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Vineyard and Winery Information Series:

VITICULTURE NOTES Vol. 24 No. 2, May - June, 2009

Tony K. Wolf, Viticulture Extension Specialist, AHS Jr. Agricultural Research and Extension Center, Winchester, Virginia

vitis@vt.edu

<http://faculty.vaes.vt.edu/vitis>

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I. Disease management updates:

(Mizuho Nita, Grape pathologist, Virginia Tech)

In many part of Virginia, vines are at full bloom to post-bloom, when the all major fungal diseases can cause damage to your vines. Frequent rains, humid nights with lingering tissue wetness, and unsettled atmospheric conditions that can spawn afternoon thunderstorms leave few options but to aggressively approach our fungal disease threats. Please spend some time to make an assessment of the situations in your vineyards. For example, at Winchester, we had four nights (6/4-6/7/09) with average temperature above 55F and average relative humidity of 90% or more. Average temperature during the night of 7 June was about 69F, and relative humidity was around 80%. Such warm, humid nights favor sporulation of the downy mildew fungus.

With rain events in the weather forecast, downy mildew is now a major concern. In my research vineyard here at Winchester, the previous fungicide application was made one week ago (at bloom); however, due to complications with a fungicide trial treatments, some of vines did not receive a good downy mildew material. In addition, some vines are almost finished blooming, and untreated vines (for trial purposes) have been showing downy mildew symptoms. Thus, to protect vines, I made an application (1st post-bloom) on 8 June. As you can imagine, there are so many things to consider before you apply fungicide(s). Conditions you may need to consider are: when you applied the last application, what chemical you applied (locally systemic and rainfast vs. non-systemic), how much rain you have received, varietal susceptibility, how much growth and/or development were observed, the history of your vineyard, etc.

Here are some of potential scenarios that I came up with. Please take a look at them. You may find them useful or at least interesting.

1) Last application: two weeks ago; mancozeb + sulfur (or similar protective fungicides); vines

are in bloom or post-bloom; little or no rain in previous weeks; expecting rain this week --> It is about time for protective spray, but you probably have a wide range of choices. You may stick with economical protective fungicide (e.g. mancozeb + sulfur), or mix up with other fungicides of your choice.

2) Last application: **one week ago**; mancozeb + sulfur (or similar protective fungicides); vines are in bloom or post-bloom; little or no rain in previous weeks; expecting rain this week --> Here comes a judgment call. If you did not experience rain in the last week, you may be able to wait until next series of rain is over and hit vines with curative fungicides (Ridomil or phosphorus acid for downy, Rally for black rot, etc.) to act against potential infections which occurred in previous rains. Tank mix a broad-spectrum, protective fungicide such as mancozeb for upcoming rains, and sulfur for resistance management.

3) Last application: **two weeks ago**; mancozeb + sulfur (or similar protective fungicides); vines are in bloom or post-bloom; had 2-3 days of rain during previous weeks; expecting rain this week --> Downy mildew and black rot will be your major concerns. Consider using products with curative activities (Ridomil or phosphorus acid for downy, Rally for black rot, etc) to act against likely infections which happened in previous rains. Tank mix a broad-spectrum, protective fungicide such as mancozeb for upcoming rains, and sulfur for resistance management.

4) Last application: **one week ago**; mancozeb + sulfur (or similar protective fungicides); vines are in bloom or post-bloom; had 2-3 days of rain in last week; expecting rain this week --> Downy mildew and black rot might be your major concern. Depends on how much rain you received, the protection from mancozeb and sulfur may be gone by now. Consider using products with curative activities (Ridomil or Phosphorus acid for downy, Rally for black rot, etc) to act against potential infections which happened in previous rains. Tank mix a broad-spectrum, protective fungicide such as mancozeb for upcoming rains, and sulfur for resistance management.

5) Last application: **one week ago**; Ridomil+ sulfur (or similar systematic fungicides); vines are in bloom or post-bloom; had 2-3 days of rain during last week; expecting rain this week --> Ridomil should provide effective coverage for 10-14 days (note: Phosphorus acid does not have as good of protective properties as Ridomil). However, consider the history of your vineyard and current situation. If you had an issue with downy mildew or black rot last year, you may need to be more diligent this year. Scout your vineyard and look for symptoms of downy or black rot (please see images below). If you find downy mildew or black rot developing, you will need to take a more aggressive approach with protecting your vines against the upcoming rain events. If you know vineyards are clean (historically and right now), then you may be able to hold off your application until after the upcoming rain events. Either way, downy mildew and black rot might be your major concern. Consider using products with curative activities (Ridomil or Phosphorus acid for downy, Rally for black rot, etc) to act against potential infections which occurred in previous rains, and tank mix a broad spectrum protective fungicide such as mancozeb products for upcoming rains.

The other disease of concern would be Botrytis. It can cause infection on flowers and cause problems later in the season. This is another fungus which likes humid weather. You may want to include some of Botrytis materials such as Elevate, Endura, and Pristine in your program to protect flowers. And although I did not mention in the previous scenarios, you still want to protect your vines from powdery mildew. Sulfur would be a nice and economical insurance. If you decided to use other products, such as Sterol-inhibitors, please make sure you rotate the mode of action of the chemical.

Here are pictures of downy mildew and black rot for your reference:

Downy mildew "oily spot" symptoms, upper side of the leaf



Downy mildew sporulation, underside of the leaf



Black rot symptom



II. Seasonal reminders:

- *Canopy management:* Shoot hedging of vigorous VSP-trained vines (and upper Smart-Dyson canopy) has commenced in most areas of the state. Remember to retain 15 or more leaves per shoot in doing any hedging. Tipping of downward-oriented shoots (GDC, Smart-Dyson, or Scott-Henry) can help avoid pinching shoots off the vine by passing vehicle tires. Continue shoot positioning if needed – upright with VSP and follow-up downward combing with downward-oriented shoots of GDC, Smart-Dyson and Scott-Henry. Repeat the downward shoot combing if needed to facilitate the process – vinifera are more stubborn than American-type grapes, and may require additional positioning to develop downward-oriented canopies.
- *Crop control:* My general rule of thumb is to aim for about 1.5 to 2.0 pounds of crop per foot of canopy – the lower number for reds; the higher for whites. Again, this is a *general* rule and you may wish to further reduce those levels if your own situation and experience warrant the reductions. With vigorous vines (if you're hedging shoots now, they're vigorous) wait until July (but prior to veraison) to effect further crop reduction, otherwise vines will compensate with larger berries and more compact clusters. With low-vigor and/or young vines, remove additional crop soon after fruit set (now), once you can see the extent of set. Remove all clusters from stunted shoots (e.g., those that appear to have aborted shoot tips and that are less than 18 inches long). Basal clusters are typically the larger(est) clusters on shoots that bear 2 or more clusters. Deciding which cluster(s) to remove on a shoot has more to do with proximity to other clusters than to position on the shoot though. We prefer to thin clusters with the strategy of minimizing cluster-to-cluster contact, or contact of the cluster with trellis hardware or cordons, rather than following a particular prescription for basal cluster versus more distal cluster removal. Clusters and berries that freely develop without contact with other objects tend to be freer of fruit rots and exhibit more uniform berry ripening than do clusters that are contacting trellis or grapevine parts.
- *Nutrition:* It's not too late to collect bloom-time petioles for plant tissue analysis (see directions at my website: <http://faculty.vaes.vt.edu/vitis>. Click on "Grapevine Petiole Sampling Instructions"). Small rates (e.g., about 20 pounds actual N/acre) of nitrogen can be applied shortly after bloom to carry vines through harvest if N was low in previous years. Make sure that applied nutrients are incorporated, as by cultivation or rainfall. Soil-applied nutrients will be unavailable to the plant unless there's sufficient incorporation and soil moisture to get the nutrients to the roots. Don't apply what's not needed. Use plant tissue analysis, soil testing, and visual observation to determine nutrient needs, not commercial salesmanship. We continue to recommend either the Penn State plant analysis lab or A&L Eastern Laboratories for submission of plant tissue analyses. IMPORTANT: You can submit plant tissue samples directly to these labs with the appropriate submission forms: Penn State plant analysis forms are available at: <http://www.aasl.psu.edu/>. Click on "submitting samples" on the menu on the left-hand side of screen. A&L Eastern Laboratories also has submittal forms for plant tissue samples at their website (<http://www.al-labs-eastern.com/agricultural.html>). Due to lack of personnel assistance, we are no longer providing fertilizer recommendations; however, one can formulate a fertilization strategy by following the guidelines in the nutrition chapter of the Wine Grape Production Guide for Eastern North America. A comment on foliar fertilization: this might be desirable if vines are very low in particular nutrients such as nitrogen or boron, but the general response is ephemeral; a more

persistent response can be obtained by using soil application of what are normally cheaper fertilizers. If you choose to use foliar fertilizers, be wary of mixing with pesticides and/or spray adjuvants, especially during hot, humid weather. We have seen some dramatic injury occur to developing berries and leaves when certain foliar fertilizers are combined with pesticides.

- *Insects*: Scout for grape berry moth infestation in developing grape clusters. Insecticide options, if warranted, are in the PMG (<http://www.ext.vt.edu/pubs/pmg/hf3.pdf>). Aerial phylloxera becomes apparent at this time of year on some varieties (esp. some hybrids) and may warrant insecticidal control if historically severe (see the PMG, which currently lists several insecticide options). Japanese beetles can be expected to make their appearance towards the end of June. Control is often warranted to avoid excessive defoliation by Japanese beetles and a number of insecticide options are found in the PMG.

III. Weed Management Update in Grape Production

Jeffrey Derr, Weed Scientist, Virginia Tech

Rely herbicide (glufosinate) has undergone some formulation change. The old formulation of Rely was a one pound per gallon formulation of the active ingredient glufosinate. Use rates in grapes were 3 to 5 quarts per acre. The new formulation, called Rely 200, is a 1.67 pound per gallon formulation. Since this is a more concentrated product, the use rate is lower than that for the older form. Application rates for Rely 200 are 57.5 to 115 fluid ounces per treated acre, which corresponds to 0.75 to 1.50 pounds active ingredient per treated acre. The lowest rate would be used for control of small annual weeds less than 6 inches in height. For control of larger annual weeds and perennial weeds, apply 77 to 96 fluid ounces per treated acre. Rely 200 can be applied at the rate of 77 fluid ounces per treated acre for sucker control. For spot treatment, apply 2.4 fluid ounces per gallon and lightly wet all foliage of weeds to be controlled. Do not allow Rely 200 to contact desired grape foliage or green stems of developing trunks. Vines must be at least one year in the ground before application, or the vines need to be protected from the spray by nonporous wraps or grow tubes.

Rely 200 is my preferred product for nonselective control of emerged weeds in the vineyard. It has a much lower acute toxicity compared to paraquat (Gramoxone Inteon) and is more effective on perennial weeds than paraquat is. Paraquat is a strictly contact herbicide while glufosinate is a contact herbicide with limited systemic action. Since glufosinate has limited translocation in plants, it can be used for sucker control. Glufosinate does not pose the risk of severe systemic damage which can occur with glyphosate (Roundup WeatherMax, etc.) products. Glyphosate is more effective in general, though, on perennial grasses and broadleaf weeds compared to glufosinate.

Rely 200 has no soil residual action so a preemergence herbicide should generally be added for preemergence weed control. By combining Rely 200 with a product such as Surflan, Chateau, or Princep, one would achieve both control of existing weeds along with 3 months or more of residual weed control. Follow all label directions for both products when making such combinations. If you are producing other fruit crops, Rely 200 can also be used for weed control in apple and blueberry.

Rely 200 is in short supply this year. You may want to place your order as soon as possible if you plan to use it this year.

IV. Other news:

A. Grapes for Sale postings: We have provided a service in the past five years for those seeking to sell or to purchase Virginia-grown grapes by listing such want-ads on our Viticulture Notes listserv. We resumed this service for 2009 with a slight change: I will no longer send the updates out on our listserv. Rather, the updates (roughly every two weeks) will be posted to a section on my website. Please see: <http://arecs.vaes.vt.edu/arec.cfm?pid=vitis> (be sure to scroll down after clicking on "Grapes for Sale" topic. If you wish to list grapes at this site, please email me (vitis@vt.edu) with your full name, phone number, Virginia county name where your vineyard is located, email address, and the tons, by variety, that you either wish to contract for sale or for purchase. Interested parties can communicate directly with each other. Please do not use special formatting -- just provide the information requested here in normal text.

B. Pest Management Guides: Virginia Cooperative Extension's annually-revised Grape Pest Management Guides are available online now at: <http://www.ext.vt.edu/pubs/pmg/>. The 2009 PMG includes recently registered fungicides, insecticides and herbicides as well as information on pesticide safety and legal restrictions.

C. Guidelines for Developing an Effective Fungicide Spray Program for Wine Grapes in Virginia, 2009: Dr. Mizuho Nita, our grape pathologist (<http://faculty.vaes.vt.edu/nita24>) has written an instructive guide to tailoring a disease management program to Virginia growing conditions. Dr. Nita also posts a blog on his website that provides an informative analysis of what is happening in the vineyard at Winchester.

D. Wine Grape Production Guide for Eastern North America: This 336-page book has been available now since February. The book's 16 chapters provide a comprehensive guide for beginners and seasoned grape producers. A description of the book and ordering information is available at: http://www.nraes.org/nra_index.taf?pr_new=1.

V. Upcoming meetings:

A. Vineyard meetings in Virginia

A number of vineyard meetings, arranged by Virginia Cooperative Extension Agents, have been arranged for the period from April through early August. The meetings generally include one to several grape specialists with Virginia Tech and the Cooperative Extension agents and vineyard host(s) may provide presentations as well. Presentation topics may be modified slightly depending upon unique seasonal issues.

June 24th Doukenie Winery (<http://www.doukeniewinery.com/index.cfm>)

George Bazako, Sebastien Marquet (winemaker)

- Topics – Canopy and crop management

***** Meeting will be in the evening – contact Leslie Blischak for details *****

Directions: (Loudoun County) See Doukenie Winery website (<http://www.lindenvineyards.com/linden/>)

For more information: contact Leslie Blischak, Loudoun County Cooperative Extension (703)-737-8978 lblischa@vt.edu

AGRITOURISM WORKSHOP SET FOR INTERESTED ENTREPRENEURS

Considering adding excitement to your farm, tourists to your fields and hopefully more money to your bottom line by incorporating agritourism into your farming operation? If so, Agritourism: It's More Than a Farm Tour . . . Act III is the right program for you to discover new ideas to enhance your facility! Scheduled for Charlotte County on Wednesday, June 24, at the Workforce Development Center, Southside Virginia Community College on the John H. Daniel Campus in Keysville, Virginia (Charlotte County), the program will begin at 10 a.m. and conclude at 4 p.m.

Presented by the Virginia Department of Agriculture & Consumer Services (VDACS), Virginia Tourism Corporation, Virginia Electronic Commerce Technology Center (VECTEC), and Virginia Cooperative Extension in partnership with Old Dominion Resource Conservation and Development Council, Agritourism: It's More Than a Farm Tour . . . Act III will give you a broad overview of agritourism possibilities as well as the need-to-know details. Whether you're interested in a corn maze, pick-your-own blackberries, a pumpkin patch or an enterprise of your own design, this workshop will help with agritourism basics and more. Topics will include an overview of Virginia's agritourism/agritainment, strategies for marketing the agritourism operation, connecting Virginia's Standards of Learning to agritourism functions, Internet marketing, delivering exceptional customer service, and an overview of agritourism liability issues.

The workshop is free, but you must register by Friday, June 19, 2009. To register contact the Virginia Cooperative Extension, Charlotte County office, by calling 434-542-5884, or e-mail Theresa Long at thlong@vt.edu. For more information on agritourism programs, please contact Dr. Martha A. Walker by phone at 434-766-6761 or by e-mail at walker53@vt.edu.

*If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in this activity, please contact Martha A. Walker, Central District Office, at 434-766-6761 during business hours of 8 a.m. and 5 p.m. to discuss accommodations 5 days prior to the event. *TDD number is (800) 828-1120.*

Maryland Grape Growers Association Summer Field Day:

The MGGA Summer Field Day is coming up Saturday, June 27th from 9:30 until 4 PM at Bordeleau Vineyard in Eden (Wicomico County), MD. www.bordeleauwine.com. Our keynote speaker will be internationally renowned Dr. Andrew Landers of Cornell University who will be providing an in-depth session on pesticide application covering droplet formation, label interpretation, calculations and volume adjustments, and everything from backpack through airblast sprayers. Go to www.marylandgrapes.org for further information and on-line registration.

34th Annual ASEV-ES Conference and Symposium

"Wines and Vines in a Changing Climate"

Quail Hollow Resort, Painesville, OH

July 20-22, 2009

Please join us for the 34th Annual American Society for Enology and Viticulture-Eastern Section Conference and symposium in Painesville, OH, 22 miles east of Cleveland. The program

includes a preconference tour, technical sessions and student paper competition, and our program symposium *Wines and Vines in a Changing Climate*. For those arriving early, Golf, Lake Erie fishing charters, or a visit to the Spa at Quail Hollow are available.

One day, and separate registration options are available for the different programs and activities. Deadline for early registration is **June 18, 2009**, and cutoff date for hotel reservations at special conference rates is **June 28**.

Conference information and registration is available at:

<http://www.nysaes.cornell.edu/fst/asev/pdf/2009-ASEVES-Conference-Info.pdf>

Program schedule is available at:

<http://www.nysaes.cornell.edu/fst/asev/pdf/2009-ASEVES-Conference-Program.pdf>