

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



Grape Plume Moth, *Geina persicellidactylus* (Fitch) (Lepidoptera: Pterophoridae) on wild grapes at PARS



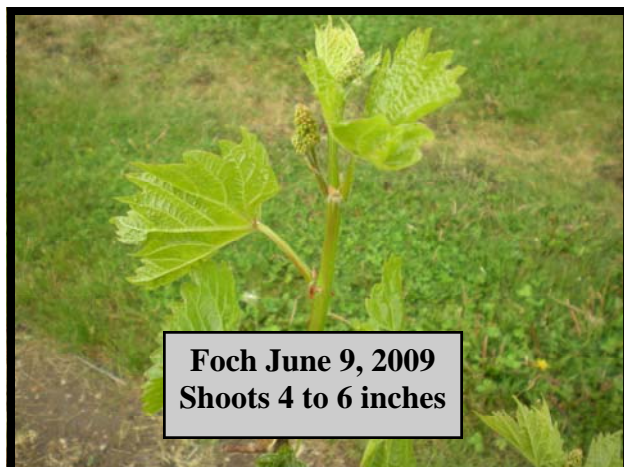
Oblique-Banded Leafroller on wild grapes at PARS



Green Fruitworm on wild grapes at PARS



How are well established mature grapevines developing in Sturgeon, Bay Wisconsin?



How are well established mature grapevines developing in Vernon County Wisconsin?



Second year Foch and La Crosse grapevines at Spooner Agricultural Research Station.



What stage are the second year grapevines at West Madison Agricultural Research Station?



Foch West Madison ARS June 8, 2009
Shoots 30 inches



La Crescent West Madison ARS June 8, 2009
Shoots 23 inches

What stage are the second year grapevines at Peninsular Agricultural Research Station?



Foch Peninsular ARS June 9, 2009
Shoots 4 to 6 inches



La Crescent Peninsular ARS June 9, 2009
Shoots 4 to 6 inches

Growing Degree Days¹ from April 1 to June 7			
	2009	2008	5 Yr. average
Peninsular ARS	325	338	391
W. Madison ARS	481	477	582²

¹Modified method
²3 year average for West Madison ARS.

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