It is Time to Remind Everyone of Sulfur Dust Stewardship

Sulfur dust is the backbone of Lodi's powdery mildew management program. Now that the season is in full swing a lot of sulfur dust is being applied. I have become aware that some of the sulfur stewardship principles promoted in our region have not been adhered to in some instances. For example, during a recent early morning period of temperature inversion a sulfur dusting in a vineyard next to a county road created a dust cloud that slowly drifted across the road creating a hazard for passing vehicles. In other cases sulfur dusting was done in such strong winds that it was clear the application would not provide effective coverage to control mildew. To preserve the use of sulfur in Lodi vineyards for the long term it is absolutely critical that all growers and equipment operators adhere to the sulfur stewardship principles. I am sure none of us want to see the Lodi wine industry featured on the evening news because a school bus was dusted with sulfur.

Some of the more important sulfur dust stewardship are:

- Stop dusting activities if sulfur will drift into sensitive areas
- Avoid applications when people are active in areas bordering a treated vineyard
- If dusting equipment allows, disengage blower when making row turns
- When possible sulfur dust at night or on weekends
- Sulfur dust should not be applied when wind velocity exceeds 10 miles per hour
- Avoid dusting during dead calm conditions in the presence of an inversion layer; in these situations apply sulfur dust where there is a minimum air movement of 2 miles per hour
- Leave adequate buffer zones to protect sensitive areas
- Cover sulfur stewardship with all applicator employees

Copies of the principles of sulfur dust stewardship are available in English and Spanish from Cliff or Chris at LWWC's office.

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JUNE 2005

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RESEARCH·IPM NEWSLETTER

Managing Spider Mites in Lodi Vineyards

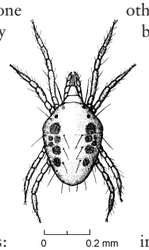
BY CLIFF OHMART
LWWC Research/IPM Director

It is that time of year again, time to worry about mites. I will be the first one to admit that I find dealing with mites in Lodi vineyards a difficult issue. I have two main reasons: 1) It is very difficult to accurately estimate their level of infestation because their distribution in the vineyard is often patchy; and 2) There is not a whole lot of data to go on regarding treatment thresholds and impacts that mite damage have on winegrape yield and quality. Furthermore, it seems that Pacific mite is becoming more common in the Lodi region and this species behaves much differently than Willamette mite so being able to tell them apart is very important in dealing with them successfully.

The following discussion is a great illustration of what comes from a lack of data on mites in winegrape vineyards. I recently participated in an on-line discussion with several California pest control advisors about whether Willamette mite is a pest or not. It began with a pest management consultant from the San Joaquin Valley reporting that he never recommends a treatment for Willamette mite unless a client insists. He stated that although in some vineyards Willamette mite feeding can make the vines look pretty ragged, he never sees any affect on the fruit. He then asked what other consultants do about Willamette mite-infested vineyards. He got several responses from around California. Some said they do not view the mite as a problem while others said in certain situations it can adversely affect winegrape quality if not treated. Some believe that in the cooler grape-growing regions of California's North Coast in vineyards with poor soils and/or where deficit irrigation is pushing the vines to the limit in terms of crop to canopy ratio, a significant Willamette mite population (maybe 60% infestation or greater) can significantly delay harvest and/or significantly lower the Brix level at harvest. They believe the mites add to these other stressful factors and actually push the vineyard over the edge and quality suffers. Some of the people responding from the warmer growing regions reported that about the only time they see Willamette mites become a problem is when they occur in vineyards at very high numbers early in the season. In the Lodi region, it is clear from monitoring 70 vineyards over the last 8 years for the BIFS program that the level of Willamette mite infestation that is considered unacceptable by growers and consultants can vary considerably. Part of this is explained by things such as different varieties, different irrigation strategies, or differing canopy management styles. However, it is also clear that some growers and consultants have more tolerance for Willamette mite damage that others do.

So what can we do in Lodi to improve our mite management? Do more quantitative monitoring, keep written records of this monitoring, identify the mite species you have in your vineyards, make and record observations on how mite levels affect yield and quality, and take advantage of the experience of your PCA (if you work with one), your farm advisor (Paul Verdegaal) and other growers by talking with them about their views on mite management and getting their help in identifying the kind of mites you have in your vineyard.

Quantitative Monitoring: Without measuring mite levels in some quantitative way you have no way to relate their numbers to their effects on vine yield and quality. As seasons go by, good quantitative monitoring records, coupled with measurements of yield and quality will allow you to refine your mite treatment thresholds. Probably the simplest way to measure mite levels is using what is known as 'presence/absence'. Take a given number of leaves off several vines in one part of the vineyard, ten is an easy number to deal with, and count the number of leaves with mites on them. Divide this number by the total number of leaves and this gives you a percentage of leaves with mites on them. Write this down! The Lodi Winegrowers Workbook has more detailed suggestions for mite monitoring.



Identify the Mite Species: Willamette mites and Pacific mites are difficult to tell apart. The UC Grape Pest Management Manual may be of help here. An even better way may be to have your PCA show you the difference between them. It is important to tell them apart because during hot weather Pacific mite populations can increase much more rapidly than Willamette mite populations so you have less time to react to them and it is easier to get into trouble. Moreover, a really bad Pacific mite infestation can burn leaves to a crisp whereas Willamette mites just make them look tired.

Record How Mite Levels Affect Yield and Quality: It is not very likely that detailed research by University scientists will be done any time soon on affects of mites on winegrape yield and quality. Therefore the only way we will improve our mite management in Lodi is for growers to learn from their own on-farm experience with them. To do this effectively means not only keeping records of mite levels but also yield and quality so you can make correlations between mite numbers and yield and quality and adjust your mite management accordingly.

Take Advantage of Experience of PCAs, Paul Verdegaal, and Other Growers: PCAs and your farm advisor, Paul Verdegaal, see many vineyards farmed in many different ways in the presence and absence of mites. They are in the best position to help you deal with the many unknowns of mite management. Moreover, PCAs have extensive experience with the several new miticides have come on the market the last few years, such as Nexter, Fugimite, Acrimite, and Agrimek. Each material has strengths and weaknesses that you should know about. Talking with other growers may be extremely valuable because they see things from your perspective and yet are dealing with different vineyards than yours.

Lodi growers and PCAs are fortunate because the region is famous for the information that gets shared within the winegrape community. The only way I see us making strides in improving our mite management is to continue sharing information on this important topic.

Calculating Herbicide Rates Can Be Tricky

A LODI PCA RECENTLY BROUGHT TO MY ATTENTION THAT THERE HAS BEEN CONFUSION OVER RATES OF HERBICIDE APPLICATION IN SOME LODI VINEYARDS. THIS IS A GREAT OPPORTUNITY TO REMIND EVERYONE ABOUT HOW EASY IT IS TO BE CONFUSED AND HOW TO AVOID IT. I WILL USE AN EXAMPLE OF SPRAYING 1 PINT OF GLYPHOSATE PER ACRE FOR AN UNDER THE VINE WEED SPRAY IN A 21 ACRE VINEYARD WHERE THE UNDER THE VINE WEED-FREE STRIP OCCUPIES ONE THIRD OF THE TOTAL VINEYARD ACRES (33%). THE TOTAL AMOUNT OF GLYPHOSATE NEEDED FOR THIS JOB IS 7 PINTS NOT 21 PINTS. THAT IS BECAUSE ONLY A TOTAL OF 7 ACRES, A THIRD OF THE VINEYARD, IS GETTING SPRAYED. IN SOME INSTANCES THE PER ACRE RATE IS MISTAKENLY MULTIPLIED BY THE TOTAL VINEYARD ACRES, RATHER THAN THE ACRES OF THE WEED-FREE STRIP, TO CALCULATE HOW MUCH MATERIAL IS NEEDED AND THIS IS THEN APPLIED UNDER THE VINE. THE RESULT IS THAT THE ACTUAL AMOUNT OF MATERIAL APPLIED TO THE STRIP IS THREE TIMES WHAT IT SHOULD BE. THE WAY TO AVOID THE CONFUSION IS ALWAYS CALCULATE HOW MUCH HERBICIDE TO PUT INTO THE TANK BASED ON SPRAYED ACRES, NOT TOTAL VINEYARD ACRES.

GROWER PROFILE: *Robert Abercrombie*

VICE PRESIDENT, VINEYARD OPERATIONS
Trinchero Family Estates/Sutter Home Winery

YEARS IN INDUSTRY: 27

ACRES FARMED: 2400

ACRES SUPERVISED: 3200

VARIETIES:
Cabernet Sauvignon, Chardonnay, Chenin blanc, Gewürztraminer, Merlot, Pinot grigio, Pinot noir, Sauvignon blanc, Syrah, and Zinfandel.

Although Robert Abercrombie was born in Visalia, CA, he wasn't born into a farming family like many of the rest of us. His father was a businessman while his mother busily raised the family. Consequently, it wasn't until Robert was about 14 years old that he had his first experience with farming. A close family friend had an orange and walnut orchard where Robert was hired for the summer. He fondly remembers driving up and down the orchard rows spot spraying for weeds high atop a Farmall tractor. About the time that Robert was turning 15 years old, he and his family moved to Stockton where he attended Stagg High School, graduating in 1973.

Several years later, after graduating from high school, Robert began working for a businessman in Stockton. In 1978, the businessman bought some property in Lockeford and asked if Robert would be interested in working at the ranch. Robert remembered how he loved being out in the country and working on those old orange and walnut orchards and realized that that was exactly the career path he wanted to pursue. So, when his boss asked him if he wanted to work on the Lockeford ranch, he jumped on the opportunity. Robert spent the next 11 years helping run the day to day business of the ranch which grew walnuts, cherries, grapes, sweet corn and bell peppers.

In 1989, Robert was hired by Sutter Home Winery as their vineyard manager for their Delta ranch where they intended to plant 526 acres of Chardonnay, Cabernet Sauvignon and Merlot in 1990. Sutter Home continued to purchase land and plant winegrapes through the rest of the 1990's with the Clements Ranch in 1995, the Sutter Road ranch in 1996, the Circle K ranch and the Westside Ranch in 1998 for a total of nearly 2,400 acres of winegrapes in the Lodi and Delta regions all of which are under Roberts's responsibility. He equates farming this huge amount of acreage to playing a chess game where you strategize your next move to be efficient and economic but never at the expense of quality.

Robert's career with Sutter Home Winery has been an amazing learning experience and as a result, his farming style is continually evolving. Robert states that he "initially began farming using conventional farming methods like disking everything and relying on chemicals to cure all our ills." But, in the early 1990's, Sutter Home Winery's vineyard team became intrigued with the organic movement, and so they set out to farm their vineyards organically. The experience was challenging but incredibly educational and Robert now firmly believes that soil fertility is one of the most important factors "in creating a healthier environment for the vine to thwart off pests and fungal problems."

To this end, he began planting mixed cover crops of oats, barley, peas and bell beans in every other row on all of his acreage. Robert states that "establishing an ecosystem in the vineyard by planting different cover crops seemed logical because the plants act as insectaries which host beneficial insects and help control the pest insects." Robert goes on to say how he likes the fact that "cover crops also provide organic matter and improve the soil tilth." The biggest problem he had with organic farming is weed control under the vines because on a large scale farming operation, it is difficult to stay on top of weed development when there are so many other things to worry about.

While trying out organic winegrape production, Sutter Home Vineyards decided to make their own compost and continues to do so today. Robert uses the grape pomace produced at the Sutter Home Winery from the grapes picked at his vineyards. The process starts with nearly 10,000 tons of raw grape pomace laid out in 20 or so 1000 foot windrows that, once well composted, result in about 6,000 tons. From this he bands on about 2 tons per acre, a process that has cut down on his fertilizer costs and reduced the amount of off-farm inputs.

Sutter Home still farms a block organically at Montevina Winery in Amador County, but Robert thinks that organic farming has its shortfalls, specifically around weed control. Robert believes that mechanical tillage under the vines took too much time and equipment and caused too much vine damage to be sustainable. Therefore, he is very excited about the new Lodi Rules for Sustainable Winegrowing Program because, as he says, it takes "into account so many different aspects of farming" that it becomes a "total farming system." Robert goes on to say that it "takes the Lodi Winegrower's Workbook and the Code of Sustainable Winegrowing Practices to the next level, through certification." Robert has attended all of the orientation workshops and is prepared to enroll 20 acres into the program during this first pilot year and if all goes well, he'll increase the acreage.

While attending one of the Lodi Rules workshops Robert heard someone say that they wanted to leave the land they farm better than when they received it. Robert took this to heart and looking at his current farming style, he is accomplishing this goal today.

IN THE VINEYARD

BY PAUL S. VERDEGAAL
University of California
Cooperative Extension Farm Advisor

The 2005 season has become a challenge to plan around the frequent rainstorms. After two years of below average soil moisture at bud break, there should be an abundance of available water this year to provide good deep soil moisture. Budbreak this year began even earlier than last year (the earliest in memory), but cool temperatures and regular storms have slowed the stage of vine growth to a few days ahead of the normal mid May date for budbreak. Currently total rainfall is more than 23 inches for the season, depending on location in the county. April temperatures have been below average and the accumulated degree days for the month is about 244, which is slightly below the average of 264 DD for the 23 year period since 1982.

What that may mean is there will be some elbowroom for starting deficit irrigation programs until things dry out a little more and warmer weather sets in for the season. As important as reduced deficit irrigation is for quality, it's still important not to overdo the vine stress on young vines, own rooted vines with nematodes, poor soils or on certain varieties such as Chardonnay and Merlot, maybe even Syrah. Last year there were some mid-season and late summer problems during periods of high temperatures.

In general the very cool and wet April weather seemed to help keep powdery mildew at bay, while at the same time, frequent breaks of dry periods minimized Phomopsis Cane and Leaf Blight and Botrytis shoot blight to scattered incidents of minor problems. The recent thunderstorms did cause some severe damage in areas of the northeast county and into Sacramento County. As the spring rains diminish and normal temperatures return, vigilance should increase in monitoring for powdery mildew. Keep protection intervals reasonable or short and early season sulfur may be a good choice for resistance management and economics.

The general sense seems to be that demand and two light crops may help prices continue to improve. The Lodi District should be in a good position to be a part of a strengthening market. The season is young, but the cluster numbers look reasonable across most varieties and sites. Hopefully, Mother Nature will be accommodating.

There are still state budget problems that seem to elude solution, the War on Terror rolls on and viticultural threats of Glassy Winged Sharp Shooter (GWSS) and Vine Mealy Bug (VMB) provide plenty of concern, but the economy and wine sales seem to improve. There are full color informational posters available of both pests and it's important to identify any infestations that may occur. There have been several meetings introducing the pests (especially VMB), their potential for increased costs and the significant losses they could cause. As a grower or PCA you need to be on the lookout. Just as importantly, your tractor drivers, field crews or irrigators also need to be aware of VMB and GWSS.

One of the big current questions is less a pest related one, but still is of environmental concern. There seems to be problems of inconsistency and arbitrariness in the implementation of the Conditional Ag Waiver program. Many questions are still unanswered as University of California Cooperative Extension (UCCE), Water Coalitions and growers statewide work on providing data, information and interpretation of initial results towards the regulatory efforts. If you haven't been able to attend one of the regional or state meetings, talk to a neighbor who has, or give a call to your local Coalition. It's important you stay informed of the changing rules and to be aware of proposed fee increases for the near future that may affect vineyard budget decisions.

Economic pressures of production and the possibility of contracts being offered again have provided incentives to redo the Lodi Cost Study of 2001. It should be available in four to six weeks as the final draft is now being reviewed. Almost needless to say costs have gone up rapidly, while returns have stagnated or at most slowly begun to bounce back as we exit the recent down cycle. Of the more typical concerns of springtime production there is always plenty to think about and so it's time to consider:

Avoid early and excessive irrigation, but watch out for hot spells as spring turns to summer. In most vineyards there is little to no irrigation needed before late May or early June, especially this year. Deep soil moisture should be better this year; compared to the last two and that may provide a little margin for error, but still requires close attention.

Bloom time is traditionally and generally a good time to assess vine nutrition, especially with reliance on drip systems. Grape vines don't seem to need as much applied nutrients as most other commodities. From budbreak until bloom time shoots are relying almost entirely on stored reserves for nutrients, other than a minor contribution from photosynthesis of the new leaves. Potassium and zinc deficiencies (boron in more recent years) have been a problem, but too much nitrogen has been more of a problem. A nitrogen program of 20 to 30 pounds actual nitrogen (N) per acre will maintain most high producing vineyards on a long-term basis. In most other situations, you may find 5 to 15 pounds of actual N per acre is enough depending on rootstock, site and well water nitrogen levels. It's possible to save some money and put it towards other nutrients, such as potassium (K) or to vineyard operations. Nitrogen is a very elusive thing to measure compared to other nutrients, but run a petiole analysis (leaf blades are no better and usually worse). Then talk it over with your PCA.

Crop load and canopy management are difficult subjects to discuss with the need to cover increased costs of production, but may be required to meet the winery demands for higher quality in the current competitive environment. There still is a lot of discussion as to what is more important, leaf removal or shoot thinning. If you can only do one, shoot thinning may win out in most vineyards, unless there is extreme vigor or a history of bunch rot.

A topic that will need some in depth discussion in the very near future is "failure" of steel stakes in vineyard trellis systems. It seems more of a problem in recent years and appears in a variety of sites and situations. Some recent inquiries and Internet surfing indicates to me we are seeing a real problem, but it is a complicated interaction of many factors. It does seem to be literally a rapid corrosion or loss of metal by a galvanic current, just like the old high school experiment of creating a battery of two electrodes in a lemon. This weak but steady electrical current between two metals, in this case the steel stakes and zinc coated trellis wire (electrodes), situated in certain soil conditions (chemical solution). What exactly is going on and how to mitigate or prevent the problem is open for some debate. At times it may seem the more we learn the less we know about a lot of things. If you have some questions or input let me know, as I think we may be discussing the topic more in the future.

The overall good news is the Lodi district's quality and value is more evident than ever and becoming better known. Good luck in 2005.

MARK YOUR CALENDAR: JUNE 7, 2005 * 9:00AM – NOON

Pump efficiency measurements, cost sharing programs, and drip irrigation system performance and maintenance. Presented by Center for Irrigation Technology Fresno State University, and the University of California. Sponsored by LWWC and the California Sustainable Winegrowing Alliance Program. Registration 8:30am – 9:00am. Lunch provided.