

**Subject:** Re: New England Grape Notes, June 2, 2010  
**From:** Sonia Schloemann <sgs@umext.umass.edu>  
**Date:** Mon, 07 Jun 2010 09:13:42 -0400  
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## *New England Grape Notes*

June 1, 2010, Vol. 5, No. 2



### General Info -

- Vines are at or approaching bloom and the first steps in canopy management are important now. Below is a good review of the rationale behind and steps for carrying out shoot thinning. Additional information about canopy management can be found at: <http://ohioline.osu.edu/b919/0009.html> and <http://viticulture.hort.iastate.edu/info/pdf/prunecanopy.pdf>.
- See <http://www.omafra.gov.on.ca/english/crops/facts/grapestages.htm> for a display of the various growth stages and their rating according to several scales.
- Some locations suffered freeze damage which will set the crop back somewhat. See the last issue of Grape Notes ([www.newenglandwinegrapes.org](http://www.newenglandwinegrapes.org)) for more information on how to adapt to freeze damage in the vineyard.
- The bloom and post bloom period is key for disease management success. Consult resources listed below for recommended materials and rates.
- NEWA Models Available: An excellent new resource for identifying disease infection periods as well as timing for Grape Berry Moth controls based on degree day models can be found at <http://newa.cornell.edu/index.php?page=crop-page-grapes>.

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### Resources:

If you haven't already ordered your reference materials for this year, here are some suggestions:

[2010-2011 New England Small Fruit Pest Management Guide](#)  
[2010 NY/PA Pest Management Guidelines for Grapes](#)  
[Cornell Production Guide for Organic Grapes](#)

and a tool that we find extremely useful:

Jeannete Smith's [The Fungicide, Insecticide & Herbicide Guides in the Vineyard Pest Management Tool Kit](#).

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### Canopy Management:

Canopy Management – Shoot Thinning and Positioning  
*Joe Fiola, University of Maryland*

Many vigorous varieties and variety/rootstock combinations quickly begin to increase shoot length at this time. This is a critical time to do some basic canopy management chores, shoot thinning and positioning especially in vertical shoot positioned (VSP) trellises with movable or static catch wires. Critical timing of positioning canes for Smart Dyson and Scott Henry is also close depending on the variety and location.

- Some sites (e.g., heavy, fertile soils) and varieties (e.g. Cabernet Sauvignon) are prone to high vegetative vigor and the risk of overcrowded canopies.
- Overcrowded/dense canopies are more prone to disease due to lack of air movement, resulting in high humidity and increased canopy drying time in the morning or after precipitation, as well as poor pesticide penetration.
- Overcrowded/dense canopies are more prone to shaded cluster which may result in decreased varietal character and delayed ripening.
- To maintain good vegetative/reproductive balance in the vineyard, you are typically pruning for a baseline of about four to six shoots per linear foot of trellis for VSP.
- This is also a good time to thin out weak and unwanted primary and secondary shoots to get to your final density. These can typically still be snapped off by hand without needing pruning shears or

causing damage to the spur or cane.

- Position the shoots within the catch wire before the tendrils start to attach as this will make the job much more difficult and greatly increases the possibility of breaking the shoots while moving.
- Timing of positioning the shoots downward for Smart-Dyson and Scott-Henry usually occurs within a short window for individual varieties – before the shoots may break off – after the shoots may not move. You need to work with each variety/location combination to get the timing correct.
- Delaying until later to conduct these operations will greatly increase the time that will be necessary to achieve the same result.

There have been some questions regarding the importance or necessity to shoot thin. Some are concerned that they might not have large enough crop if they thin down to the suggested level of shoots. I cannot over-emphasize the importance of shoot thinning down to the recommended four to six shoots per linear foot of trellis for VSP for both pest management and fruit quality reasons.

- Leaving more than the recommended range will result in overcrowded, very dense canopies.
  - Crowded canopies are more prone to disease because they do not dry out as quickly in the morning or after precipitation due to lack of air movement.
  - Crowded canopies maintain high humidity in the canopy micro-climate that exacerbates disease problems.
  - Crowded canopies limit pesticide penetration that will reduce efficiency and exacerbate disease problems.
    - You will see much high incidence of downy and powdery mildew in crowded canopies.
    - Botrytis and other late season fruit rots will also be more difficult to control.
- As for crop volume (yield), the recommended shoot density has been shown to give yield within the recommended range. Most of the shoots have multiple clusters and the vine has the potential to compensate when shoots are removed.
  - In almost all cases you will still have to drop additional clusters later to get down to the level of crop level that you can fully ripen. You can estimate and adjust your crop later in the season.
- As for fruit quality, again I cannot over-emphasize the importance of shoot thinning to allow adequate sunlight into the canopy and especially the clusters.
  - There is lots of evidence that shows that an open canopy with good light penetration to clusters results in more uniformly ripened fruit with higher levels of secondary products and varietal character.
- NOW is the best time to get this done, as the longer you wait:
  - the more difficult it is to physically get into the canopy
  - the more time it will take to decide which shoots to cut
  - the more difficult it is to make the cuts (young shoot easily snap off with your hand - older shoot need to be cut with pruning shears to avoid damage to the cordon)
  - the tendrils will attach and make it difficult to remove the shoots.
  - the tendrils will attach and make it more difficult to move the catch wires.
  - disease will get established in the canopy making it more difficult if not impossible to control later.

If your goal is ripe, disease free, high quality, fruit, this is a critical management practice that needs to be accomplished very soon.

(Source: *Maryland Timely Viticulture, June 2006*)

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#### Disease Management:

Disease control after spring freeze injury in grapes: What are the options?

*Annemiek Schilder, Plant Pathology*

It is unfortunate that the Michigan grape industry has been hit with widespread freeze injury once again. In addition, there was hail damage in the Lawton area. A more accurate estimate of yield will not be possible until after fruit set. However, based on the number of surviving flower clusters and proportion of secondary buds, an initial assessment can probably be made. In previous years, the crop turned out to be harvestable in some vineyards that growers had given up on. One thing that is clear is that growers will need to reduce inputs, including fungicides. There are basically three different reduced cropping scenarios:

1) There is no crop worth harvesting and you don't care about inoculum build-up. In this case, protecting the fruit from infection by black rot or Phomopsis is not necessary. If you've had good black rot control in previous years, you probably won't have too much disease. If you've had black rot problems in the past, one more year of inoculum production won't make much of a difference because you already have an "inoculum bank" in the vineyard. We have shown that even under conditions of high disease pressure, it is possible to produce an excellent crop with a standard spray program, which you would implement next year. As far as foliar diseases are concerned, vines with a low crop can tolerate more disease than vines with a full crop. Powdery mildew may infect Concord and, to a lesser extent, Niagara leaves, but if there is no crop, the vine can tolerate quite a bit of disease without ill effects. However, there is a risk that a severe downy mildew outbreak may defoliate Niagara, which may predispose vines to winter injury, even if there is a low or no crop. If downy mildew comes in early in the season (based on scouting) and if it looks like the weather will continue to favor downy mildew, a fungicide spray may be needed to knock back the disease to the point that it does not lead to serious defoliation.

Scenario 1: No crop worth harvesting, don't care about inoculum build-up

ACTION RECOMMENDED

Bud break to pre-bloom	Bloom to 4 weeks after bloom	Mid- to late season
None	<ul style="list-style-type: none"> <li>Scout Niagara for downy mildew – if lesions found and there is threat of severe outbreak and defoliation, apply systemic fungicide* with curative action.</li> <li>Continue scouting until harvest.</li> </ul>	

\* *Phostrol, ProPhyt, Revus Top, Ridomil Gold Copper, etc.*

2.) There is no crop worth harvesting, but you want to limit inoculum buildup. In this case, we don't want to protect the vine to preserve fruit quality as much as we aim to apply fungicides at a few critical times to knock back diseases to prevent large amounts of overwintering inoculum production. In this case, we can also opt for less expensive fungicides that have good to excellent disease control efficacy. This would include at least one protectant fungicide application (e.g., before a rainy period) to protect the young shoots and exposed flower clusters from Phomopsis. An SI spray could be applied at first postbloom if you are concerned about black rot. Scouting-based management of downy mildew in Niagara would occur as described above. If powdery mildew becomes severe on Concord leaves, you may consider an eradicator spray (e.g., JMS Stylet Oil) to knock down colonies and cleistothecium formation.

Scenario 2: No crop worth harvesting but want to limit inoculum build-up

ACTION RECOMMENDED

Bud break to prebloom	Bloom to 4 weeks after bloom	Mid- to late season
A spray of an EBDC* or Ziram or Captan (can be tank-mixed with ProPhyt or Phostrol) to reduce Phomopsis cane infection at a critical time (e.g., at 4-8 inches of shoot growth).	<ul style="list-style-type: none"> <li>SI** + Ziram at 1<sup>st</sup> postbloom to control black rot</li> <li>Add Phostrol or ProPhyt or Ziram for Phomopsis and downy mildew control if needed.</li> </ul>	<ul style="list-style-type: none"> <li>Scout Niagara for downy mildew – apply systemic fungicide*** if threat of severe outbreak.</li> <li>Scout Concord for powdery mildew; to limit cleistothecium formation, apply JMS Stylet Oil to knock down existing colonies. An SI will prevent new infections but will not visibly reduce existing colonies.</li> <li>Continue scouting until harvest</li> </ul>

\* EBDC= *Dithane, Penncozeb, Manzate*. \*\* SI = *sterol inhibitor, e.g., Elite, Tebuzol, Orius, Rally, Vintage, Mettle*. \*\*\* *Phostrol, ProPhyt, Revus Top, Ridomil Gold (MZ or Copper)*.

3.) There is a harvestable but reduced crop. In this case, protecting the fruit from black rot and Phomopsis is the most important activity and will require a few more sprays than the two scenarios above, e.g., one or two pre-bloom protectant sprays to protect against Phomopsis, one or two postbloom sprays to protect against black rot and Phomopsis (while also controlling powdery and downy mildew), and curative/protectant sprays against foliar powdery and downy mildew only if scouting indicates a need. To cut input costs, you can use lower-cost fungicides (e.g., generics, older protectant fungicides, phosphites) and reduce the number of fungicide applications only to critical times. Watching the weather and stretching spray

intervals during dry periods also helps to lower the number of sprays. It is important to also take labor and fuel costs for applying fungicides into account. The fewer times you have to drive through the vineyard, the better. A way to reduce the number of applications is to tank-mix fungicides with insecticides (most growers are already doing this), apply products at higher rates, or apply products with longer-lasting residuals for extended coverage. Adding a sticker-extender (e.g., NuFilm) can be a low-cost way to make a fungicide last longer and obtain better coverage. Ensuring thorough coverage by spraying every row at an appropriate spray volume (at least 50 gpa after the canopy fills in) will increase the “bang for your buck” of the fungicides you use. This is especially important for protectants like Ziram, Captan, and Manzate.

Scenario 3: Harvestable but reduced crop.

ACTION RECOMMENDED		
Bud break to prebloom	Bloom to 4 weeks after bloom	Mid- to late season
1 or 2 sprays of an EBDC* or Ziram or Captan or ProPhyt or Phostrol to reduce Phomopsis cluster infection at critical times (e.g., 4-8 inches of shoot growth, 12-16 inches of shoot growth)	<ul style="list-style-type: none"> <li>· SI** (+ Ziram) or Revus Top at 1st and 2<sup>nd</sup> postbloom to control black rot, powdery and downy mildew</li> <li>· Tank-mix Phostrol or ProPhyt for Phomopsis control as needed.</li> <li>· Scout Niagara for downy mildew – apply systemic fungicide*** if threat of outbreak</li> </ul>	<ul style="list-style-type: none"> <li>· Scout Concord for powdery mildew; if it comes in early, apply inexpensive SI** to prevent new infections.</li> <li>· JMS Stylet Oil can be used to knock down existing infections.</li> <li>· Continue scouting until harvest</li> </ul>

EBDC= Dithane, Penncozeb, Manzate. \*\* SI = sterol inhibitor, e.g., Elite, Tebuzol, Orius, Rally, Vintage, Mettle. \*\*\* Phostrol, ProPhyt, Revus Top, Ridomil Gold (MZ or Copper).

(Source: Michigan Fruit Crop Advisory Team Alert, May 25, 2010 -- Vol. 25, No. 7)

Bloom Botrytis:  
Alice Wise and Wayne Wilcox, Cornell Univ.

With periodic rain predicted, thoughts turn to the risk of Botrytis infections of blossom debris. Re-call that these bloom infections remain latent until later in the season when favorable conditions and susceptible berries cause the fungus to awaken. This risk reinforces the need for well-timed cluster zone leaf removal to promote light and airflow. Good canopy management and avoiding overuse of nitrogen are particularly important for cluster rots. From Wayne Wilcox's *Grape Disease Management* overview, April, 2009:

All of the current “standard” fungicides registered for Botrytis control provided excellent protective activity on the surface of the berries. That’s why they got developed and marketed in the first place. The fungicides Vanguard, Scala and Elevate also provided very good protective activity within the berries. This was anticipated since such fungicides are known to be absorbed by plant tissues, but Elevate has always been sold as a surface protectant. But this appears to have more to do with “market positioning” than science. Similarly, the same three materials provided very good curative activity against latent infections initiated at bloom, even when applied 2 months after infection. Never-the-less, we often get better control in our field trials when these fungicides are sprayed at bloom and bunch closure in addition to veraison and 2 weeks later. This suggests that the level of curative effect from the later sprays doesn’t replace the need for earlier applications when conditions favor infection at bloom, although it probably contributes to the overall level of control obtained.

For biological reasons, most common fungicides provide relatively little control of Botrytis and, conversely, most good Botrytis fungicides (Rovral, Vanguard, Scala, Elevate) provide relatively little control of fungi other than Botrytis (and a few close relatives that affect crops other than grapes). Two striking exceptions to this general rule are Pristine and Flint. Recall that both components of Pristine provide control of Botrytis, although the non-strobie ingredient is the more active of the two (and, fortunately, reputed to be somewhat less prone than strobies to resistance development). This non-strobie component is not that active against any grape diseases other than Botrytis and PM, but the strobie part picks up the erratic “summer rot” diseases (and helps a bit with “sour rot”) in addition to PM, DM and BR. This same broad spectrum of activity applies to Flint (minus the DM), which has consistently provided excellent Botrytis control at its higher (3 oz/A) rate in my trials. (Source: Long Island Fruit & Vegetable Update, No 12, June 3, 2010)

## Insect Management:

### Potato Leafhopper *Alice Wise and Dan Gilrien, Cornell Univ*

Potato leafhopper (PL) nymphs are pale yellow-green and walk sideways like a crab. The more slender lime green adults may also be present. This insect does not overwinter on Long Island, but rides warm air masses from the south May-June. The constant migration means all stages may be present at any one time in early summer and repeat invasions may occur. Thus PL infestations may be short-lived or may persist well into August.

PL injects a toxin when feeding, causing chlorosis (yellowing) and even browning of the leaf edge. Leaves are often cupped, especially on shoot terminals which can also be stunted. It is notoriously difficult to scout for PL due to the extremely high mobility of this pest. Many managers visually estimate damage and do an informal "trellis shake" to help gauge the severity of infestation. In apples, a threshold of 1 nymph per leaf is used, out of 50 - 100 leaves counted per orchard block. Mature vines can tolerate some injury as damaged terminals are often hedged off. Moderate to severe injury on both terminals and laterals however may be detrimental to vine health, though overall vine health and the severity/length of the infestation are factors. The need for control of grape berry moth and Japanese beetle may help decide the timing and frequency of treatment. Intervention for baby vines or otherwise compromised vines might be sooner vs. mature, healthy vines. Options for treatment:

- Assail, a reduced risk neonicotinoid labeled for 2 app's, adjuvant recommended.
- Avaunt, reduced risk, labeled for leafhopper suppression only.
- Baythroid, restricted use, labeled for control of grape leafhopper. Broad spectrum activity means it is likely hard on beneficials.
- Brigade, Brigadier – both labeled for grape leafhopper, both restricted use, both have the pyrethroid bifenthrin, the latter also has the ai found in Provado.
- Danitol and Lannate, restricted-use and toxic to predator mites, although Danitol is also a miticide. No more than two applications of Danitol/season are recommended due to concerns about the development of resistant PL and ERM populations, although more are allowed on the label depending on rate. Lannate has a 7 day reentry interval.
- Imidan is labeled for grape leafhoppers. Field experience with Imidan indicates that it will knock back PL also however the period of residual control is usually no more than a week. Imidan is no longer restricted use but it has a 14 day reentry.
- Leverage, restricted use, labeled for control of leafhoppers, broad spectrum activity suggests it is likely hard on beneficials.
- Provado, another neonicotinoid is now restricted use. Research in apples a few years ago suggested that application frequency was more important than using a full rate.
- Sevin is linked anecdotally to flare ups of European red mites in vineyards. Advantage to Sevin is that it is also effective against beetles and berry moth.
- Azadiractin materials primarily act as insect growth regulators that function as contact materials and work through ingestion. In a trial at LIHREC in 2004, Aza-Direct did not work as well as Danitol or Assail with moderate PL pressure. The primary use is against nymphs, they disrupt the molting process. Thus, their best fit is early in the infestation cycle and not when the population is skewed toward adults. Both Aza-Direct and Neemix are OMRI approved.
- Pyrethrin based products – Many such as Pyganic are OMRI approved. Experience with these products in other commodities suggests that they are broad spectrum, will offer a quick knock down but will have a short period of residual control, reportedly

as little as 3 days. These are probably more effective when applied in the earlier stages of an infestation.

• Oils and soaps. Though labeled for leafhoppers, JMS Stylet Oil typically is not used specifically for PL control. It likely will knock back but not control moderate to heavy infestations (comment based on intuition, not field or re- search experience). Grower experience with soaps against PL has been disappointing. See labels for cautions on use in temps >85F and for compatibility issues.

(Source: *Long Island Fruit & Vegetable Update, No. 11, MAY 27, 2010*)

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Weather data: (Source: [UMass Landscape IPM Message #14, June 4, 2010](#))

Region/Location	2010 Growing Degree Days	
	1-week gain	total accumulation for 2010
Cape Cod	106	530
Southeast MA	120	535
East MA	130	575
Metro West MA	128	497
Central MA	126	505
Pioneer Valley MA	126	567
Berkshires MA	137	494

Additional Weather Data is available from the following sites:

- UMass Cold Spring Orchard (Belchertown MA), Tougas Family Farm (Northboro MA), and Clarkdale Fruit Farm (Deerfield MA) at <http://www.umass.edu/fruitadvisor/hrcweather/index.html>
- University of Vermont Weather Data from several sites around the state at <http://pss.uvm.edu/grape/2010DDAccumulationGrape.html>
- New Hampshire Growing Degree Days at <http://extension.unh.edu/Agric/GDDays/GDDays.htm>
- Connecticut Disease Risk Model Results at <http://www.hort.uconn.edu/ipm/>

In addition, we are working on integrating new base stations into the Network for Environment and Weather Applications program run by the Cornell IPM team at <http://newa.cornell.edu/>. This will include the ability to run disease and insect development models for a wider area. Stay tuned.

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Meetings:

Wednesday, June 9, 2010

2010 Vermont Grape & Wine Council Annual Conference

Three Stallions Inn in Randolph, Vermont

see <http://www.vermontgrapeandwinecouncil.com/what-s-happening/> for details and registration information

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FYI - check out the newly formed [Massachusetts Farm Winery and Growers Association](#) and [New Hampshire Winery Association](#) and the [Vermont Grape and Wine Council](#). These associations are of, by and for you!

Join today!!

For Massachusetts residents, check out the new [Massachusetts "Ag Tag" license](#) plate. Each purchase can yield \$15 for the Massachusetts Farm Winery and Grower's Association through a check-off plus pooled funds available for various programs or competitive grants. Get yours today!

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*This message is compiled by Sonia Schloemann from information collected by: Arthur Tuttle and students from the University of Massachusetts and Frank Ferandino from the University of Connecticut. We are very grateful for the collaboration with UConn.*

We also acknowledge the excellent resources of [Michigan State University](#), Cornell Cooperative Extension of Suffolk County, and the [University of Vermont Cold Climate Viticulture Program](#). See the links below for additional seasonal reports:

[University of Vermont's Cold Climate Grape Growers' Newsletter](#)  
[UConn Grape IPM Scouting Report](#)

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*Support for this work comes from [UMass Extension](#), the [UMass Agricultural Experiment Station](#), [University of Connecticut Cooperative Extension](#), [NE-SARE](#) & [NE-IPM Center](#)*



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