

# FINGER LAKES VINEYARD NOTES

Newsletter No. 6

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## Cornell Cooperative Extension

### FINGER LAKES GRAPE PROGRAM

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## GRAPE DISASTER ASSESSMENT MEETING JUNE 9TH AT LOGAN RIDGE

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Jim Bedient, New York Wine Grape Growers  
Association  
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***[Ed. Note: It's no secret that many wineries and vineyards have seen the worst winter injury in over 20 years in the Finger Lakes. Several vineyards will be facing a 'no crop' situation, some will be faced with replanting costs, and some wineries will find themselves with a sharply reduced supply of grapes to replenish wine inventories in the coming 2 years. While local USDA Farm Services Agencies have been informed about losses, it is up to growers to decide how to respond to this weather-related challenge. The following notice applies to any grower or winery facing losses this year, including hybrid growers as well as *V. vinifera****

***growers. While the meeting is co-sponsored by the NY Farm Bureau and NYS Wine Grape Growers, you don't need to be a member of either organization to attend. – TEMJ***

Please set aside **Wednesday June 9, 2004** for a meeting of the Finger Lakes Grape Industry to discuss and determine what assistance, if any, needs to be sought for damage to grapes in the Finger Lakes. We will be meeting at **Logan Ridge Estate Winery** located on Ball Diamond Road, just east of Route 414, in Hector. The meeting will begin at **5:30 PM** and should last less than 1 ½ hours.

Please come prepared to speak about damage estimates to your vineyards as well as your ideas on what disaster assistance, if any, Farm Bureau and the Wine Grape Growers Assn. should seek. Your input is vital to our organization's plans to assist growers in the future. We will also be inviting state and federal officials to listen to you. For more information please contact Mark James, New York Farm Bureau, at 315-568-2658. We look forward to seeing you on the 9<sup>th</sup>.

## MANAGEMENT OF GRAPE INSECT AND MITE PESTS-2004

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Last year was the first annual publication of what I referred to as my Minimum Opus reviewing grape entomology for the 2003 field season. Here is the 2004 edition. The article is meant to be somewhat of a companion to the review that Wayne Wilcox provides each spring on grape pathology (which Wayne sometimes refers to as his Magnum Opus). Below I first provide an update on insecticide and miticide news and then go on to review the major

arthropod pests of grapes, providing a brief summary of their biology and the damage they cause and then a discussion of control options. The material I present here is based on the work of many people at Cornell and elsewhere. I would like to especially acknowledge the contributions of Rick Dunst and Ted Taft and the rest of the crew at the Vineyard Lab at Fredonia, Tim Weigle of the NY IPM Program, Tim Martinson, Alice Wise, and Dan Gilrein from Cornell Cooperative Extension, Steve Hesler (my research support specialist here at Geneva), and Jan Nyrop (entomology faculty at Geneva).

#### **INSECTICIDE AND MITICIDE NEWS**

There have been a few changes in insecticide and miticide availability in the last year that you should be aware of. First, the organophosphate insecticide Guthion (azinphosmethyl) produced by Bayer is no longer labeled for grapes. We tend not to use this material in New York for grapes, so I doubt the loss will have a large impact on the industry. One other restriction to mention is the loss of the 2ee exemption for use of Provado on Multicolored Asian Lady Beetle MALB. You may recall that the adult MALB, when disturbed, produces a chemical defense that causes off-odors and flavors if it gets into the grape juice. We can run into problems when the beetles move into vineyards in the fall and inadvertently get harvested with the grapes. Last year we obtained 2ee label expansions for several products for use against MALB, including Provado, Sevin, and Danitol. Since then, though, the company that makes Provado (Bayer) has decided to no longer support the exemption. Provado was a nice option since it has zero days to harvest compared to 7 days for Sevin and 21 days for Danitol. Bayer has been contacted about reconsidering their decision.

On the addition side of the insecticide equation, I just learned that the neonicotinoid Assail (from Cerexagri) has been approved for use on grapes in New York (it already was available in most other states). This product is very effective against sucking insects like leafhoppers and leaf form of phylloxera but will not provide much control of Grape Berry Moth. I have not actually seen the DEC announcement but based on a conversation with a company representative, there will not be any restrictions on the use of Assail on Long

Island. Last year I noted that a new miticide had been labeled for grapes in New York, Acramite [bifenazate]. Acramite only has two-spotted spider mite on the grape label (a minor mite pest for grapes in our area) but not European red mite (a significant grape pest, especially on Long Island and in the Finger Lakes). However, a FIFRA 2(ee) exemption has been approved to add red mite to the Acramite label. Acramite is available for use on Long Island and efficacy trials conducted by Dan Gilrein and Alice Wise indicate it is effective against red mite on grapes. Note that the label recommends use of an organosilicone adjuvant such as Silwet L-77, Sylgard 309, or Kinetic with Acramite. Also, if necessary, a buffering adjuvant should be added to reduce the pH to a neutral/acidic range.

With the loss or restricted use of some of our older materials, are there alternatives coming along in the registration process? The answer is a qualified yes, although when is always a big question. The insect growth regulator Intrepid [methoxyfenozide] has not yet received approval for use in New York on grapes (although it looks like it will get approval for apples this year). It already has a federal label for grapes and is under review by DEC. Intrepid is a selective insecticide, disrupting development of lepidopteran (moths and butterflies) larvae. Efficacy trials in Michigan and New York indicate it is effective against grape berry moth. There are several companies testing neonicotinoid insecticides for use in grapes. Provado [imidacloprid] is an example of this class of insecticide that is already labeled for grapes in New York. Neonicotinoids are particularly effective against sucking insects like leafhoppers although specific products vary in spectrum of insects affected. Currently Provado is fairly expensive to use relative to some of the broad-spectrum alternatives (Sevin and Danitol [fenprothrin]) but perhaps costs will come down when additional neonicotinoids become registered. Finally, Dupont Company is still exploring the possibility of labeling their new product, Avaunt [indoxacarb], for grapes. Avaunt is in a new chemical class of insecticide and shows fairly broad-spectrum activity against sucking insects and lepidoptera. It is fairly easy on beneficials, however. In our trials Avaunt has provided good control of grape leafhopper and grape berry moth.

#### **Review of key arthropod pests**

There are over 20 insect and mite pests that attack grapes in New York, although many of these are rarely abundant enough to be of economic concern. In this review I will focus on the key grape pests that have a moderate to large pest potential. I will briefly go over basic biology and symptoms of damage and then discuss some of the control options available. More details can be found in the New York and Pennsylvania Pest Management Guidelines for Grapes: 2004 now available in print from your Regional Grape Program or on line [<http://lenewa.netsync.net/public/Guidelines%202003/Home.htm>]. I will present these pests in the order they tend to show up in the vineyard during the season (budbreak, pre bloom, post bloom, and mid-season). As a caveat before proceeding, note that an important distinction exists between control of diseases and arthropods. Because of the small size of plant pathogens and their capacity to increase rapidly under suitable growing conditions, you often need to make chemical control decisions well before obvious symptoms are visible. Related to this, most of the fungicides act to protect foliage or fruit before infection rather than eradicate the disease. Arthropods, on the other hand, are generally detectable in the field before they cause economic injury and insecticides and miticides mostly work as eradicants. Hence, for arthropods its possible, and generally advisable, to monitor pest densities and only apply control measures when economically justified.

Very low temperatures during the winter caused considerable damage to grapes in the Finger Lakes and Lake Erie region, especially for vinifera cultivars, but also a number of hybrids as well. These low temperatures probably did not harm the arthropods much since they evolved in our area and have adaptations for dealing with extreme cold. So how will winter injury influence management of arthropods? Obviously, if there is no crop, then you don't need to worry about direct pests that feed on clusters such as grape berry moth and plant bugs. On the other hand, small but harvestable crops potentially could result in concentration of damage on clusters. As for indirect pests that feed on foliage (like leafhoppers and mites) if you have no crop and good canopy development then the vines can probably withstand some extra damage. However, you need a healthy canopy to help recover from the harsh winter and prepare the vine for next season. The upshot is don't put your sprayers away even if you have no crop.

## **Bud Swell to Bloom**

*Steely Beetle (grape flea beetle).* These shiny black beetles overwinter as adults and become active as temperatures increase in the spring. They feed on swollen buds prior to budbreak with the potential of causing considerable damage under the right conditions. Thus, by the time you get this article, your vines will be past the vulnerable stage and you don't need to worry about steely beetle. Note that after budbreak, the adults do not cause additional injury. Later in the season the beetles lay eggs that hatch into larvae that do feed on grape leaves but this damage is not economically important. There are several effective, broad-spectrum, insecticides labeled for steely beetle in grapes including Sevin, Imidan, and Danitol.

*Banded Grape Bug and Lygocoris Bug.* As growers have reduced insecticides over the past 15 years we have observed more of these plant bugs in vineyards. Both species overwinter as eggs in grape canes, emerging as nymphs shortly after budbreak to 5 inch shoot growth. The banded grape bug (BGB) nymph is greenish to brown in color with black and white banded antennae. Nymphs of *Lygocoris* are pale green with thin antennae and about half the size of BGB. Nymphs of both species can cause economic damage by feeding on young clusters (buds, pedicel and rachis) prior to flowering. Adults, which appear close to bloom, do not cause economic damage and for at least one of the species, become predaceous. There is only one generation per season. Monitor for nymphs during the 5 to 10 inch shoot stage by examining clusters on approximately 100 shoots along the edge and interior of vineyard blocks. These plant bugs are sporadic from year to year and from vineyard to vineyard; most vineyards will not require treatment. But if present at sufficient numbers (1 nymph per 10 shoots), they can cause significant yield reductions and hence it is worth the time to check. Pay particular attention to vineyard edges. There are several broad-spectrum insecticides labeled for use against plant bugs (Sevin, Imidan, Danitol). All three compounds are equally effective although Imidan and Sevin are somewhat less disruptive of predatory mites.

*Grape Plume Moth.* This is another potential pest of grapes that overwinters as eggs in canes and emerges shortly after budbreak. Larvae typically web together young leaves or shoot tips and leaves to form a protective chamber from which they

feed. Sometimes the grape cluster gets caught up in the webbing and gets fed on and this is where the potential for damage occurs. New research indicates 1) that damage tends to be concentrated on the vineyard edge near woods and 2) that it takes quite a few plume moth larvae to cause economic damage. For Niagara grapes we were unable to detect a statistical effect on vines with 20% infested shoots compared to control vines where plume moth was killed with an insecticide. Nevertheless, the trend was for reduced yield associated with high plume moth infestations (>20%). For higher value cultivars a somewhat lower threshold would be appropriate. Treatment of plume moth can be tricky for several reasons. First, the larvae develop very quickly and often have reached the pupal stage before you even recognize there is a problem. Second, larvae inside their leaf shelters are protected from insecticides. For these reasons, it's important to monitor and treat for plume moth early in the season (before 10 inch shoot stage) using sufficient water to achieve good coverage. Sevin, Danitol, and Dipel (*Bacillus thuringiensis* or Bt) are labeled for use against grape plume moth.

*Grape Cane Borer.* In the fall the adults of this beetle bore tunnels into 1 and 2 year old canes to create a place to spend the winter. Although this damage doesn't generally kill canes, they may be weakened and break during the growing season. Note however that we do not fully understand its economic impact. It may be rather insignificant except at high densities. In many cases damaged canes can be removed at pruning, although this adds time to the process. The larva of this beetle develops in dead wood and does not cause economic damage. However, since larvae grow into adults it makes sense to try and limit reproduction. One study in Italy found that by thoroughly removing and destroying pruned wood from the vineyard they reduced adult populations and damage. We have written about cane borer recently so I won't go into details here. Note that we are quickly passing the appropriate time to treat for adults. Egg laying has already started. We have a trial going on this year to see if sprays at budbreak and 7 days after will help reduce adult populations in the fall. We are also trying to determine if fall activity of adults is synchronized enough to make it possible to treat them. Hopefully we will have some additional insights into management of cane borer by next spring. One cultural practice worth doing this year, though, is

to destroy burn piles before the middle of July to kill any larvae that may be present. As for pesticides, Imidan is labeled for grape cane borer.

### **Bloom to Mid-season**

*Grape Berry Moth.* Grape berry moth is familiar to most grape growers in New York. It is considered our most important arthropod pest in Lake Erie and the Finger Lakes and much of our current IPM strategy centers around its control. Grape Berry Moth is less of a problem on Long Island. Grape berry moth (GBM) overwinters as a pupa in the leaf litter, emerging as adults in May and June to initiate the first generation of larvae that feed directly on young fruit clusters of wild and cultivated grapes. Depending on temperature, there can be one to three additional generations produced during the season. The larvae cause damage in three ways. First, they can reduce yield. How? By directly feeding on the flower clusters, hollowing out the grape berry by feeding and causing premature berry drop due to feeding. Second, they contaminate the juice that can lead to rejection of entire loads at the processors. This is a particularly serious problem for native grapes grown for sweet juice. Third, their feeding activity can help initiate the development of bunch rots. This is particularly a serious problem for wine grapes.

GBM has been effectively managed over the past 15 years, while at the same time reducing overall pesticide use, through 1) the recognition that vineyards vary in risk to GBM, 2) the use of a reliable monitoring plan, and 3) judicious use of broad-spectrum insecticides. More recently, however, we have observed increasing amounts of GBM damage at harvest, especially in the Lake Erie area, indicating emerging problems with our current management scheme. Four factors seem to be involved: loss of some broad-spectrum insecticides through government regulation (PennCap-M), beginnings of insecticide resistance (Sevin), warmer than average winters and summers allowing increased berry moth populations (though not in 2003), and poor spray coverage on fruit, especially for more selective materials such as Dipel or insect growth regulators (Confirm) that only affect Lepidoptera and require ingestion of the material through feeding to be effective. As a consequence of some of these factors, we are in the process of reevaluating our GBM management program. In the meantime, here are

some things to keep in mind. First, it still makes sense to manage vineyard blocks based on risk assessment. High Risk vineyard blocks (vineyards with at least one side bordered by woods, prone to heavy snow accumulation, history of GBM, and/or contain premium wine or table grapes) should be treated with insecticides shortly after bloom (first generation larvae) and in late July (second generation). They should be scouted for GBM damage in late August to see if a third insecticide application is required. Note that much of the recent problems with GBM have come from late-season egg-laying. Too often growers put their sprayers away after early August and do not check for GBM. Pay attention to email crop updates for alerts on GBM (and other pests). For Low Risk vineyard blocks (lack of woods, low amounts of snow, little history of GBM problems) you can probably safely ignore GBM for the first generation but remember to scout in late July and it may even make sense to scout in late August as well. For vineyard blocks that fall in between high and low risk (Intermediate Risk) we recommend an insecticide treatment for first generation (immediate post bloom) and scout for GBM at the end of July and end of August. The current thresholds are 6% cluster damage for late-July and 15% at the end of August. Note, though, that these thresholds are best suited for native grapes grown for sweet juice. Thresholds for vinifera probably may be less due to the additional risk of bunch rot associated with GBM feeding injury.

There are several options available for chemical control of GBM. The most commonly used product is Sevin, although Danitol and Imidan are also effective broad-spectrum materials. Note, though, that Imidan is not quite as effective against leafhoppers as the other two. There has been some evidence of control failures with Sevin in the Lake Erie area due to resistance. Although such problems have not been documented in the Finger Lakes or Long Island, it is something to pay attention to and rotation among pesticides is usually a good idea. More and more growers are turning to Danitol for control of several different arthropod pests, including spider mites. Danitol is a good material but I have concerns about its overuse leading to spider mite problems. Right now spider mites are killed by Danitol, although over reliance could lead to resistance. Both Sevin and Imidan are easier on predatory mites than Danitol.

There are some additional, more narrow-spectrum, materials registered for use against GBM. Dipel is one option that has been around for a number of years. The toxin produced by the *Bacillus thuringiensis* bacteria is specific to Lepidoptera. In our trials it has been less effective than the broad-spectrum insecticides but has the advantage that it conserves predators and parasitoids in the system. We have found that 2 applications of Dipel per GBM generation (immediate post bloom and mid-July), improves efficacy. Use sufficient water to achieve good coverage of fruit since the larvae must consume the Dipel as they enter the berry for it to be effective. Good coverage is an issue for all the GBM materials. Mating disruption, using large releases of the GBM sex pheromone, is another control option to consider. The idea is to prevent mating by artificially releasing so much sex pheromone that males have difficulty locating the female moths. This technique has been around for a number of years and is being used by a small percentage of growers. It is probably most effective for intermediate and low risk vineyards or in years where berry moth densities are low. However, these are the areas that often times do not require an insecticide application for GBM every year. There are two ways to apply the synthetic pheromone: plastic twist ties (Pacific Biocontrol Isomate) or sprayable microcapsules. Twist ties continually release pheromone for about 60 days, hence may need to be applied twice during the season. Note though that a longer lasting twist tie, called Isomate GBM+, is being marketed. Apparently it has a federal label and is available for use in Pennsylvania. Right now it is not available for NY but should be by next year. Andy Muza and Tim Weigle are conducting a demonstration trial with this new product this season. We hope to expand the trial next year to include more sites so that we can make a more informed recommendation. The current formulation of microencapsulated sprayable pheromone (made by 3M company) stays active for about 2 weeks (they are working on extending this time) so needs to be applied twice per generation. Finally, as mentioned under pesticide news, the insect growth regulator Intrepid from Dow Corporation has a EPA label for use on grapes and is available in Pennsylvania. It has not received DEC approval for New York and we don't expect it to happen this field season. Intrepid is a selective material active against the larvae and eggs of many species of Lepidoptera including GBM. We are still learning how to best use this

new material but it seems it needs to be applied a bit earlier than other insecticides (bloom instead of immediate post bloom, for example).

*Grape Leafhoppers.* There is actually a suite of leafhoppers that feed on grapes. The Eastern grape leafhopper *Erythroneura comes* (pale white in summer) mainly feeds on native cultivars like Concord while several additional species feed on *V. vinifera* and hybrids including *E. bistrata/vitifex*, *E. vitis*, *E. vulnerata*, and *E. tricincta*. All these *Erythroneura* leafhoppers have similar life-cycles. They overwinter as adults and become active as temperatures warm up in the spring. They move on to grapes after budbreak, mate and begin laying eggs around bloom. There is one full generation during the summer and a partial second. In warm years there is a potential for a nearly full second generation of nymphs and adults. Both nymphs and adults cause similar damage; removal of leaf cell contents using sucking mouthparts. Hence, moderate densities can reduce photosynthesis, ripening and yields. Severity of damage is increased in dry years, assuming irrigation is not available.

Sampling for leafhoppers corresponds to sampling for grape berry moth. At the immediate post bloom period sucker shoots should be examined for evidence of stippling (white dots on leaves caused by leafhopper feeding). If you see stippling throughout the vineyard block an insecticide treatment is recommended. Note that for vineyards at high or intermediate risk of GBM damage, you would probably already be applying an insecticide at this time. If you use a broad-spectrum material such as Sevin or Danitol you will also control leafhoppers. Thus, sampling for leafhoppers at immediate post bloom is only necessary for low risk vineyards. The next sampling period for leafhoppers is mid to late July and focuses on abundance of first generation nymphs. Monitoring for leafhoppers is only necessary for low and intermediate risk vineyards, assuming a broad-spectrum material is used to control GBM in high risk vineyards. At this time check leaves at the basal part of shoots (leaves 3 through 7) for leafhopper nymphs or damage, on multiple shoots and multiple vines located in the exterior and interior of the vineyard. Use a threshold of 5 nymphs per leaf or 10% of leaves with at least moderate stippling to determine need for treatment. The third time for sampling for leafhoppers should occur in late August. This focuses on nymphs of

the second generation. Follow a similar sampling protocol as used at the end of July, using a threshold of 10 nymphs per leaf. Note if you have made previous applications of insecticides for leafhopper or GBM it is very unlikely that it will be necessary to treat for leafhoppers in late August. If you do not observe much stippling it is not necessary to more carefully sample for leafhopper nymphs.

There are several choices of pesticides to use against leafhoppers. The carbamate Sevin has been a standard for many years and is still effective except in isolated pockets of Concord and other native grapes around the Finger Lakes where we have observed control failures suggesting emergence of resistance. There are several effective alternatives to Sevin including Danitol, Lannate [methomyl], and Provado [imidacloprid]. Lannate is in the same chemical class as Sevin so there is potential for cross-resistance. Both Lannate and Danitol are hard on predatory mites. The neonicotinoid Provado is mainly effective against sucking insects like leafhoppers and not as hard on natural enemies as the broad-spectrum insecticides. Note that a half label rate of Provado (0.5 oz.) was as effective as the full rate in controlling leafhoppers in our trials. As mentioned earlier, Assail [acetamiprid] is another neonicotinoid that has recently been labeled for use on grapes in NY and is also very effective against leafhoppers. Perhaps with this added competition, the price for these products will come down.

*Potato Leafhopper.* The potato leafhopper is quite distinct from grape leafhoppers discussed above. One big difference is that potato leafhopper originates each year from the southeastern US (it can not successfully overwinter in upstate NY) while grape leafhoppers are indigenous to our area. The overwintered, winged adults ride north on warm fronts and usually arrive in our area sometime after bloom. When and where they arrive is not very predictable and some years are worse than others. They tend to arrive on Long Island before the Finger Lakes or Lake Erie region, sometimes prior to bloom. Vineyards adjacent to alfalfa sometimes get an infestation of potato leafhopper right after the alfalfa is mowed. The adult potato leafhopper is iridescent green and wedge-shaped while the nymph is usually green and moves sideways in a unique manner when disturbed. Instead of feeding on cell contents of leaves like grape leafhoppers, potato leafhopper

adults and nymphs uses their sucking mouthparts to tap into the phloem vessels (the tubes used by plants to transport products of photosynthesis) of a number of different species of plants including grapes. In the process of feeding, they introduce saliva into the plant that causes, to varying degrees, distorted leaf and shoot development. Some cultivars of *Vinifera* grapes seem particularly sensitive as does the French-American hybrid Cayuga White, but *Labrusca* cultivars also show symptoms. Feeding symptoms in grapes include leaves with yellow margins (more reddish for red *Vinifera* grapes) that cup downward. Often these symptoms are noticed before the leafhoppers themselves.

Potato leafhopper is a sporadic pest, although it can be serious in some places and some years. Long Island seems particularly hard hit. We currently do not have good estimates for an economic threshold. We do know that shoots will recover from feeding damage once the leafhoppers are removed. Several insecticides are registered for its control in grapes including Sevin, Danitol, Lannate, Assail and Provado. Potato leafhopper is fairly mobile and it may require several treatments over the season as new infestation occur.

*European Red Mite.* There are actually two species of spider mites that attack grapes, two-spotted spider mite and European red mite (ERM), but ERM presents the more serious threat. Problems with ERM on grapes in New York have historically been concentrated on Long Island where the longer season and dryer climate are more conducive to population growth. However, in the last 5 to 10 years we have been observing more problems with ERM in the Finger Lakes. ERM overwinters as eggs on one-year and older wood. Around budbreak eggs hatch and larval mites move to young leaves. The immature and adult mites feed on cell contents causing stippling of leaves and when abundant, leaf bronzing. The eggs of ERM are red to brown red in color; the immatures and adults are pale brown to red. ERM are very small in size (a fraction of an inch) and best observed with a 10 to 15X hand lens. Under the right conditions (hot and dry, lack of natural enemies), they can reach high populations and cause serious injury to grapes. Cultivars of *V. vinifera* and French-American hybrids appear most susceptible but native varieties can also develop large populations. With rare exception, ERM typically does not become a problem until mid-

summer when conditions are most favorable for population growth and shoot growth has slowed down. Look for immature and adult mites on the top and bottom of leaves in the middle of shoots. The current economic threshold is about 7-10 mites per leaf, or 50% of the leaves infested.

Spider mites are often thought of as a secondary pest. In other words, something must happen in the vineyard that disrupts their natural control by predators, particularly predatory mites, before their populations can increase to damaging levels. Pesticides, that differentially harm predators but not spider mites, are the most typical cause of disruption and this seems to be the case for grapes in New York. We and other researchers have been looking at this issue for several years now. Some tentative conclusions can be made. The use of certain fungicides, particularly mancozeb products, suppresses predatory mites. Repeated use of a mancozeb product may promote outbreaks of ERM. In some situations, however, predatory mite populations are sufficient and/or conditions for ERM population growth are insufficient, such that outbreaks do not occur even with repeated use of a mancozeb product. Jan Nyrop and Wayne Wilcox have recently shown that one early-season application of Dithane had little effect on a well established population of predatory mites. Several insecticides used in grapes, including Lannate and Danitol, can also suppress predatory mites. Danitol is also a miticide so at present its use does not create an ERM problem. However, in the past, spider mites have been quick to develop resistance to frequent use of pyrethroids like Danitol. This may or may not happen with Danitol but it is worth keeping in mind. One of the first things to watch out for is initial good suppression of mites followed by a resurgence indicating the spider mites recovered more quickly than the predatory mites. Overall, paying attention to conserving predatory mites can pay economic dividends since miticides are quite expensive.

We now have several chemical options available for mite control in New York: Kelthane [dicofol], Vendex [fenbutatin-oxide], Agri-Mek [abamectin], Nexter [pyridaben] (previously called and sold as Pyramite), Acramite, JMS Stylet Oil [aliphatic petroleum distillate], and Danitol. Note that Nexter is not allowed on Long Island. Kelthane and Vendex are the old standards that have been relied upon for a number of years. Kelthane is fairly hard on predatory mites while Vendex is not.

My experience with Vendex is that it takes a bit longer to have an impact than Kelthane. Trials conducted by Tim Martinson a few years ago demonstrated that 3 early-season applications of JMS Stylet Oil, being used primarily for control of grape powdery mildew, also reduced ERM populations by about 50%. JMS Stylet Oil is relatively benign to predatory mites. Read the label carefully since JMS Stylet Oil is not compatible with a number of other products including Captan, Vendex, and sulfur. Also, although Stylet Oil can help with ERM problems, it is not likely to provide complete control in problem vineyards. Nexter has been registered for use on grapes in New York (but not on Long Island) for a couple of years. It is very effective against ERM but higher rates may be necessary for two-spotted spider mites. Nexter is pretty soft on predatory mites except at high rates. It also provides some partial control of leafhoppers. Agri-mek currently has two-spotted spider mite on the label but not ERM. The Agri-Mek label recommends the use of a nonionic surfactant to improve wetting. Acramite, as indicated earlier, has recently received DEC approval for use in New York, including Long Island. A 2(ee) label change has been granted to include ERM. Acramite and Agri-Mek are relatively soft on beneficial arthropods. Note the different miticides vary in their re-entry interval and days to harvest requirements. It is good news that we now have several miticides to choose from for control of ERM in grapes. It's a good idea to rotate materials to help reduce pressure for resistance.

*Multicolored Asian Lady Beetle (MALB).* I already mentioned this insect at the beginning of the article. Briefly, it was introduced into the US from Asia to help control aphid pests. It has spread to many areas in the southern and eastern US and into Ontario Canada and has generally been an effective biological control agent. However, it has the habit of moving into vineyards in the fall near harvest time. When disturbed, the adult MALB releases a defensive chemical out of its joints that helps it ward off enemies. Unfortunately, the defensive chemical has a nasty taste and bad odor that gets carried into the juice and wine. Relatively low densities of MALB (10 per grape lug) can cause off-flavors in juice and wine. MALB is sporadic both in where it shows up during a given year and from year to year. Vineyards in the Niagara Peninsula in Canada appear particularly vulnerable. Also, vineyards adjacent to soybeans

in a year when soybean aphid is abundant may be more vulnerable. I recommend that you scout your vineyards before harvest to see if MALB is present. There could be several different species of ladybugs in your vineyard but probably only MALB would be at high densities on the clusters. You can recognize MALB by the black markings directly behind the head that look like an M or W depending on which direction you look from. The color or number of spots is variable. I would also pay attention to the crop updates to see if and when MALB is turning up in vineyards. If you do end up with a problem, there are a few chemical approaches you can try. Note that we have yet developed a good estimate of the economic threshold for MALB nor field-tested potential chemical control options. There are three pesticides labeled for MALB: Sevin [carbaryl], Danitol [fenfropathrin], and Aza-Direct. To use Sevin and Danitol in New York for this purpose, you need to have the 2(ee) label or a copy of the 2004 NY and PA pest management guidelines. Sevin and Danitol are toxic to MALB based on laboratory trials conducted by Roger Williams at Ohio State University. Aza-Direct, which is based on the active ingredient azadiractin from the neem tree, appears to have a repellent effect on MALB, again based on laboratory trials by Roger. Note that Danitol has a 21 days to harvest restriction, Sevin has a 7 days to harvest restriction, and Aza-Direct has no days to harvest restrictions. For Aza-Direct, pH in spray water should be 7 or less (optimum is 5.5 to 6.5).

### **Some Final Comments**

There are a large number of potential arthropod pests of grapes and it is possible to get overwhelmed with information on biology, symptoms, control options, etc. Here are a few points to keep in mind to help simplify things.

Although there are a large number of potential pests, there are relatively few that consistently represent a major threat (grape berry moth, leafhoppers, mites, and a few others). And of those that can cause significant injury, they may not become a pest at a particular site or a particular year. Generally speaking, with arthropod pests you have time to make management decisions based on what is present in the vineyard rather than before it develops. There is a distinct time of the season when particular pests may turn up in your vineyard. In other words, you can focus your

scouting on a limited number of pests at a given vine phenology. Look for steely beetles and climbing cutworm at budswell; plant bugs and plume moths when shoots are between 5 and 10 inches; grape rootworm, rose chaffer around bloom; grape berry moth, leafhoppers, leaf phylloxera, Japanese beetle, and spider mites after bloom to late August. Don't put your sprayer away too early in the season. Watch out for late-season damage from grape berry moth. Read extension pest alerts available through the Finger Lakes and Lake Erie regional grape programs. If you don't have access to email, see if you can get someone who does to make copies for you. To sign up for either of the electronic newsletters, Tim Martinson's Finger Lakes Vineyard Update or The Lake Erie Regional Grape Program The Crop Update, please contact either program directly. Although the FQPA review process is starting to limit the use of some materials, for the most part, we have good chemical control options available. But be smart about using them. Pay attention to label restrictions and review recommendations in the pest management guidelines. Be aware of the potential for grape berry moth and grape leafhopper resistance to Sevin. Rotate among materials to reduce development of resistance. Be aware of consequences for natural enemies. The cheapest material to apply on a per acre basis may not always result in the lowest cost because of unintended consequences. Most important, only use pesticides or other control options when it makes economic sense to do so (economic threshold: the cost of control is roughly the same or less than costs of damage).

## **QUINTEC RECEIVES NEW YORK SPECIAL NEEDS REGISTRATION FOR POWDERY MILDEW**

*Wayne Wilcox  
Dept Plant Pathology  
NYSAES – Cornell University  
Geneva, NY*

Good news. The NYS DEC has approved a "Special Local Needs" (SLN) Section 24 (c) registration that allows the use of the new powdery mildew fungicide, Quintec, on grapes. This product received federal registration earlier in the year, but too late for the normal DEC review process to be completed in time for use during the current growing season. After consultation with

the grape industry and Cornell personnel, the registrant (Dow AgroScience) successfully petitioned the DEC for this SLN registration, which will allow use of the product in a manner that should be fully adequate for our needs in New York but entails some significant restrictions of the broader uses allowed on the federal label. These are:

- Grapes only (the federal label allows other selected crops)
- Maximum of 3 applications of 3 to 4 fluid ounces of product per acre (the federal label allows more applications at a wider rate range)
- A vegetative buffer strip of at least 25 feet is required between areas to which Quintec is applied and to which surface water features (such as ponds, streams, and springs) exist in order to reduce the potential for contamination of water from rainfall runoff.

All product sold in NYS will have a sticker affixed to it, saying that this SLN registration supercedes the use directions on the container (i.e., the federal label), and that a copy of the SLN label must be in the user's possession. Chemical distributors will have access to the SLN label and should provide it at the time of purchase.

A quick review: Quintec is strictly a protectant fungicide; it has absolutely no post-infection or eradicator activities. It also has absolutely no activity against other diseases; it is strictly a powdery mildew fungicide. In our trials over the last several years, it has consistently provided very good to excellent control of PM on Chardonnay, Concord, and Rosette (susceptible hybrid) grapes when applied at 2-week intervals. We have typically used the 3 fl oz rate on Concord and Rosette, but in a trial last year on Chardonnay, we got better control with the 4 fl oz/A rate than the 3 fl oz rate. In fact, the program in which we used three applications at 4 fl oz/A (immediate pre-bloom, 2 wk later, and midsummer) in rotation with a sterol inhibitor and sulfur was the best out of 27 different treatments in this strobilurin-resistant Chardonnay vineyard.

Where strobilurin resistance is an issue or a significant concern, Quintec should now be viewed as the "big gun" for PM control and fit into that slot in a rotational program, if it is to be used. This

means somewhere near the start of bloom (preferably just a little before) and 2 weeks later, to maximize control of cluster infections. A third application, if desired, could be fit in somewhere mid-summer in order to provide additional "ammunition" against foliar infections. Wine grape growers whose buyers are shy about sulfur at or after veraison might consider this option, which should provide significant forward protection towards harvest. Note that there is a risk for the PM fungus to develop resistance to Quintec, so the maximum of three applications per year is a good resistance-management strategy.

Concord growers should consider Quintec a strong rotational option in their programs for PM control. Because it does not control other diseases, it will need to be tank-mixed with mancozeb prebloom or used midsummer after black rot and Phomopsis control are no longer needed (Abound or Sovran in the first postbloom spray should still pick up everything before switching to the midsummer program). At a retail cost of approximately \$4/fl oz, the 3 fl oz/A rate is significantly more expensive than the prebloom rate of Rubigan but equivalent to the midsummer Rubigan rate.

Note that this SLN expires on December 31, 2004. It is hoped that the federal label will be approved in NYS in time for the 2005 growing season.

## **NYS DEC SPONSORS 'MOCK INSPECTION' PROGRAM JUNE 22**

*Timothy E. Martinson*

**Ed Hanbach** of the New York Department of Environmental Conservation Office in Bath has offered to host a 'mock inspection' to educate growers on how to comply with worker protection standard (WPS) requirements. This meeting will take place from 3 to 5 PM on June 22 at Anthony Road Vineyards, located on Rte 14, between Dresden and Geneva.

WPS standards apply to any agricultural business that has employees working in crops to which pesticides have been applied in the past 30 days. Among its requirements are:

- **Central Posting Area**, where information about pesticide applications, safety information and re-entry intervals are posted

- **Worker training** – workers are required to complete a brief period of training and receive a green card stating they have completed WPS training. Standards are different for general workers and 'pesticide handlers' who are involved in mixing, loading, or application under the supervision of a certified applicator. (*Note: We have both training videotapes and 'flip charts' in English and Spanish available for loan at our office in Penn Yan – TEM*)
- **Decontamination supplies** – there must be an 'ample supply of water, soap, and towels for routine washing and emergency decontamination'.

Compliance with these standards is not difficult or costly, but they are legal standards that every grower with employees needs to be aware of. This meeting will involve rotating through 5 stations staffed by DEC specialists. Pesticide Recertification credits will be offered to attendees. Please call our office at **315-536-5134** to sign up. The meeting is free and open to all.

## **TRACGRAPE PESTICIDE RECORDING SOFTWARE NOW AVAILABLE**

*Juliet Carroll  
NYS IPM Program  
Cornell University*

*[Ed. Note: Copies of this software on CD-ROM are being sent to all Canandaigua growers. Others can obtain a free copy by contacting Juliet at the address or e-mail below – TEM]*

**What is TracGrape?** TracGrape is an easy to use software program to record yearly spray history that automatically generates required processor spray reporting forms. The program is being offered to grape growers at no charge.

TracGrape was developed to simplify the spray reporting system from growers to processors. From a master spray data worksheet, TracGrape generates all the spray reporting forms for Canandaigua Wine, Carriage House, Cliffstar, Growers' Cooperative, Meier's Wine Cellars, Mogen David, and a generic form.

## UPCOMING EVENTS

**How does TracGrape work?** Those familiar with Microsoft Excel, a popular spreadsheet program, will find it easy to use TracGrape, since it is written in Excel. Very simply, the user “fills in the blanks” on data “worksheets”, much like a sheet of paper. From the data entered on these worksheets, the program is able to complete the required processor forms automatically.

**Are there other benefits to using TracGrape?** We think so! TracGrape has “drop down” lists for pesticides and pests that you can select from. This saves time and prevents typing errors. When you select a pesticide Trade Name from the list, the program automatically fills in the EPA registration number, REI, PHI, and earliest harvestable date on the form. Plus, an EPA Worker Protection Standard Central Posting form is created! The software also has Farm and Harvest Data sheets that automatically generate drop-down lists specific to your farm operation.

**What hardware and software do I need to run TracGrape?**

- Windows 98 or above, or Mac OS 9 or above
- Microsoft Excel spreadsheet program
- CD ROM Drive
- Printer – to print the completed forms

**How can I get a CD of TracGrape?** Send your name and mailing address along with your request for TracGrape to **Juliet Carroll**, Fruit IPM Coordinator:

- *Write:*

NYS Integrated Pest Management Program  
Cornell University, NYS Agric Expt Station  
630 West North Street  
Geneva, NY 14456-0462

- *Phone, Fax, or E-mail:*

*PH:* (315) 787-2430

*Fax:* (315) 787-2360

*E-mail:* [jec3@cornell.edu](mailto:jec3@cornell.edu)

### **June 9. Grape Disaster Assessment Meeting.**

A meeting of the Finger Lakes Grape Industry to discuss and determine what assistance, if any, needs to be sought for damage to grapes in the Finger Lakes. We will be meeting at Logan Ridge Estate Winery located on Ball Diamond Road, just east of Route 414, in Hector. The meeting will begin at 5:30 PM and should last less than 1 ½ hours.

Please come prepared to speak about damage estimates to your vineyards as well as your ideas on what disaster assistance, if any, Farm Bureau and the Wine Grape Growers Assn. should seek. Your input is vital to our organization's plans to assist growers in the future. We will also be inviting state and federal officials to listen to you. For more information please contact Mark James, New York Farm Bureau, at 315-568-2658.

### **June 12. Summer Field Day. 8:00 - 4:30**

Maryland Grape Growers Association, Golden Run Vineyard, 437 Schmidt Farm Lane, Sudlersville, MD 21668 From Planting to Picking: An overview of new vineyard management practices to ensure fruit quality for producing premier wine grapes.

For more information call Hans and Jennie Schmidt at 410-438-3679 (H), 410-490-2509 (cell).

### **June 22. NYS DEC Sponsors ‘Mock Inspection’.**

Ed Hanbach of the New York Department of Environmental Conservation office in Bath has offered to host a ‘mock inspection’ to educate growers on how to comply with worker protection standard (WPS) requirements. This meeting will take place from 3 to 5 PM at Anthony Road Vineyards, located on Rte 14, between Dresden and Geneva. WPS standards apply to any agricultural business that has employees working in crops to which pesticides have been applied in the past 30 days. Among its requirements are: Central Posting Area, Worker training, and Decontamination supplies. This meeting will involve rotating through 5 stations staffed by DEC specialists. Pesticide Recertification credits will be offered to attendees. Please call our office at 315-536-5134 to sign up. The meeting is free and open to all.

**July 13. ASEV-Eastern Section Meeting Preconference** tour. The tour will include southwestern Virginia wineries. See and discuss local adaptations to the environment.

**July 14-16. ASEV-Eastern Section Annual Technical Meeting and Symposium.** Roanoke, Virginia. The annual American Society of Enology and Viticulture Eastern Section meeting will convene at the Hotel Roanoke and Conference Center ([www.hotelroanoke.com](http://www.hotelroanoke.com)) to start with a 1.5 day seminar entitled Grapes, Wine and Environment (July 14-16). The underlying goal of the symposium is to explore how soils, climate (particularly temperature), and cultural practices affect fruit and wine composition and quality, especially in a warm, humid environment. Additionally, current research on vine nitrogen nutrition, including wine issues, and on canopy and crop management practices approach for less-than-ideal wine growing climates will be presented. For more information: <http://www.nysaes.cornell.edu/fst/asev/>

**July 27-29. 2004 Eastern Pinot Noir Conference,** Arnot Forest, Newfield, NY. The event will kick off on Tuesday evening July 27 with arrival and a barbecue at the Arnot Forest, catered by Seneca Savory/ Red Newt Winery. Wednesday will be devoted to critical tasting. Dinner will be served at the beautiful Sheldrake Point Vineyards Café on the west side of Cayuga Lake. Tasting will continue on Thursday morning, with the conference adjourning at noon. The registration fee includes all meals and lodging. Registration is \$275 for tasters, \$175 for Non-tasters, and \$75 for children.





Finger Lakes Grape Program  
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