FINGER LAKES VINEYARD NOTES

Newsletter #4
April 10, 1998

Written by Tim Martinson, Area Grape Extension Educator, Finger Lakes Grape Program (315) 536-5134 and Tim Weigle, Area Extension Grape Pest Management Specialist for the Finger Lakes and Lake Erie Grape Programs (716) 672-6830. Edited by Tim Martinson

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CURRENT SITUATION

Timothy E. Martinson

The mild winter weather has allowed us once again to largely escape winter bud injury. However, the unseasonably warm weather during the last week in March has led to early bud swell, with associated loss of cold-hardiness. I normally do not start tracking degree day accumulations until April 1. However, at this time we have accumulated around 90 growing degree-days (the sum of average daily temperatures above a threshold of 50° F), and are well into early bud swell in most sites - which could advance bud burst by as much as 3 weeks. While extremely cold temperatures (low 20's) would probably result in injury, experience in Washington state suggests that 'Concord' buds should still be resistant down to about 25-27° F until the first leaves start separating from the buds. Practically, there is little that can be done at this point to prevent frost injury should extreme temperatures occur, beyond keeping vegetation in row middles closely cropped to maintain good air drainage. For those of you out tying grapes, keep in mind that you need to take extra care to avoid breaking off buds as you tie the vines.

In light of the early development that has occurred, I will be starting grape code-a-phone messages next week. These will be updated on an as-needed basis early on, and twice weekly as the season moves into high gear. This season we will have a dedicated phone line for grape code-a-phone messages, that will be available 24 hours a day. (Previously the message was recorded on an answering machine, and only available after business hours). The new number is:

New Grape Code-A-Phone Number
315-536-5549

NOTES ON BORON APPLICATIONS

Timothy E. Martinson

Many growers will be soon applying boron to area vineyards, through soil applications or foliar application, or both. Boron is an essential element important in flower formation and fruit set that is often deficient in Finger Lakes soils. Recent articles in *Vineyard Notes* (Newsletter '96 #11 and Newsletter '97 #5) have reviewed aspects of boron nutrition. The purpose of this note is to clear up a few practical points I have received questions about.

Soil Application. Spring soil applications of Solubor often are tank mixed and applied with preemergence herbicides prior to budbreak. The rate normally used is 5 lb/acre of Solubor, which corresponds to 1 lb/acre actual boron (Solubor contains 20% boron). The confusion comes from the fact that herbicide rates are calculated on an *'acre sprayed' basis,* while boron rates should be calculated on a *total acreage covered* basis. The simplest example would be for a vineyard with 9' spacing between rows and a 36 inch spray band under the trellis. The herbicide rate would be calculated based on the area covered by the herbicide band: 36" equals 3 ft., so 'acres sprayed' would be 3 ft band width/ 9 ft row width = 1/3 of the total acreage covered with the sprayer. In other words, if the sprayer covers 3 acres per spray tank and the herbicide rate is 2 lb/acre, the 'acres sprayed' with herbicide would be 1 acre, and 2 lb of the herbicide should be added to the spray tank. However, with a 5 lb/acre rate of Solubor, 3 acres of vineyard are being covered, so 5 lb/acre x 3 = 15 lb Solubor should be applied to the same tank.

Foliar Application. Foliar applications of solubor are often necessary to supplement soil-applied boron. Boron applied to foliage is absorbed directly into the tissue, but does not move from the tissues to which it is applied. For this reason, it is often applied more than once. The rate applied can be critical, because boron has a relatively narrow range between deficiency and excess, which can cause foliar burn. Boron recommendations made through our petiole analysis program were changed last year. The 'old' recommendations were to apply 2.5 lb/acre Solubor (0.5 lb/acre actual Boron) at prebloom and 14 days later. Experience from trials conducted last year suggests that modification in both timing and rate applied may be in order:

- **Timing.** In a timing trial last summer near Fredonia, the largest effects on fruit set were seen with the first application at 8 - 12" shoot growth and the second application before bloom. These two applications correspond roughly with the early prebloom and immediate prebloom fungicide sprays.

- **Rate.** I received reports from a number of growers who observed foliar burn following a 2.5 lb/acre Solubor spray. Others I have talked to report no problems with the 2.5 lb rate. In some cases, growers who experienced problems were those who used both soil and foliar applications, or less than 14 days between the two applications. Results from trials conducted at Fredonia in 1997, suggested that 1 lb/acre may provide most of the benefits of foliar application, while reducing the risk of foliar burn. If you experienced foliar burn following application of 2.5 lb/acre of Solubor, you may want to try reducing the rate to 1.0 lb/acre Solubor.

I am setting up a trial this year to compare the effects of various combinations of soil and foliar boron applications (including rates) on yield and the appearance of foliar burn symptoms in a 'low boron' vineyard. I hope this trial will help resolve some of the nuts and bolts questions about timing and rates that I have outlined in this article.

Spray Compatibility. Finally, I just want to remind everyone that, while Solubor can be tank-mixed with many materials, it is incompatible with some of the water-soluble

packets used with some fungicides and insecticides.

SPIDER MITES AND SPRAY OILS

Timothy E. Martinson

Spider mites (European red mite, *Panonychus ulmi*) are becoming more of a consistent problem in Finger Lakes vineyards. This tiny pest is barely visible to the naked eye (to those under 40) and small even with magnification (for those over 40), but has a short life cycle, and is capable of explosive population growth. Typically growers who have this pest for the first time notice it when 'bronzing' (brownish appearance of leaves caused by feeding) becomes visible from the pickup truck or tractor in midsummer or later. By then it is too late for anything but a rescue application of a miticide. In case any of you haven't noticed, the selection of miticides is limited, to put it mildly. The two choices available are Kelthane® and Vendex®. We recommend application of a miticide only when mites reach a critical threshold of 7 to 10 mites per leaf or 50% of leaves with *at least 1 mite*. Mites typically build up in midseason, and don't make an appearance in many vineyards largely because of a predatory mite that is generally present named *Typhlodromus pyri*. Predatory mites, when present, can provide very good control of European red mite (which I will abbreviate as ERM for the rest of this article), if something doesn't come along to knock them out of the picture. One theory about why ERM problems are becoming more frequent is that EBDC fungicides such as mancozeb are toxic to *T. pyri.* Dr. Greg English-Loeb and Jan Nyrop from the Entomology department at Geneva are currently conducting studies to determine whether this is the case.

Another option used by apple growers for the last 40 years, but not commonly used in grapes is dormant spray oil, sometimes in combination with 'summer oils', such as JMS Stylet Oil®. This option is starting to look more attractive, particularly for vineyards that ended up the previous year with high mite numbers (in grapes, this may mean that the leaves were really 'toasted'). The reason dormant spray oils work in tree fruit is that ERM (the same mite is present in both apples and grapes) overwinters in the egg stage. These winter eggs can be found on dormant canes adjacent to buds, and also on second-year wood and presumably on trunks as well. Dormant oil is effective on apples, in part because most of the eggs are relatively exposed. The oil application works by penetrating eggs and 'smothering' them. It becomes more effective the closer the eggs are to hatching.

In grapes, the jury is still out on how effective dormant oils are in controlling winter ERM eggs. Previous trials have shown mixed results - in part because the mites failed to show up in the 'untreated checks'. Another potential reason for the mixed results may be that it is more difficult to get coverage of eggs on grapes because of where the overwintering eggs are. For example, if many eggs were deposited under loose bark or deep in crevices on vine trunks, it may be harder to get good coverage than it is on apples, where eggs are more exposed.

In cooperation with area growers, the Finger Lakes Grape Program will be conducting a trial of dormant oil and early-season stylet oil for controlling ERM this growing season at a site that should have a good population of winter eggs. The advantages of an early-season program such as this would be that 1) it may eliminate the need for a costly miticide application later in the season, 2) dormant oils are easy on predatory mites, and 3) it may be the least expensive program for locations with heavy winter populations of mites.

If you are interested in trying out dormant oil on a portion of your acreage this year, it is a registered treatment in New York, and therefore legal to do so. I can't guarantee results, but suggest the following guidelines:

- Sunspray 6E is the material used for dormant applications.
- Application should be made when apples are in the 'tight cluster' stage. If you are an apple

grower, you know what this means. If you're not, it means the last week in April (in average years), probably towards the end of next week (this year).

- Rates are 2% (2 gallons per 100 gal of water) early in the season; 1% (1 gal. / 100 gal. of water) later on. Mite eggs become more susceptible the closer they are to hatching.
- Dormant oil can safely be applied through late bud-swell.
- Coverage is important - 50 gal/acre should be a minimum; 100 gal/acre is better.
- For this spray, it is preferable (if not necessary) to avoid alternate row spraying. Spray every row.
- Consider doing so only if you know you had heavy mite populations at the end of last year's growing season.
- Spray oils are not compatible with sulfur or Captan.
- Spray oils require constant agitation.

Stylet Oil. As many of you are aware, JMS Stylet Oil® is an approved and effective material for control of powdery mildew, commonly applied in a 1% spray solution (1 gal / 100 gal spray). In a trial in Ontario last year, ERM populations were also suppressed by a program that included 2 -3 summer applications of stylet oil. While I wouldn't use stylet oil as the first option for controlling European red mite, it may be an additional benefit of using stylet oil for powdery mildew control.

NEW PUBLICATIONS

Timothy E. Martinson

I would like to draw your attention to three new publications that came out in late 1997 and are currently available through our office (315) 536-5134.

Vineyard Establishment I : Preplant Decisions, T. Zabadal and J. Andreson, Michigan State University Extension Bulletin E-2644, December 1997. ($4.00 through our office)

Vineyard Establishment II: Planting and Early Care of Vineyards, T. Zabadal , Michigan State University Extension Bulletin E-2645, December 1997. ($6.00 through our office)

These two bulletins provide a comprehensive, detailed, and practical description of vineyard establishment. The first deals with site selection, vineyard design, site preparation, and varietal selection. Some of the information is specific to Michigan, but much is applicable to the Finger Lakes as well. The second bulletin provides detailed instructions on preplant preparation, planting vines, and year-by-year management for years 1 through 3.

Banded Grape Bug, T. Martinson and G. English-Loeb, Grape Insect Identification Sheet #19, Cornell Cooperative Extension. ($2.00)

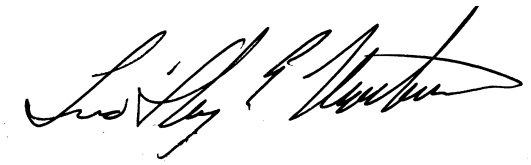
This publication, (by yours truly and Greg English-Loeb), provides photographs and description of Banded Grape Bug, an early-season cluster-feeding insect. It details work we did that identified crop losses of up to 2 tons/acre on 'Concord' grapes in Western NY.

UPCOMING EVENTS

May 21. *Spring Pest Management Field Meeting and Pesticide Updates.* 2:45 - 6:00. Lance Fullager Vineyard Supplies, Co. Rd. 17, Penn Yan. The meeting will include updates in Insect, Weed, and Disease management, an update on regulatory issues by the DEC, industry updates and label changes, and sprayer calibration. Equipment (including sprayers and a grape harvester) will be on display. A barbeque will be held immediately after the program. *Pesticide Recertification Credits will be offered.* Full announcement to appear in the next *Vineyard Notes.* Pre-registration is required.

July 22-24. *Eastern Section American Society of Enology and Viticulture (ASEV) Meeting,* Crowne Plaza hotel, Grand Rapids, Michigan. This program has two major sections. *Issues in*

Sparkling Wine Production: An Internatnional Symposium (22-23 July) will include talks on enology and viticulture aspects of sparkling wine and tasting of commercial and research wines. The *Technical Program* (23-24 July) will focus on research presentations in enology and viticulture, a trade show, and a regional wine showcase. Contact Ellen Harkness, 745-494-6704 (phone), 765-494-7953 (fax), or harkness@foodsci.purdue.edu (email) for registration information.



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Phone Numbers
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