

Subject: New England Grape Notes, July 12, 2017
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New England Grape Notes - July 12, 2017

July Update

**UMass
Extension**
CENTER FOR AGRICULTURE

Vines are growing rapidly and canopies are closing in. Fruit clusters are beginning to size and now is an important time to get fungicide applications on before bunch closure to avoid problems with rachis infections. Some varieties (e.g., Mars, Venus, Concord and possibly others) have shown **poor fruit-set** this year. The cause isn't clear but doesn't appear to be a disease problem. Poor pollination is the most likely cause resulting from bad weather during bloom. **Grape berry moth** is active with some 2nd generation moths still flying. In some areas, egg-laying may complete so the next opportunity to control this pest will come after emergence around veraison or approximately 1620 GDD. Scout for damage in a week or so and assess the amount of infestation there might be. If it exceeds 15%, control measures are warranted at 1620 GDD. To check your GDD accumulation see the NEWA Grape Berry Moth model at <http://newa.cornell.edu/index.php?page=berry-moth>. **Potato Leaf Hopper** is present across the state. Feeding will cause leaf distortions and discoloration and heavy infestations can cause significant damage to vines. More on this below.

Disease management during this period remains important this year with the frequent rain and humid conditions. See the article below for more details on mid-season grape disease management.

Finally, weather patterns have frequently been conducive to the formation of **hail** this summer. Below is some advice on how to manage hail damage in grapes.

Hail Damage

*By Joseph A. Fiola Ph.D., Extension Specialist in Viticulture and Small Fruit and
Anne DeMarsay, Ph.D., Former University of Maryland Extension Specialist in Fruit Pathology*

We experience many climatic vagaries in the Mid Atlantic. Hail damage may be the most devastating as it can quickly obliterate a season of meticulous management in the vineyard. Depending on the timing and intensity of the event, as well as canopy density and exposure, damage can range from random tears in leaf blades to defoliation, extensive shoot damage, and crop loss.

Hail during early stages of development (pre-verasion)

- Shoots and petioles may be damaged and leaf blades are shredded or torn from the vine.
- Severe defoliation from hail during early to mid-season will typically stimulate a new canopy to develop from lateral shoots, with minimal long-term effect on fruit quality. Fruit maturity, however, will be greatly retarded after severe defoliation.
- Berries damaged by light to moderate hail early in development will be scarred but will typically "heal" or die but WITHOUT onset of fruit rot.

Hail during late stages of development (post-verasion)

- Shoot, petiole, and leaf damage will depend on the direction and intensity of the hail, as well as the density of the canopy.
- Medium to severe defoliation from hail after veraison may stimulate some new canopy development from lateral shoots. Fruit maturity will be greatly retarded, however, and fruit quality is likely to be adversely affected.

- Eliminate or thin crop to a level appropriate for the each vine, considering both proper (potential) ripening of the fruit, as well as proper hardening of the vine for adequate winter survival.
- Hail during or after veraison WILL promote fruit rot. Severely damaged berries may drop immediately but some may hang on.
 - Intensify fruit disease management to combat the increased risk of Botrytis and summer bunch rots such as ripe rot, bitter rot, and Macrophoma rot.
 - § Botryticides (Vanguard/Scala, Elevate, Rovral, Pristine/Endura) and captan will help to protect sound berries from rot infections but cannot prevent the development of rots in damaged berries.
 - The onset of rot will promote the attack of insects that can further damage berries and clusters and encourage sour rot. Stinging insects may create hazards for the vineyard worker, especially during harvest.
- Scout for insects. Identify those that are actually damaging fruit and treat if appropriate. This will be the same insect complex that we deal with during harvest, especially secondary scavengers. As always do not apply an insecticide unless the insects are causing economic damage.
- For late-season hailstorms, assess the damage and determine whether the sound fruit will be able to ripen to a level of quality that will justify additional pest management applications.



Potato Leafhopper

Rufus Isaacs, MSU Entomology

The adult leafhopper is pale to bright green and about 1/8 inch long. Adults are very active, jumping, flying or running when disturbed. The immature forms, or nymphs, are pale green and wingless. They run forward, backward or sideways when disturbed. The potato leafhopper does not overwinter north of the Gulf states. Adults migrate north each spring on southerly winds and are deposited during May and June in spring rains.



Adult potato leafhopper. 3 mm.

Potato leafhoppers can be very destructive on hybrid or vinifera varieties that are sensitive to the saliva they inject while feeding. Feeding is concentrated on young tissues near the shoot tips. On sensitive varieties, only a few adults are needed to cause leaf yellowing and cupping or shortened shoot internodes. This insect is typically a minor pest in labrusca grapes.



Sensitive varieties can display yellowed leaves and “cupping” after potato leafhopper feeding.

Comparison of grape and potato leafhoppers

Character	Grape leafhopper	Potato leafhopper
Color	Light yellow	Green-yellow
Behavior	Walks forward	Walks sideways
Position on vine	On inner canopy leaves	On leaves on ends of shoots
Most susceptible	Labrusca grapes	Vinifera and hybrid grapes
Damage symptoms	Stippling on leaf surface, becoming red/brown when severe.	Leaf yellowing and cupping on wine grapes. Stippling on juice grape leaves.

Management

No thresholds are established for this pest but action is recommended if 25% of shoots exhibit damage during the time between fruit-set and veraison. The timing can vary depending on when PLH are brought in from the south on storm fronts.

Organic management options include sprays with JMS Stylet Oil, Pyganic, Neem or Azadirachtin, and Surround (Kaolin clay). Efficacy data is not readily available to show how well any of these materials will work, however. Conventional management options include sprays with Acatara, Applaud, Closer, Leverage, among others. In heavy infestations a second application may be needed. Be aware of PHI restrictions on late applications.

Other leafhoppers

Threebanded leafhopper, *Erythroneura tricincta*, and Virginia creeper leafhopper, *Erythroneura ziczac*, can both be found in eastern U.S. vineyards. Their biologies are similar to that of grape leafhopper. The threebanded leafhopper adult is brown and black with some orange flecks on the wings. The Virginia creeper leafhopper adult is pale yellowish or white with a zigzag stripe down each wing and distinctly red cross-veins.

(Source: adapted from MSU Fruit Crop Alert June 2010)

Keep an Eye on Foliar and Fruit Diseases in Grapes

Annemiek Schilder, Michigan State University Extension



Most grape growers have done a good job controlling diseases in grapes, aided by the dry weather in June. However, rainfall has increased but has



been quite variable, with some areas like northern Michigan getting more rain than others. It is therefore difficult to make blanket recommendations for disease control in grapes.

At this point, symptoms of [black rot](#), [Phomopsis](#), [downy mildew](#), [powdery mildew](#) and [anthracnose](#) are common in unsprayed or minimally sprayed vineyards, showing that all pathogens are active. In general, [Michigan State University Extension](#) advises careful scouting on a weekly basis and continue protecting fruit clusters and foliage from infection using effective broad-spectrum fungicides.

Black rot is currently becoming apparent on fruit, showing creamy spots surrounded by rapidly advancing brown areas and shriveling of the berries. If you see black rot symptoms, it is too late to rescue the affected berries or clusters; however, since there may still be additional infection periods during rainy weather, any fungicides applied now will protect healthy berries from new infections.

Early black rot on fruit showing brown spreading lesion with lighter center. All photos by Annemiek Schilder, MSU.

Basically, six hours of fruit wetness from rain or dew at 80 degrees Fahrenheit is sufficient for the fungus to penetrate the fruit. Sterol inhibitors like Tebuzol and Rally are very effective against black rot and have some “kick-back” (curative) action, but no more than 24-48 hours.

One of the most active sterol inhibitors is difenoconazole, an ingredient in Revus Top, Quadris Top and Inspire Super, which may be applied for broad-spectrum disease control at this time of the season. Be careful with these products on rapidly growing plant tissues, which may have a thin cuticle, allowing too rapid uptake of difenoconazole and subsequent burning of leaves. Also, do not apply any products containing difenoconazole to Concord, Concord Seedless or Thomcord grapes.

Phomopsis spots are visible in most Concord and Niagara vineyards, and may be especially plentiful in Vignoles and other susceptible wine grapes. However, they do not seem to be increasing much. Most Phomopsis infections occurred earlier in the season, as can be seen from the preponderance of lesions on the first and second internodes and older leaves.



Similarly, **anthracnose** was also favored by spring rains, and lesions can be found on stems, leaves and berries of table grapes (e.g., cultivars Mars and Marquis) as well as Marquette and Frontenac grapes. Anthracnose may look like a severe case of Phomopsis but unlike Phomopsis, lesions are sunken on stems and develop shot-holes on leaves.

Phomopsis lesions on leaf are yellow spots with brown speck in center.



Anthracnose lesions on leaf showing shot hole development and leaf distortion.

It is still important to protect clusters from Phomopsis as well as anthracnose (if susceptible): strobilurins (e.g., Abound, Pristine) are effective against both diseases, and sterol inhibitors (e.g., Tebuzol, Rally) are effective against anthracnose.

While berries remain susceptible throughout their development to Phomopsis, the risk of infection diminishes after bunch closure because spore supplies become exhausted, especially in rainy years. Only young berries are susceptible to anthracnose.

Downy mildew started to show up on leaves in various vineyards about two to three weeks ago. Unsprayed cv. Chancellor has had an intermediate number of infected clusters compared to previous years, probably moderated by dry conditions.



Rainy weather, especially with warm, humid nights—which promote spore development—will be conducive to downy mildew, so continue to be on the look-out for this disease. When downy mildew is observed, take action soon since the disease can spread rapidly and cause premature defoliation of the vines.

Apply Ridomil Gold Copper, which has a 42-day pre-harvest interval (PHI), to eradicate downy mildew. If harvest is well over two months away, you can also apply Ridomil Gold MZ, which has a 66-day PHI. Remember that juice grapes for Welch's cannot have any mancozeb applied to them after bloom.

Alternatively, use phosphites fungicides such as Phostrol or ProPhyt to eradicate downy mildew by applying the highest labeled rate followed by a "booster" spray five days later. With phosphites, be careful under hot, dry conditions, as they can cause leaf burning when vines are drought-stressed.

Generally, it is a good idea to incorporate protectants such as strobilurins, copper, Ziram, Ranman, Forum or Presidio in the fungicide program as well to keep downy mildew under control.

Downy mildew on leaf showing yellow "oil spot" lesions.

Powdery mildew has been seen on clusters and leaves in some locations, for instance on clusters of unsprayed Chancellor vines in East Lansing, Michigan, showing that the pathogen has been active for some time. Warm, dry spells are especially favorable for powdery mildew, although intense solar radiation is harmful to the fungus. Continue protecting leaves and clusters, preferably with a tank-mix of a systemic and protectant fungicides. Don't rely entirely on systemic fungicides for powdery mildew control since fungicide resistance is a real possibility in powdery mildew. (**Source:** *Michigan State Univ. Fruit Crop Alert, July 11, 2017*)

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