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DISEASE CONTROL PROGRAMS
FOR FINGER LAKES WINE GRAPES

Wayne Wilcox
Dept. Plant Pathology, Geneva

Time for a brief review of some major points and new developments concerning grape disease control programs.

Powdery Mildew
Recall that early season infections develop from inoculum that overwinters on the vine. These require rainfall (about 0.1” minimum) with temperatures above 50°F to get started. Once they’ve developed, secondary spread does NOT require rain. Secondary mildew can be “explosive”, since a new generation can multiply every 6-8 days at temps of 60-80°F.

Concord fruit are susceptible to infection only during the prebloom through early fruit set period. So far, other labrusca varieties haven’t been examined to see if this holds true for them, also. *Vitis* fruit are generally thought to remain susceptible until veraison, although it’s possible that they’re “extra” susceptible during the early stages of development. Furthermore, yield and quality losses on these varieties are likely to be particularly pronounced when infections occur during the early stages of fruit development. Nobody’s looked that critically at hybrids yet.

“New” fungicide: Procure 50W. This is really an old SI that finally got Federal registration last year and now has NY registration. Our experience with it is limited, although we’ll have several trials this coming season at Geneva and at a commercial location. It doesn’t provide adequate control of black rot by itself (similar to Rubigan). California data suggest PM control levels in the Rubigan or Nova range.
**JMS Stylet Oil:** In our trials last year, the 1.5% and 2% rates were about equal, much better than the 1%. Thorough coverage is critical, so don't waste your money if you're not willing or able to provide it. Don't apply if temps get up into the 80's, or there's a risk of frying (apply during the cool part of the day if we get into hot weather). One interesting finding last year was that a seasonal program (6 sprays at 2-wk intervals) ending on Aug. 15 provided outstanding residual control of leaf infections into early October, much better than any of the other registered materials. We'll be checking this year to see if using alternative materials into mid-July and then putting on the last two shots with JMS will provide this residual control again. Could be significant for varieties (e.g., *viniferas*) that particularly benefit from maximum leaf function until frost.

**SI resistance:** See the new issue of Grape Research News for a detailed discussion. Bottom line is, as we all know, Bayleton will poop out before Rubigan or Nova. So why take a chance with it anymore? Avoid using SIs beyond the first or second postbloom spray. If you have used them up to that point, PM should be under pretty good control and sulfur should keep it down the rest of the way. It makes much more sense to use SIs early and sulfur late, rather than the other way around, for two reasons: (1) resistance management; and (2) sulfur's much more effective at summer temperatures than at spring temperatures.

**Black Rot (BR)**
Most vineyards were pretty clean last year. Remember that, in addition to weather conditions, the need for early season sprays is largely dependent on how much black rot you had last year. The less you had, the better you can start. In a set of pretty involved timing trials in Dresden last year, we got complete control of fruit infections with only three sprays of Nova: immediate prebloom and two additional applications at 14-day intervals (over 50% of the berries were infected in the unsprayed plots, so there was plenty of pressure). Although spring was pretty dry, there were a couple of early infection periods, and they didn’t have much of an effect if left uncontrolled.

We’ll be continuing the same trial this year, to get a better handle on how early it’s really necessary to start. There’s now pretty good data to confirm that berries are resistant to infection after about Aug. 1 in the Finger Lakes region, and that additional sprays are seldom needed beyond pea-sized berries if control has been thorough up to that point.

**Downy Mildew (DM)**
Plenty of overwintering inoculum in a number of vineyards due to last year’s leaf infections that came in late. The very first spores for primary infection don’t become available until about 10-inch shoot growth, but plenty are mature by prebloom. Remember, once primary infections develop (there is almost always some on sucker or seedling growth, at least), secondary spread occurs when we get muggy nights followed by rains or showers.

Nothing new for control, yet.

**Phomopsis (Ph)**
Still a bit of a mystery disease—it’s there, but how much economic damage does it cause? There are two phases of this disease, leaf/shoot and rachis/fruit. The importance of leaf infections is somewhat questionable. The shoot phase is important mostly because it can produce new inoculum that threatens rachis/fruit infections, which is where the economic losses occur. Note, however, that shoot infections don’t produce new inoculum until the next season, so many of them get pruned off before they cause any harm. For instance, several years ago Jay Pscheidt and Roger Pearson showed that they could get the same control of *Phomopsis* in hedged Concord plantings by either going to hand-pruning and not spraying for it, or by continuing to hedge and spraying mancozeb.

Fruit infections are a significant threat only if weather is wet for several consecutive days during the prebloom through fruit set period. Fruit infections normally occur during this time but stay latent (dormant) until just before harvest. Thus, it’s likely that the late season “black rot” that sometimes appears is really *Phomopsis* that first infected during bloom and is finally expressing itself. Rachis infections probably occur primarily during the first 2-3 weeks before and after bloom.
Mancozeb is the preferred material for control, but when should it be applied? Based on discussions with several individuals, here’s how I see it. Unless the block has a history of severe *Phomopsis* (Ph), save the mancozeb until rachises and fruit need protecting and then play the weather (you’ll get more bang for the mancozeb buck against BR and DM). This means concentrating on the immediate prebloom spray, and maybe the one before it if the weather’s wet and/or the block is in a high risk category (disease history, hedged or minimally pruned).

**Botrytis Bunch Rot**

Roger Pearson developed reams of data showing that a spray of Rovral at veraison and 2 weeks later did as good a job against *Botrytis* as did previous recommendations that also included sprays at bloom and bunch closing. However, 1994 was an exception: warm, wet weather during bloom was ideal for *Botrytis* (average day + night temps of 60-80°F are ideal), and adding a bloom spray significantly improved control. Last year, bloom was dry and those sprays once again provided no additional benefit.

*Botrytis* is extremely dependent on highly humid microclimates around tissues to be able to infect. This is why leaf pulling, pruning/training, site selection, and other horticultural practices are so important and beneficial for its control. Roger’s data suggest that in most years, conditions aren’t suitable for bloom time infections, but apparently they can be under the “right” set of conditions. One more thing: these timing spray trials have all been conducted on ‘Aurore’ vines, so there’s at least some question as to how widely their results should be applied to later-maturing varieties or to super-susceptible ones like Pinot Noir.

Bottom line: don’t fix it if it ain’t broke. However, recognize that bloom sprays may be useful if weather is wet. Also, if previous programs have not been satisfactory, experiment with an application during the bloom period if conditions seem to warrant it. Trials at Dresden have consistently shown that captain does nothing for *Botrytis* under high pressure situations, so the only real option is Rovral. It’s certainly desirable to limit Rovral use to two sprays per year (economics AND resistance management), but if a third spray is needed in the odd year at bloom or bunch closing, it won’t suddenly drive things over the edge.

**Correction:** For several years, the Recommends have suggested that under certain conditions (late varieties, rain wash-off), three preharvest applications of Rovral sometimes may be necessary. This is illegal! Rovral is labeled for a maximum of two post-veraison sprays. We’ll correct the Recommends next year. As always, follow the label—it’s the law.

**Putting It All Together**

There are many good programs for controlling these diseases. Here are a few considerations.

3-5 INCH SHOOT GROWTH. Time to start control of PM in *vinifera* and some hybrid blocks with bad PM last year. May also be necessary to control BR and/or Ph in blocks with those problems last year, depending on weather. It is even less necessary to control BR now if Nova will be used in the next spray, since that will provide some reach-back activity. **Option A:** Nothing. **Option B:** Nova (PM, BR). **Option C:** sulfur (PM). Not very active at temps below 60°F. **Option D:** mancozeb (BR, Ph). Will also control angular leaf scorch (ALS) on susceptible varieties if very wet. **Option E:** C + D.

10-INCH SHOOT GROWTH. Traditionally, we’ve recommended not to wait any longer to control BR. This may be a bit conservative if BR was well-controlled last year and/or weather is dry. Again, you get a little latitude if using Nova in the prebloom spray, due to its reach-back. Don’t wait any longer to control PM on susceptible cultivars. DM control may be needed on susceptible cultivars if disease was prevalent last year and weather is favorable (the “10-10-10” rule, i.e., 10°C = 50°F + 10 mm = 0.4” of rain + 10 hr of leaf wetness). Rachis infections by Ph are a possibility, particularly if weather is wet. **Option A:** Mancozeb (BR, Ph, DM, ALS). A broad spectrum, economical choice if PM isn’t a serious concern. **Option B:** Nova (PM, BR). **Option C:** Nova + mancozeb (PM, BR, Ph, DM, ALS). Or, if you’ve reached 12-inch
shoot growth, substitute Rubigan for Nova (no label for Rubigan earlier). Cheaper, same PM control, count on the mancozeb for BR.

**Option D:** sulfur + mancozeb (PM, BR, Ph, DM, ALS). Not as effective as Option C, but cheaper.

**PREBLOOM.** A critical time for PM, BR, and DM. Important to protect against potential fruit infections by Ph if wet weather is anticipated. Ditto for ALS on susceptible varieties. This and the first postbloom spray are probably the most critical sprays of the season—DON'T CHEAT!  

**Option A:** Nova + mancozeb (PM, BR, Ph, DM). Provides postinfection activity against BR infections, which Option B doesn’t.  

**Option B:** Rubigan + mancozeb (PM, BR, Ph, DM). Cheaper than Option A.  

**Option C:** Nova + Ridomil MZ (PM, BR, DM). Pretty expensive, but the most effective option for DM under severe disease pressure. Spike with extra mancozeb if Ph and ALS protection is needed.  

**Option D:** Substitute Rubigan + mancozeb for Nova.

**BLOOM.** Rovral for Botrytis control may be needed infrequently, i.e., if warm and prolonged wet. See previous discussion.

**FIRST POSTBLOOM.** Still a critical time for PM, BR, and DM. Ph fruit infections still possible if very wet. Same Options as under PREBLOOM.

**SECOND POSTBLOOM.** BR control may still be needed if disease was present last year, particularly if weather is wet. Primary PM is over, maintain control of secondary infections on susceptible cultivars. Ph danger is over. Primary DM is still a threat if weather is favorable, particularly if the disease was prevalent last year.  

**Option A:** Nova (BR, PM) + captan or mancozeb (if >66 days until harvest) if DM control needed.  

**Option B:** Rubigan (PM) + mancozeb (if >66 days until harvest) for BR and DM.  

**Option C:** Sulfur (PM).  

**Option D:** Mancozeb (if allowed) + sulfur (PM, DM, BR if needed)  

**Option E:** Include Ridomil MZ (DM) in one of the preceeding if disease pressure/economics say so.

**ADDITIONAL SUMMER SPRAYS.** Check the vineyard regularly to see what’s needed.

The goal is to keep SIs out of the program for the rest of the season, for resistance and bottom-line management. On *vinifera* and other cultivars requiring continued PM control, use sulfur or Stylet Oil (especially if problems start to develop). BR should not be an issue beyond this point, unless there’s been a mess-up (even then, fruit lose susceptibility by about Aug. 1). For DM, there’s copper/lime or captan.

**CODE-A-PHONE IS BACK!**

The Finger Lakes Grape Program Code-A-Phone will be back in operation as of 4:30 pm Friday May 9. If you have not used the Code-A-Phone in the past, it is a recorded message that gives updates on the pest situation, important stages of development and critical timings of sprays, fertilizer applications, upcoming meetings of interest, and more. The message is updated 2-3 times per week through June, and at least once per week through the rest of the season.

To use the Code-A-Phone, simply call the Finger Lakes Grape Program office at (315) 536-5134 between the hours of 4:30 pm and 8:00 am on Monday through Friday, and all weekend long. You may also leave a message with any questions or comments that you might have. If you do not wish to listen to the whole message, but would like to leave a message, press the * button on your phone at any point during the recorded message, and it will skip to the end of the message, and you will then be able to leave a message.

If you have questions or comments about the Code-A-Phone, please contact our office. Please note that the message is NOT available during our regular office hours.

**MARKETS FOR NEW PLANTINGS - WHITE WINE VARIETIES**

David Peterson

In the last newsletter, I discussed some considerations for new vineyard plantings and replanting. With all the concerns about size and stability of the markets and the number of
different possible markets for premium wine grapes, I thought that it might be useful if I summarized what I hear and what I know about the current market situation, especially with regard to varieties. At this time, the greatest potential for market growth appears to be for the premium wine industry. For this reason, I will limit my discussion to this industry. As you are likely aware, there is also significant demand for Niagara (see article by Barry Shaffer that follows) for the white juice industry, and there may be a planting program initiated in the future by Canandaigua Wine Company for the bulk wine market (although this would presumably be to replace less desirable existing acreage). The premium wine industry has grown significantly in the Finger Lakes as well as in surrounding states in recent years, and there is considerable concern among the wineries that shortages of desirable grape varieties are limiting growth of the wineries. In this article, I will concentrate on white wine varieties only. Reds will be discussed in a future issue. The emphasis in this article is on market conditions, rather than viticultural characteristics. Viticultural aspects are discussed more fully in the publication "Wine and Juice Varieties for Cool Climates" available from our office for $4.75 (checks payable to "Finger Lakes Grape Program").

Riesling is the variety that practically every Finger Lakes winery indicates that there is a shortage of. It has the advantage that nearly every Finger Lakes winery produces it, and nearly all wine consumers are familiar with it. But just how big is the market and is this just another "fad" that will quickly fade? The size of the market is difficult to determine. Many wineries sell all that they produce quickly and with little promotion, so they probably cannot accurately project how much they could sell if they had more grapes. The reputation of the Finger Lakes as one of the highest quality producers of Riesling is growing, but it is probably difficult to say if the wineries can penetrate national markets in a big way. But nearly all Riesling producers indicate that their sales are increasing and that they do not currently have enough grapes. I feel that the concerns over it being a "fad" are unwarranted for several reasons. The industry seems settled on Riesling as the "signature" grape for the region, the variety that the Finger Lakes can establish a worldwide reputation for. Nearly every important wine region in the world has 1 or 2 varieties that they are primarily known for. Markets for Napa Valley Cabernet Sauvignon, French Burgundy (Pinot Noir), and Australian Shiraz, for example, tend to be long term and relatively stable. Fads are more typical of unique generic-type products (Cold Duck and wine coolers, for example). While trends change, "signature" wines for a region tend to escape the dramatic short term fluctuations that some products have been associated with. While some growers may be concerned about avoiding the surplus of Finger Lakes Chardonnay that was created by excessive planting in the 1980's, I think that the situation with Riesling is somewhat different. The planting boom of Chardonnay in the Finger Lakes was stimulated by increasing popularity of California Chardonnay on the national market. Wineries in the Finger Lakes were counting on the popularity of California Chardonnay to help them more than it apparently did. With Riesling, demand is based on popularity of the local Rieslings, rather than those from other regions. Demand has been building gradually, rather than a sudden explosion. Another factor is that the number of wineries has grown dramatically in the past 10-15 years, and even more importantly, many of these wineries are now well established on the market, have greater stability (financially as well as quality-wise), and have greater sales. I also think that growers are much more conservative today, and few are putting all their efforts into one variety. In spite of this, we all know that high demand crops or varieties eventually end up in oversupply, but it probably will take a number of years with Riesling.

Chardonnay, as mentioned above, has been in surplus for several years. The small crops in 1993 and 1994 combined with gradually increasing sales by wineries, however, appears to have dried up much of the surplus and is encouraging for the future. Even so, there seems to be little incentive to plant new acreage at this time.

Of the other white Vitis vinifera varieties, Pinot gris may emerge as the next commercially important variety. It seems well adapted viticulturally and wine quality is
promising, although it is too new here to have an established market (at least for Finger Lakes Pinot gris). Wineries are just beginning to experiment with it, and demand is more than sufficient for some new plantings. Several clones are available, although we have little basis to recommend one over another. Pinot blanc is also well adapted viticulturally, but the market seems likely to remain a small niche for varietal wines and perhaps for sparkling wines. Small plantings likely could be needed in the future.

Gewürztraminer has produced some excellent wines in the Finger Lakes, but its vineyard performance has been characterized by winter injury and erratic production on most sites. While some wineries have been fairly successful in marketing the wines, consumer interest may not be great enough for many wineries to market large quantities. The market for limited new plantings should be excellent, but sites suited to economic production of this variety are very limited. An offspring of Gewürztraminer, NY 65.533.13 is expected to be named Traminette in the very near future. This variety, which can produce very "Gewürz-like" wines, may be a real "sleeper" and is likely to have markets with some Finger Lakes wineries.

Cayuga White and Vidal blanc have been growing in popularity with many Finger Lakes wineries (for blending and for varietals). Both varieties are quite productive and are versatile in the winery. Demand appears to be sufficient to entice at least some new plantings.

Seyval continues to be used to some extent by many area wineries, although there appears to have been only a slight increase in demand in the past few years. Current supply more than meets the needs of the premium industry, so new plantings do not seem warranted at this time. Vines should be grafted on a vigorous rootstock (e.g. 5C) for any new plantings.

Vignoles was once thought to be one of the most promising of the white hybrids, but its role now seems to be primarily for the dessert wine niche. Interest is stable, but the market does not appear to be increasing much.

Melody and Chardonel are interesting recent releases from the breeding program in Geneva that probably would have enjoyed more popularity had they been available when most hybrids were planted in the 1970's. Both are likely to have at least small niche markets that could justify small new plantings. Interest in Chardonel is very high in some surrounding states, although I am unaware of any interest from New York wineries.

Aurore was a standard white hybrid variety that was widely planted in the Finger Lakes in the 1970's. The premium wine industry has essentially discarded this variety, due to its poor wine quality. Although its primary use has been for a blending wine, most winemakers feel that nearly any other hybrid variety is a better choice (even for blends). The future seems to be for the bulk wine market only, and it is hard to imagine justifying any new plantings.

Supply of all Native American varieties seems to exceed demand for the wine market, and downsizing appears more likely than new plantings at this time.

I would suggest that growers interested in planting for the premium wine market diversify their variety mix. This will increase the likelihood that you will always have some high demand varieties, which will help you market any that may be in oversupply at that time.

Before planting, I would suggest that growers get some indication from a winery that they would be interested in buying that variety once you plant it. My opinion as to the potential markets for these varieties will not determine if you will have a market once they are in production (That's my disclaimer!). You should also work with the wineries to be sure that the fruit you grow will meet the standards that they require. The premium wine industry may be unlikely to be interested in purchasing fruit from machine-pruned vineyards, for example. In the future, wineries are also likely to place additional quality requirements on purchased fruit (beyond being disease free and meeting a minimum sugar level). Be sure that these details are worked out beforehand!
Please contact me if you have questions as to what varieties your site may be suited to. I would be happy to visit your site (Finger Lakes Region only) and to discuss soil test results and recommendations, etc.

NIAGARA DEMAND IS A BRIGHT SPOT IN GRAPE JUICE INDUSTRY

Barry Shaffer

White grape juice (utilizing Niagara juice in most cases) sales are growing. White grape juice sales are growing faster than Concord based products. Many of the new products on the market are white grape juice blends. National Grape and Cliffstar are looking for additional Niagaras. U.S. Niagara tonnage is growing yearly:

Niagara tonnage is still less than 10% of Concord tonnage. Growers often ask me if Niagara juice products are a fad. I don't think so because:

- National Grape has been looking for additional Niagara tonnage for at least 14 years! Fads fade usually after 2-3 years.
- New products utilizing Niagara juice as previously mentioned. There will be some winners among these new products.
- There hasn't been a huge amount of new Niagara plantings to swamp the market. In fact, processors needed the increased tonnage of the past few years to introduce these new products.
- Many planting sites aren't suited for profitable Niagara production. Any vineyard (American varieties) planted today should have a 7 tons per acre or better average potential.

Growers looking to position themselves for the future, should consider Niagara production on suitable sites. Remember we want to grow products that consumers want, not what is easiest for us to grow!

CALENDAR OF EVENTS

May 21. PESt MANAGEMENT FIELD DAY. Lance Fullagar Vineyards, Old Bath Road, Penn Yan, NY. Topics include: Current Situation on Insects and Diseases, Personal Protective Equipment and the Worker Protection Standard, Sprayer Calibration, Updates on New Materials and Label Changes from Suppliers, Importance of Spray Water pH, and more. Credits will be given for Pesticide Applicator Recertification. Preregistration Required. Sponsored by the Finger Lakes Grape Program, with additional sponsorship from: AgChem Service, Bayer, DowElanco, ELF Atochem, Rohm & Haas, Rhone Poulenc. Free to all those who are enrolled in the Finger Lakes Grape Program, including those who are employed by farms that are enrolled; $10 per person charge if not enrolled. To register, call Katie at (315) 536-5134 on Monday through Friday between 8:30 am and 4:30 pm.

July 16 - 20. 4TH INTERNATIONAL SYMPOSIUM ON COOL CLIMATE VITICULTURE AND ENOLOGY. Rochester, NY. Contact: Cool Climate Symposium, Dept. of Food Science & Technology, NYSAES, Geneva, NY 14456-0462. Fax: (315) 787-2284 or e-mail at: wdel@cornell.edu.

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