



Cold Climate Grape IPM News

Lorraine P. Berkett, IPM Specialist
July 27, 2006

Disease Management:

We have reached or soon will reach, depending on the grape cultivar, a point where the berries have developed resistance to infection by the fungi that cause **black rot**, **powdery mildew**, and **downy mildew**.

With **black rot**, berries are very susceptible to infection for the first 2-3 weeks after bloom and become more resistant 4-8 weeks after bloom depending on the variety and year. However, Dr. Wilcox, Cornell University, has observed that clusters infected at the end of their susceptibility period do not develop symptoms until 3 to 5 weeks after infection. Which means infections that occurred in mid- to late-July, may only show up in mid- to late-August. Hopefully, if you are not seeing berry symptoms now, you also will not see berry symptoms in August. It is advised that sprays for black rot continue through at least the end of July if more than a trace level of infection is present.

Berries are highly susceptible to **powdery mildew** infection from the immediate pre-bloom stage until about 2 to 3 weeks after fruit set. On *V. vinifera* and some hybrids, infections can continue to occur until bunch closure or slightly thereafter. Berry infections during mid-summer can act as entry points for the *Botrytis* fungus and other sour rot organisms which become apparent at harvest. On cultivars that are highly susceptible to powdery mildew, continued suppression of foliar infections throughout the summer is important to avoid premature defoliation, poor ripening, and reduced winter hardiness. And, given that grapes are a perennial crop, one should always be aware of the potential amount of overwintering inoculum which might result from this year's disease level. Continued summer management of foliar infections will impact the number of cleistothecia (i.e., small, round fruiting bodies) which form, overwinter, and from which initial spores are released next spring.

Regarding **downy mildew**, research in New York indicates that berries become highly resistant to infection about 2 weeks after the start of bloom, but berry stem infections continue to occur for about another 2 weeks. Fungicides for downy mildew applied later than 4 weeks after bloom will not provide any additional control of cluster infection, however, these are important for foliar infection, particularly in wet years. Dry, hot weather can "shut down" infections but frequent rains and high humidity can allow "explosive" disease development. Leaves lose susceptibility to infection at about the time they are fully expanded. Disease incidence can increase as long as there are young, immature leaves or other green, actively growing parts with functional

stomates which are the tiny pores on the plant and through which the fungus enters the plant. Severe infection can cause premature defoliation which can predispose the vine to winter injury.

There are a number of fungicides that would be effective against black rot, powdery mildew, and/or downy mildew. As mentioned in a previous newsletter, selection of a fungicide(s) involves a number of considerations. The first step is to walk your vineyard carefully and assess the level of the various diseases. Then, look at a chart (see the [May 23, 2006 issue](#) of this newsletter) that lists the diseases and which rates how effective the various fungicides are for the diseases which are present in our vineyard and choose an appropriate material(s). At this point in the growing season, you should pay closer attention to the “pre-harvest interval” of fungicides or any pesticide you are considering applying. For example, mancozeb fungicides should not be applied within 66 days of harvest. Also, fungicide resistance management should always be a consideration. Since we are out of the most critical period of disease management, there should be some compelling reason to choose a fungicide that has a high risk of resistance development, such as the sterol-inhibiting (SI) fungicides (e.g., Nova, Elite, Procure), the strobilurin fungicides (e.g., Sovran, Flint, Abound), and fungicides such as Ridomil, etc. Fungicides that have a low risk for resistance development include captan, which would provide activity against downy mildew at this point in time, and sulfur, which is effective against powdery mildew (check cultivar sensitivity to sulfur before application to avoid phytotoxicity). Products containing phosphorous acid such as ProPhyt and Phostrol have a moderate resistance risk. These materials provide good to excellent control of downy mildew through a combination of protective, post-infection, and anti-sporulant activities.

Please refer to the following publication for details on fungicide options, rates of application, and other specific cautions for their use:

[2006 New York and Pennsylvania Pest Management Guidelines for Grapes](#)

Additional Disease Note: Cultural practices such as leaf pulling, hedging, mowing tall weeds, etc. — anything that will increase air circulation and sun penetration— will help to decrease disease development by changing the canopy micro-climate and/or by allowing better spray coverage in the canopy.

Arthropod Management:

Grape Berry Moth: The following picture was taken in a Vermont vineyard on July 26, 2006. Early August is an important time to manage this insect in “high risk” vineyards. I suspect most vineyards in Vermont would fall into this category. Please see the [July 10th issue](#) of this newsletter for links to further information on management



Berry damaged by Grape Berry Moth



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As you may know, *Vinewatch* is a collection of recent vineyard observations. It is usually sent out separately but it is being combined with this newsletter for this issue. It is hoped that the pictures will help to identify things that might be occurring in your vineyard or to alert you to a particular situation. The pictures were taken over the last two weeks in Vermont and at the Penn State Fruit Research Center:



Sunburned berries on vines that were hedged too late.



Weed management from an application of Chateau and Roundup applied back in May.



Non-sprayed Frontenac *versus* Sprayed Frontenac and
Difference in Black Rot Infection



Anthracnose-type lesion



Angular Leaf Scorch



Leafhopper damage and leafhoppers on leaf



Damage by foliar Phylloxera



“Party -time” for Japanese beetles



Aftermath of “party”

Reminders

- ♦ **Growth Tubes** - The general guideline is to remove growth tubes on **August 1** so that the plants have time to harden-off before cold temperatures arrive.
- ♦ **Petiole Analysis** - Collect samples after September 1. Details will be forthcoming.

Meeting Announcements

- ♦ **August 8** - Kevin Iungerman has announced a combined Peru-Willsboro Apple and Grape Field Day from 10:00 am—3:45 pm. For details, please contact Kevin at kai3@cornell.edu .
- ♦ **August 17** - The Pennsylvania Assoc. of Winegrowers' 2006 Annual Summer "Walk Around" at the Penn State Univ. Fruit Research and Education Center, Biglerville, PA (which is ~ 8 mi north of Gettysburg). [Please click here for details.](#)
- ♦ **August 29** - Sonia Schloemann, UMass, has announced the **Veraison Disease Management Review for 2006**. This meeting will be held in conjunction with the UConn IPM Program at [Jonathan Edwards Winery](#) in North Stonington CT. Special Guest Speakers are Dr. Turner Sutton from North Carolina State University and Dr. Andrew Landers from Cornell University. Dr. Sutton will review disease management challenges for 2006 with a special focus on harvest rots. Dr. Landers will demonstrate proper sprayer configuration for several types of vineyard sprayers with a special focus on minimizing drift and optimizing deposition in the target zone. Cost: \$40. Pre-register by contacting Hilary Sandler at hsandler@umext.umass.edu or 508-295-2212 x21 by August 22nd.
- ♦ **Early September** - Planning is in the early stage for a **Vermont Vineyard "Walk-About"**. Stayed "tuned" for details.



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