



Common Sense Pesticide Application

BY CLIFF OHMART Sustainable Winegrowing Director, Lodi Winegrape Commission

By the time you read this column your Powdery mildew management program will be well underway. Associated with mildew control is a very sensitive topic, unintended sulfur dust drift. I understand why it is a sensitive topic but it is important to address it nevertheless.

From a financial and environmental perspective, we are lucky that sulfur dust remains the backbone of the region's management for Powdery mildew. It is effective, relatively cheap, easy to apply, and relatively non-toxic to fish and wildlife. However, it does have its downsides. Being a dust it is very visible as it is being applied and as long as it remains suspended in the air. It also is a skin and eye irritant. There are ways to avoid these problems and most are common sense. Nevertheless, each year I still come across a sulfur dust cloud drifting over the road on which I am driving. This is not a common occurrence but all it takes is one incident to cast a bad light on the sustainable farming practices that Lodi growers have become known for throughout the world.

It is timely to remind ourselves of the importance of communicating with everyone on the farm involved in sulfur dusting or spraying and have them review the list of common sense ways to reduce the likelihood of unintended spray or dust drift. I will also take this opportunity to announce the launching in July of the Spray Safe program in San Joaquin County which will help us all with this very important issue.

First a list of some of the ways to avoid unintended spray or dust drift:

- Do not spray or dust when the wind velocity exceeds 10 mph
- Be aware of temperature inversion in 'dead calm' situations; applying dust when there is a minimum movement of 2 mph will help ensure that an inversion does not exist
- Avoid applications where people are active in areas bordering vineyards – dusting a night is an alternative, or if possible start dusting next to roads first, early in the morning, when traffic is at a minimum
- Leave an adequate buffer zone to protect sensitive areas
- Considering using wettable sulfur in vineyards near particularly sensitive areas

- If equipment allows, disengage blower when making row turns
- Be sure all employees involved in dusting or spraying are aware of all of the above points

Spray Safe was started by a broad coalition of Kern County farmers, farm organizations, pest control advisors, applicators and labor contractors to address the issue of the safe application of pesticides. There are plenty of regulations that have been put into place over time to avoid problems associated with pesticide application but regulations do not always solve the problem. Spray Safe is designed to go beyond simply following the existing rules and regulations. Growers are in the fields every day watching and looking for potential problems and challenges that arise and they play a significant role in making sure that they and everyone involved in their farming operations think carefully and act appropriately before and during pesticide applications. Farmers participating in the Spray Safe program are committed to being vigilant in making sure their neighbors are also taking every precaution to avoid mistakes and accidents. When a grower sees something in the field that could be potentially dangerous, they will take action to correct it by notifying the farmer, ranch manager or labor supervisor to do whatever is necessary to avoid the problem before it occurs. It is a program of growers helping growers.

Like every significant aspect of Lodi's sustainable winegrowing program, Spray Safe is a program developed by growers for growers, in other words a bottom up program. Enforcement agencies like the Ag Commissioner's office are very supportive of Spray Safe but are not driving it. They support it because they realize when growers come together to help themselves, good things happen.



Spray Safe program components include the following:

- An annual county-wide meeting with growers, pest control advisors, applicators and the County Ag Commissioner to review the rules and regulations governing pesticide use and to share experiences and discuss concerns.
- Regular education on improving existing practices or policies that will further enhance public safety.
- Broad dissemination of a checklist to remind farmers and applicators about precautions that must be taken when applying pesticides.
- A concerted effort to get to know neighboring farmers and to share phone numbers or contact information for owners, foremen and labor contractors who work and farm nearby.
- Distribution of Spray Safe signage and informational materials to help spread the word throughout agriculture about the need for vigilance and safety.

An important point to make is intent of the Spray Safe program is not to compete with Lodi's Farm Safety Day. Lodi Farm Safety Day is an excellent and well established program to address many important issues confronting farm workers on a day-in-day out basis, much of which is related to the safe use of pesticides. The purpose of the Spray Safe program is very much in line with the goals of the Farm Safety Day program. Moreover, the primary audience for the Spray Safe program is the farmer owner and farm manager while Farm Safety Day is more for the vineyard worker. As Spray Safe becomes established in San Joaquin County it is likely that the two programs will partner to ensure that the very important message of safe handling and using pesticides is delivered in the most effective way to all involved in the use of pesticides, the farmer, the ranch manager, the vineyard workers, applicators and pest control advisors.

A planning committee, made up of Lodi growers, vineyard consultants, and Spray Safe coordinators, has been formed to plan the initiation of the program in San Joaquin County. July 15th has been chosen as the official launching and it will be held at the San Joaquin County Ag Center. You will be notified of the details of the day later in the season.

IN THE VINEYARD

BY PAUL S. VERDEGAAL

University of California Cooperative Extension Farm Advisor

A third dry winter seems to be how the 2009 season is unfolding. Although the total rainfall is very similar for the last three years the pattern of rain is very different. The fall was dry with a relatively dry January, but a wet February and March. This is more like 2007 and the opposite of 2008 which was a very wet January and early February. Last year there was no rain after March 1. The end result this year is there is better soil moisture to start 2009, but the soil below three feet is still relatively dry. The bottom line is as long as it is cool the vines should be in good shape, but young vineyards and older sites under stress from pests or disease problems need to be irrigated if it turns very hot and remains dry towards bloom. Below is a summary of the rainfall totals and patterns for the last few years:

RAINFALL TOTALS FOR 2005-2009

	Total Inches	Oct-Dec	Jan	Feb	Mar	Apr	May
2005	24.7	10.4	3.2	3.3	3.5	1.4	1.3
2006	23.7	7.1	5.4	1.1	5.2	3.8	0.8
2007	12.1	4.6	0.27	4.3	0.6	2.3	T
2008	13.6	4.5	7.3	1.8	0.1	0	0
2009	13.1	4.0	1.9	5.3	1.9	0.3*	

* to date

Although, the cluster number is set, cluster size, flower number and flower set have yet to be determined. But the many factors and interactions that will determine what the final crop will be at each vineyard site makes measuring and predicting the 2009 harvest at this point a good guessing game.

If the weather remains fairly normal and rainfall is even just average, vine growth should be good. Late winter and early spring temperatures have been slightly above average for maximums, but slightly below average for nightly minimums. Budbreak was slightly behind normal this year, but only by a few days. Uniformity of budbreak seems to be fairly good, but there are some younger vineyards, old Zinfandel and scattered vineyards with a little variability, which might be attributed to last year's frost effect, as vines recover fully. As to budbreak, I dug around in some ancient archives (my field notes) and found some dates for Chardonnay, which starts out the season. I did correlate the first two or three years with Tokay budbreak when she was Queen. In any case a summary for the last 24 years (see table on page 3).

There doesn't appear to be any trend of earlier dates from warming, but there are a couple of cycles alternating between early and late budbreak. Maybe Global Warming/Climate Change is more attitude than actual and to paraphrase a well known quote; the only thing we have to fear is fear itself (except for the IRS in April).

Vineyards that were frosted last year should have a good crop this year, but it may take another year to recover from variable shoot and crop development last year after the vines recovered from the cold in mid April of last year. One of the discussions last year was what to do after a frost. The standard recommendation has been (at least in 1972) to do nothing. That is still a generally good strategy, but with newer varieties and practices for many sites there was a distinct benefit to do some "cleanup" shoot

AVERAGE DATE OF BUDBREAK*
LODI CHARDONNAY 1986-2009

Year	Date in March	Year	Date in March
2009	20	1997	1
2008	12	1996	15
2007	14	1995	5
2006	15	1994	14
2005	2	1993	22
2004	13	1992	13
2003	10	1991	21
2002	13	1990	23
2001	17	1989	17
2000	17	1988	13
1999	25	1987	26
1998	14	1986	9

* Budbreak = 10% of buds at 1/2 inch shoot length or first leaf unfolding

thinning; not for crop but for better shoot development and better spur choices come pruning time.

Things can change dramatically, between now and flower set, let alone by harvest, as cluster and flower development occur. Shoot growth should be ramping up, as temperatures warm, but as I write a storm front is approaching.

Among many vineyard items to do for spring, protecting new shoot growth, nutrient application and irrigation schedules need to be considered. Even though the market cycle seems to have turned back upward, fruit quality and input costs will continue to be very important factors in management decisions. Unfortunately these two goals often work against each other, especially during the last three years.

Irrigation continues to be a topic of discussion as more growers “back off” a little from severe deficits. Depending on hot spells and whether a cover crop is present, there should be adequate available water in the soil profile. Last year below normal rainfall for the second year, there were a

few more calls later in the season about vine stress as temperatures warmed up. If you are avoiding severe deficits this year, be aware of actual vine water status (pressure bombs still good for that) and don’t start irrigation too late. Until mid May, when the vine canopy is still small, evapo-transpiration (ET) is low and the soil profile is still saturated. It doesn’t take many hours of application to get too far ahead of actual vine needs. Longer “hang times” have become more common and more of a concern regarding yields, but also related to vine irrigation strategy. So irrigation has become a little more complicated again, but regulated deficit irrigation (RDI) is still one of the biggest steps, if not the first and most significant step, towards maintaining wine quality, even as good yields are needed. Be watchful about getting behind before starting irrigation, especially for young vines, vines with nematode problems and in shallow or rocky soils of low water holding capacity. There should be plenty of time yet, before you have to make some final scheduling decisions about start time, stress threshold and amount. Some rain may yet come in April and through early May, but most likely not a lot.

Last year no rain after the middle of February meant very little concern about protecting shoots from anything other than powdery mildew and even that disease pressure was not bad. That seems to be the case this year at least so far. Powdery mildew is the usual concern and although most of the major varieties are not highly susceptible, with the exceptions of Chardonnay, Merlot, and Carignane and somewhat for Petit Verdot. Wettable sulfur can be very effective, although there are several new materials for just after budbreak. Check the UC IPM guidelines and talk with your PCA or give me a call. Wettable sulfur after budbreak can be a very effective and inexpensive choice for doubling up on an early start to Phomopsis cane and leaf blight, if it should get wet again briefly. Whatever the material of choice ends up being, a good powdery mildew program includes: some sulfur, rotation of materials between years, and complete coverage.

As regard to vine nutrient demands;

hold off on any nitrogen fertilizers until after bloom, unless a slow release fertilizer is used or an organic material is being considered. Potassium can be applied any time that is convenient if you have not already done so. Micro-nutrients are effectively taken up by young leaves in the two weeks before and through bloom for some immediate benefit. Vines don’t distinguish between expensive formulations and low cost materials in effectiveness. There are some slight differences among micro-nutrient materials that might make sense for a particular operation, but cheap is still a good option. What is very important is to use dilute concentrations for best uptake and a spreader/sticker if rain is possible. Another good option is drip applied formulations for Zinc or Boron, which can be a good way to address long term needs. More specific with boron is that a very little goes a long way and can be applied in a herbicide application.

Finally, the still relatively new and unfortunate topic to consider is the presence of Vine Mealy bug (VMB), which continues to spread throughout the state and San Joaquin County. The over wintering crawlers tend to be small and not active until after budbreak, but if you find vines with heavy amounts of black sooty mold, check those vines very closely. Look in any cracks crevices and loose bark and even down into the soil on large roots. Also note if there is a high amount of ant activity fairly early. There are some good control material choices but talk with your grape buyer and with your PCA about winery restrictions. Also check www.ipm.ucdavis or www.vionemealybug.uckac. But don’t forget about the Glassy Winged Sharp Shooter (GWSS) and the Western Grape Leaf Skeletonizer (WGLS), they both are still lurking to the south and north of San Joaquin County.

There are more than a few challenges ahead and although the wine industry situation looks relatively good right now; the general economy problems are a concern. But the Lodi District and San Joaquin County are positioned to possibly take advantage of the situation, as well as the well-deserved recognition for the local wines. Good luck and Good Times in 2009.

**PARTICIPATE IN A SURVEY
ON SUSTAINABLE
WINGROWING PRACTICES**

Dr. Magali Delmas and her students at the University of California Los Angeles are carrying out a short (5-7 minute) survey designed to benchmark the motivations for sustainable winegrowing within the California wine industry. All responses are strictly confidential and the analyses of the responses will be based only on aggregated results. If you are interested in participating in this survey go to the following website: <http://www.ioe.ucla.edu/survey>

CALENDAR OF EVENTS:

May 5, 9:00am – 10:00am: Dr. Toby O’Geen, UC Davis Dept. of Land, Air and Water Resources. Exploring the soil resource online in the Lodi winegrape region. Burgundy Hall, Lodi Grape Festival Grounds, 413 E. Lockeford St.

May 14, 8:30am – 4:30pm: Variety Focus: Grapes of Iberia. UC Davis Extension. Presentations by UC Davis faculty, as well as experienced growers from California (e.g. our own Markus Bokisch), Oregon, Portugal and Spain will include information on the origins of these varieties; their role in the regional wines of the area; the challenging issue of naming conventions and synonyms for these varieties; their history in both Europe and the new world; the importance, development and selection of clones; and the role of terroir in the performance of the vines. \$210 which includes course materials, lunch and tastings. For registration visit: <http://extension.ucdavis.edu/unit/winemaking> Freeborn Hall, UC Davis Campus.

June 2 8:30am-4:30am: Grape leafroll disease symposium 2.0. UC Davis Extension. \$165 includes course material, lunch and reception. For more information and registration visit: <http://extension.ucdavis.edu/unit/winemaking/course/description/>

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