



Cold Climate Grape IPM News

Lorraine P. Berkett, IPM Specialist
June 22, 2007

Stage of Development -

Depending on the grape cultivar and the location of the vineyard, it appears that development ranges from pre-bloom to fruit set.



Pre-Bloom



Bloom

Disease Management

As mentioned in the [last issue](#), the period from immediate pre-bloom through 3-4 weeks following bloom is a very important time for disease management. The immediate pre-bloom through the second post-bloom fungicide applications are key sprays in managing **Phomopsis**, **Black Rot**, **Downy Mildew**, and **Powdery Mildew**. Even though it has been drier during this growing season compared to last year, do not get lulled into thinking that infection will not take place. For example, with **Black Rot**, it only takes 8 hours of leaf wetness following a rain if the temperature is 65 F for infection to occur, and less time at higher temperatures (see Table below). This means that if you get a few on and off showers that do not amount to much in terms of inches of rain, they may be important for infection if the leaves remain wet over the duration of the day or night. This is why keeping the canopy open and weeds low will facilitate air flow and drying, lowering the risk of infection.

Table of Hours of Leaf Wetness
required for a
Black Rot Infection Period
at various temperatures following a rain.

From: [2007 New York and Pennsylvania Pest Management Guidelines](#)

Temp (F)	Hours ^a
50	24
55	12
60	9
65	8
70	7
75	7
80	6
85	9
90	12

Source: R. A. Spotts. The Ohio State University
a. Hours of continual wetness from rain

The following are the various **disease symptoms** observed over the last two days in Vermont:

Black Rot Lesions



Phomopsis Cane and Leaf Spot

Note proximity of infected leaf to overwintered black pycnidia (small, black round structures) on canes from which initial spores are released.



Small, pin-head size pycnidia on older cane.



Lesions on Shoots



Foliar Lesions

The good news is that symptoms of **Powdery Mildew** and **Downy Mildew** were not evident yet, at least on the vines that were observed. Information about the diseases and more pictures on what to look for in your vineyard can be found in the following fact sheets:

Phomopsis - <http://www.nysipm.cornell.edu/factsheets/grapes/diseases/phomopsis.pdf>

Black rot - http://www.nysipm.cornell.edu/factsheets/grapes/diseases/grape_br.pdf

Downy mildew - http://www.nysipm.cornell.edu/factsheets/grapes/diseases/downy_mildew.pdf

Powdery mildew - http://www.nysipm.cornell.edu/factsheets/grapes/diseases/grape_pm.pdf

Arthropod Management

As mentioned in the last issue of this newsletter, if you have a problem with **Phylloxera-leaf form** on certain cultivars, an effective time to manage this insect would be when galls are first noticed (**around Immediate Pre-Bloom**) and at the time of **First Post Bloom spray**. On the vines that were observed over the last two days, only the very beginning of gall formation was observed (see below). Some of the insecticide options were discussed in the [last issue](#) of this newsletter; details can be found in the

[2007 New York and Pennsylvania Pest Management Guidelines](#)



Phylloxera galls forming on the youngest leaves on the vine.

The **1st Post-Bloom spray** is also the time to manage the Grape Berry Moth (GBM) if your vineyard is considered in the “high risk” category.

How can you determine if your vineyard is at “high risk” ?

.... By reading the Risk Assessment protocol developed by Martinson, et al.

The Risk Assessment protocol can be found at:

<http://www.nysaes.cornell.edu/pubs/fls/OCRPDF/138a.pdf>

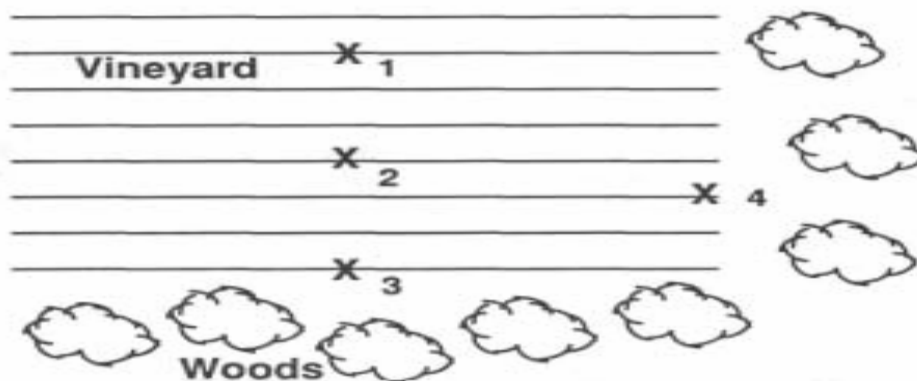
The Risk Assessment article describes how to evaluate the GBM risk (low, medium, high) of vineyard blocks. If you had GBM damage last year (e.g., over 6% damaged clusters in July), portions of your vineyard are adjacent to wooded areas or hedgerows, or if the vineyard had prolonged periods of snow cover, you should consider the vineyard a “high risk” vineyard and incorporate an insecticide into your **1st Post-Bloom spray**. It also describes how to continue to monitor your vineyard blocks to determine if any additional summer sprays are needed.

The Risk Assessment article also describes a protocol for determining if Eastern Grape leafhoppers are above threshold levels.

The following is the sampling protocol for both insects that is in the Risk Assessment article:

Grape Berry Moth—Select four areas in the vineyard to be sampled: two in the center of the vineyard (1 and 2) and two on the edge of the vineyard (3 and 4). Visually inspect, at random, 10 clusters on each of five vines (a total of 50) in each of the four areas. Record the number of GBM-damaged clusters in each area. Compute separate totals for areas 1 and 2 (center) and 3 and 4 (edge) to determine the percent damaged clusters. For the July sampling date (low-risk and intermediate risk sites), treatment should be applied if the percentage of the clusters with damage exceeds six percent. For the August sampling date (high-risk vineyards), treatment should be applied if the percentage of damaged clusters exceeds 15 percent. See the IPM fact sheet #1 on Grape Berry Moth for photographs of damage.

Eastern Grape Leafhopper—First observe whether or not leaves have stippling damage. If stippling is present, the block should be sampled to estimate the number of leafhopper nymphs per leaf present. Counts should be made at the same 4 locations used for GBM counts. At each area, examine the undersides of the third through seventh leaves of one shoot (leaf one is the first leaf at the base of the shoot) on each of five vines. Divide the total number of leafhopper nymphs by 100 to compute the number of leaf hoppers per leaf. If more than five nymphs per leaf in the third week in July or 10 nymphs per leaf in the fourth week in August are found, an insecticide treatment should be applied. See the IPM fact sheet #4 for photographs of leafhopper nymphs and damage.



The following table from the Risk Assessment article outlines **sampling times** and **treatment thresholds**:

GBM risk category	Recommended Sampling Times and Treatment Thresholds				Recommended Time to Spray ²		
	Grape Berry Moth		Eastern Grape Leaf hopper ¹		Grape Berry Moth	Eastern Grape Leafhopper	
	Sampling	Threshold ¹	Sampling	Threshold			
High risk	•4th week of August	•15% damaged clusters	•4th week of August	•10 per leaf	•Ten days post bloom •Early August •BOS Late August	•BOS Late August	
Intermediate risk	•3rd week of July	•6% damaged clusters	•3rd week of July	•5 per leaf	•10 days post-bloom	•BOS Early August	
			•4th week of August	•10 per leaf	•BOS Early August	•BOS late August	
Low risk	•3rd week of July	•6% damaged clusters	•10 days post-bloom	•Stippling + adults	•BOS Early August	•BOS 10 days post-bloom •BOS Early August •BOS Late August	
			•3rd week of July	•5 per leaf			
			•4th week of August	•10 per leaf			

¹ An insecticide treatment is recommended if damage levels exceed the stated threshold. Consult Cornell Pest Management Recommendations for selection of appropriate insecticide.
² BOS = Based On Sampling. BOS sprays are those made only when the results of sampling confirm that damage exceeds the stated threshold. Sampling often will demonstrate that a BOS treatment is not needed.

Pictures on what to scout for will be in the July issue of this newsletter.

Note that the above was developed for vineyards in New York State so the timing of monitoring may be a bit delayed in colder areas of Vermont.

Again, details on insecticide options can be found in the

[2007 New York and Pennsylvania Pest Management Guidelines](#)

Announcement of Grape Meetings

July 15-17, 2007 - American Society for Enology & Viticulture — Eastern Section — Annual Conference and Symposium, Holiday Inn Conference Center Lehigh Valley (Allentown) PA., Topics include: Root Biology and Vineyard Floor Management, Canopy Management and Vine Balance, and Soil Moisture and Vine Vigor, plus there will be a Lehigh Valley Vineyard and Winery Tour. Details can be found on the Society's website: <http://www.nysaes.cornell.edu/fst/asev/>

August 29, 2007 - Mark your Calendars ! We are planning a workshop + vineyard tour in Vermont. Details will be available in July.



Contact Information

Lorraine P. Berkett
Plant Pathologist and IPM Specialist
Dept. of Plant & Soil Science
105 Carrigan Drive, UVM
Burlington, VT 05405
Phone: 802/656-0972
E-mail: lorraine.berkett@uvm.edu [*best way to contact me*]

Where trade names or commercial products are used for identification, no discrimination is intended and no endorsement is implied. Always read the label before using any pesticide. **The label is the legal document for the product use. Disregard any information in this newsletter if it is in conflict with the label.**

The Vermont Agricultural Experiment Station, University of Vermont Extension, and U.S. Department of Agriculture, cooperating, offer education and employment to everyone without regard to race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status.