**WINE GRAPE INFORMATION FOR PENNSYLVANIA AND THE REGION**
From Penn State Cooperative Extension

Rain and Grape Diseases

Even though I have been away at school for the past week I did notice that it rained... A LOT. So the dry perfect season has hit a bit of a pothole and now there is downy mildew, powdery mildew and black rot to contend with in the vineyard. While it has dried out for the moment, heat and humidity and heavy dew at night and mornings continue to create infection periods. Now is a really good time to be on top of your spray program. I would like to pass on to you two excellent and timely articles on disease control from extension colleagues in Virginia and Long Island. Ashley Meyers is the new grape pathology extension specialist at Virginia Tech, working with Dr. Tony Wolf at the research station in Winchester, VA. And most of you will recognize the name of Alice Wise, the extension viticulturist at the Cornell research station on Long Island and Dr. Wayne Wilcox, the grape pathology specialist at NYSAES in Geneva, NY. This is some sage advice and valuable information. I would like to thank my colleagues for sharing it with me and allowing me to share it with you.

**From Ashley Myers (6.28.06):** Due to the repeated rains and warm temperatures, weather conditions across much of Virginia (and region) are optimal for downy mildew and black rot infection. In addition to the foliage, clusters are still in a highly susceptible stage of development for both diseases in many vineyards. More than 4 inches of rain have fallen here in Winchester since Saturday, 24 June and rain has occurred daily since, with another heavy rain passing through within the hour. Vineyards that had been sprayed with non-systemic materials only prior to the rain have likely been vulnerable to downy mildew and black rot infection during or at some point after that much rain.
Growers are encouraged to use a post-infection material ("eradicant") if you believe that your vineyard was "unprotected" during the prolonged rainy weather. Options are: phosphorous acid (e.g., Prophyt, Phostrol) or Ridomil Gold MZ for downy mildew, and Nova or Elite for black rot. For downy, the phosphorous acid products have good to excellent protective activity when applied 3 to 8 days before an infection period and excellent post-infection activity 3 to 4 days after infection. Ridomil Gold MZ is an excellent product for downy mildew and has good curative activity if applied within 4 days of infection. If you believe that you had sufficient residue of protective fungicides (Pristine, Abound, mancozeb, captan) present at the start of rains and are planning to go with a downy mildew protectant in your next spray, consider adding phosphorous acid for extra insurance - just in case some infections slipped through the protective net.
With the previous rain and potential for isolated thunderstorms the remainder of the week, caution is definitely in order, especially on vinifera cultivars. While we are concerned about potential problems with downy mildew and black rot, growers are also reminded that other diseases, such as botrytis and powdery mildew, often "erupt" at this time of year. Take some time to review notes from vineyard field meetings and

newsletters issued earlier this spring.

**From Alice Wise (6.26-30.06):** Not surprising, downy mildew can be found in most blocks. The goal is to minimize it and keep it off the fruit. Keeping it out totally may be impossible given recent weather. The single most important thing now is to keep up with the spray schedule, leaf pull in the cluster zone as soon as possible and scout fruit for signs of infection. Many of the powdery mildew problems in years past have started in early fruit set. The newly set berries are highly susceptible to fungal diseases esp. powdery mildew and black rot. No reports of GBM but it is likely around in the usual spots. No sign of Japanese beetles yet. Potato leafhoppers seem to be persisting at moderate levels. Expect mite populations to climb with warm weather.

*Downy Mildew:* How bad DM gets depends on the weather (dry weather is one of the best downy mildew controls), protection on vines prior to the infections periods of this week, and subsequent spray schedule.

Broad spectrum protectants like mancozeb and captan are still very good protectants for downy mildew. Note that the 66 days to harvest limitation for mancozeb products is fast approaching. Ziram and ferbam also are protectants but are not as effective. Abound is rated as very good against downy but past experience dictates that even Abound does not provide complete control under heavy disease pressure. Note that Abound has consistently been far superior to mancozeb in Wayne Wilcox's trials in years with heavy disease pressure. The new registered Pristine has consistently been the top performer in Wilcox's trials. Remember that this is a combination of two fungicides, a strobilurin and something else, but only the strobie component is active against DM. To guard against resistance developing, limit use of all strobie products to a maximum of two or three applications per season. Flint provides only slight control, insufficient when disease pressure is beyond minimal. Bottom line: even with a decent protectant schedule, vigilance is still necessary as are follow up treatments if downy breaks through. Also, no pesticide works well on a raging infection.

Copper, the old standby, is a very good protectant. In local experience, applications to existing infections appear to slow them down, although it doesn't truly eradicate them. Exercise caution with copper for several reasons. First, it is most phytotoxic under humid, slow drying conditions. Do not be lured into a false sense of security if you've never had this enlightening experience. Follow label directions for use of spray lime as a safener. Read the label and the ***NY/PA Pest Mgt Rec's*** for grapes for cautions on incompatible spray combinations.

Ridomil is a very effective downy material, the absolute best option for DM control. Given the weather in recent weeks – ideal for DM – Ridomil is the best choice. It is not recommended for use on existing infections due to the danger of resistance. However, if you haven't abused the privilege in the past and if there are low levels of infection, applying Ridomil will provide both curative control and forward protection. Again, do not use this material on a DM epidemic, you are doing a disservice to yourself and to the industry.

The last option would be one of the phosphorus acid products – Aliette, Prophyt or Phostrol – all of which have post-infection activity and some forward protection. Forward

protection is longer on younger leaves (7 days) as PA is very mobile in the plant and travels from older leaves to younger. Fortunately, this is the most susceptible tissue. Downy infects leaves for about a week after they unfold. Older leaves are not susceptible to downy mildew. Applications to existing infections greatly reduce the production of new spores that spread the disease, but they do not completely eradicate the infections. From Wayne Wilcox's annual disease write up: "There continues to be some confusion about terminology, particularly because several different nutrient solutions also control phosphorous acid to 'promote plant health'. The fact that they promote health by controlling DM, without actually claiming to do so, is one of those gray areas of the law. The bottom line is that phosphorous acid controls DM but doesn't provide P in a form that can be utilized by the plant; in contrast, the phosphoric acid found in traditional fertilizer provides utilizable P but doesn't control DM. Even more ambiguous is that fact that products claiming to be nutrient solutions must state the amount of P that they contain in terms of phosphoric acid equivalents (the nutrient), even if they provide only phosphorous acid (i.e., phosphite, the DM material). Also note that it can be difficult to tell just how much phosphite is in some of these nutrient solutions, and that the rate matters for DM control. Sound confusing? It is. Products like ProPhyt and Phostrol, which are labeled for DM control, are sometimes more expensive than the nutrient solutions but you know just what you're getting [and] their manufacturers stand behind these products for DM control." (*AW & WFW*)

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