



# LODI WINEGRAPE COMMISSION

## RESEARCH • IPM news

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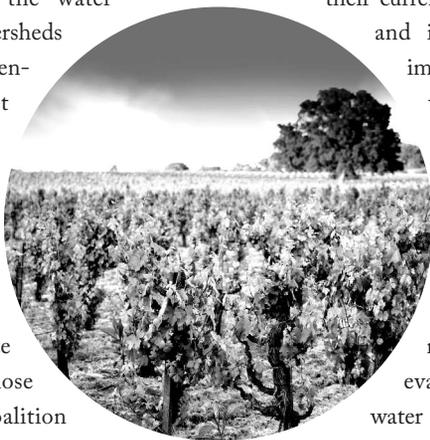
## Water Quality Update:

PAUL VERDEGAAL (UCCE), TERRY PRICHARD (UCCE) AND MELISSA TURNER (MLJ, LLC)

Growers will recall it was 2004 when the San Joaquin County and Delta Water Quality Coalition (Coalition) was formed by local growers and managed through the San Joaquin County Resource Conservation District in response to the Regional Water Quality Control Board's Irrigated Lands Program (now called the Irrigated Lands Regulatory Program). This article serves as an update to winegrape growers discussing the current program status and past activities.

### *The San Joaquin County and Delta Water Quality Coalition*

The Coalition encompasses all of San Joaquin County and portions of Contra Costa, Calaveras, and Stanislaus Counties. The Coalition includes about 500,000 acres of irrigated lands and 4,500 individual landowner/grower members. The Coalition monitors and analyzes the water quality of many sub-watersheds and facilitates the implementation of management plans when required. They provide outreach and support to growers in response to water quality exceedances at sub-watershed monitoring sites, in order to enhance the water quality of those water bodies. The Coalition sampling and outreach activities are wholly supported by a grower assessment fee.



### *What's been going on?*

The Coalition's area contains many surface

water sources, which includes rivers, creeks and drains. A few of these were selected for monitoring of water quality, generally on a monthly basis. This includes both irrigation season and the stormwater season. Sediment samples are also collected and analyzed for toxicity and pesticide concentrations twice a year. Exceedances of water quality trigger limits (developed to protect beneficial uses of the San Joaquin River and Mokelumne Rivers) occurred in all monitoring sites from 2004 to 2008—enough so to cause mandated management plans to be prepared. The purpose of the management plan was to outline a course of action to eliminate future water quality exceedances. Grower outreach meetings were held in management plan areas of the South Eastern portion of the county to discuss grower practices which could reduce exceedances. Additionally, growers were asked to define their current management practices, and indicate their desire to implement additional ones which could reduce downstream water quality problems. Water quality monitoring continued during months of past exceedances for management plan constituents to evaluate improvements in water quality due to improved management practices.

### *Water Quality Exceedances.*

Numerous water quality constituents were found in concentrations that exceeded water

### SUSTAINABLE VITICULTURE DIRECTOR UPDATE

Mike Wanless, the LWC's Sustainable Viticulture Director, resigned in mid August. The Commission is in the process of finding a qualified candidate to lead this department in the years to come. In the interim, Dr. Cliff Ohmart with SureHarvest has been contracted to help administer the Lodi Rules Program for the coming season. The research committee has also taken an active role in scheduling the upcoming breakfast meetings and newsletters. Please let us know if you know of any qualified candidates for this position.

quality trigger limits. The most common exceedances occurred for organophosphate insecticides, a type of pesticide class. The table below shows the currently registered pesticides with associated exceedances occurring in one or more samples collected at Coalition monitoring sites from 2004 through 2009. The pesticides are ranked as a percentage of the total pesticide exceedances (121 exceedances for all pesticides sampled 2004 - 2009).

### *Management Plans*

The overall goal of water quality management plans, whether developed by individuals or coalition groups, is to reduce impacts on water quality in the plan area by implementing additional management practices and evaluating their effectiveness. The Coalition's Management Plan evaluates the frequency and magnitude of exceedances and prioritizes locations for outreach and evaluation of management practices.

*continued on following page.*

PESTICIDES FOUND IN EXCEEDANCE 2004 - 2009  
SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION

Pesticide Name	Trade Name	Chemical Class	Percent
chlorpyrifos	Lorsban	organophosphate	60
diuron	Karmex	substituted urea	9
diazinon	Diazinon	organophosphate	7
thiobencarb	Bolero	thiocarbamate	6
disulfoton	Disyston	organophosphate	3
simazine	Simazine	triazine	3
methidathion	Surpacide	organochlorine	2
dimethoate	Cygon	organophosphate	2
malathion	Malathion	organophosphate	2
cypermethrin	Mustang, Fury	pyrethroid	2
methomyl	Lannate	carbamate	1
methyl parathion	Penn-Cap	organophosphate	1
azinphos methyl	Guthion	organophosphate	1
paraquat		quaternary	
dichloride	Gramoxone	nitrogen	1
linuron	Linurex, Lorox	substituted urea	1

To achieve the goal of improving water quality, a management plan must include:

- Source identification of practices that may be contributing to downstream water quality exceedances including applications of pesticides, discharge of tailwater containing constituents of concern and spray drift.
- Outreach to inform growers about practices that can be implemented to reduce irrigation and stormwater runoff including spray drift.
- Evaluation of management practice effectiveness by monitoring water quality during times of past exceedances for constituents of concern.

Under the Coalition's Management Plan landowners/growers must:

- Help the Coalition succeed by participating in efforts to solve problems identified through water monitoring.
- Stay informed – read mailings and updates, respond as necessary.
- Attend grower water-quality information meetings.
- Implement management practices that address the identified water quality concerns.

## IN THE VINEYARD

### *What's next?*

The Coalition will continue to monitor prioritized sub-watersheds where intensive outreach and education has occurred to evaluate effectiveness of newly implemented management practices. If no exceedances occur the sub-watershed and constituents can be removed from the Management Plan. The Coalition has already begun a focused outreach and education program within six high priority sub-watersheds.

The Coalition is now beginning to evaluate current water quality conditions for a third set of priority subwatersheds. The third Management Plan priority areas include Terminous Tract, French Camp Slough, and Mokelumne River. Sampling has begun and will continue through 2012. A schedule has been outlined in the Coalition's Management Plan to address all subwatersheds requiring a management plan by 2015.

A number of the pesticides used by grape growers are included in the Coalition's Management Plan. Probably the one of greatest concern and risk to surface waters is chlorpyrifos (Lorsban) when applied for vine mealy bug after harvest. An application at that time can run the risk of degrading surface waters from drift, and stormwater runoff.

A new publication is available that provides winegrape growers with information to help reduce the occurrence of organophosphate and synthetic pyrethroid pesticides in surface waters, which include streams, lakes, ponds, rivers, and drainage ditches. An assessment of the potential risk of offsite movement as a result of an agricultural chemical application is described using a flow chart for a specific crop, management practices used, and existing field conditions. The risk self-assessment focuses on issues that affect either the number of pesticide applications containing these active ingredients, limiting the offsite movement of pesticides from drift, or movement of pesticide active ingredients attached to sediment, or in runoff waters.

If a significant risk is determined in the assessment, an array of science based management practices is then identified and discussed. Growers can implement these practices to mitigate the risk that pesticides will leave the site of application and enter surface waters.

This publication is available to growers at the UC Cooperative Extension office in Stockton and the Lodi Wine Commission office in Lodi, or online at <http://cesanjoaquin.ucdavis.edu/files/81821.pdf>

BY PAUL S. VERDEGAAL

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The 2010 season presented an interesting challenge to growers both long experienced and the relatively new. With the Giants achievement of a World Series title, what comes to mind is after several very warm years Mother Nature decided on a "changeup". Budbreak began slightly behind average, somewhat rainy and very mild the entire season. Fruit quality appears to be excellent with good colors, nice flavors and higher than average total acids. The flip side of the coin for 2010 is the light crop; individual growers sacrifice income, but that should avoid an oversupply of wine as the economy struggles.

Seasonal temperatures were below average with dry conditions after the initial spring rains, but more windy days than I can ever remember. An above average rain total this year helped alleviate three years of drought, but deep soil moisture was still lacking. Vineyards need another wet winter to totally recover from the dry conditions. The early spring rains and continued cool temperatures did reduce cluster development, flower set and yield.

Overall conditions were conducive to powdery mildew, but there were enough "washing" rains and very cool temperatures, so that problems were

scattered and light where normal control programs were followed. The early May rain of more than an inch of rain helped reduce stress on vines and might have been part of the reason mite problems appeared light, as with leafhoppers. Compared to last year, there was less summer (sour) bunch rot this season in tight clustered and thin skinned varieties such as Zinfandel and Petite Sirah, but there was some.

The big concerns on many growers mind were new pests to the District and County; Light Brown Apple Moth (LBAM) found in the South County in 2009, Spotted Wing Drosophila (SWD) also found in 2009 and European Grapevine Moth (EGVM) found in August of this year in east Lodi. The good news seems that SWD doesn't do as well in wine grapes as cherries or bush berries. The bad news has been both EGVM and LBAM require quarantines and compliance agreement programs for growers in affected areas, as well as the added cost of possible treatments. Fortunately, only two EGVM were found and no new finds have occurred since.

The overall crop came in well below last year's crop and slightly less than long term average for most varieties in most sites. The cool seasonal temperatures delayed harvest to the later side of average for early varieties such as Pinot grigio, Chardonnay, Sauvignon blanc, and Pinot noir going to sparkling wine production. White Zinfandel harvest began in earnest around August 18th, compared to a long term average of about August 10th., and actually began about the same time as last year in the historically traditional part of the Lodi District, possibly in part due to the lighter crop this year.

Many of the mid season varieties sped up in development with a hot spell as harvest began and many varieties, such as Sangiovese, Syrah, and red Zinfandel were ready about the same time as last year. It seems the traditional core of the Lodi District caught up in fruit development; while the margins of the District to the east and west remained delayed as was most of the coast and foothills. A trace of rain occurred on October 5, but a late season warm spell before and after allowed rapid fruit ripening ahead of the initial rain of October 17th with about 0.25 inch. It appears the hard earned experience of the early settlers indicates why Lodi has always been a good place to grow grapes.

As harvest continued and accelerated, fall weather turned for the worse; when more than 1.5 to 2 inches of rain fell with 30 mph winds, over two days on October 23 and 24. Although not as bad as last years 24 hour deluge of 2.9 inches and 40 mph plus winds on October 13, a small percentage of fields were still waiting to be picked this year. The ground was dry enough from the three year drought that the rain soaked in fast. Most remaining blocks should have been harvested before significantly negative effects of breakdown developed. But it's never good.

Although yields were down; color, flavors and total acid levels were all excellent. The cool year was evident in vine growth and fruit development, as only 5 days above 100°F occurred compared to 13 days last year and a long term average of about 19 days for a season.

The 2010 season received above average rainfall. The last rain occurred on May 27 for a seasonal total of 19.2 inches; compared to 15.1 inches in 2009, 13.6 in 2008 and 12.1 in 2007.

From mid July on most daily maximums were below average, but it was curious that even when daytime maximums were average or higher, the night time lows consistently were at or just slightly above record lows each morning, with very little dew. Accumulated stress, unusually cool spring growing conditions, and a bunch of things nobody has a good answer for at this point, was very evident in farm calls this year.

This year's growing conditions and the three year drought manifested itself in various symptoms. Even with above average irrigation programs, there was only moderate growth in many vineyards, especially younger vines. And there were many vineyards with late season berry shrivel, portions or even entire clusters raisining. Often these problems were not obviously attributable to disease, nutrient deficiency or excessive sun exposure. It occurred across varieties, across trellis systems, across soil types, and across the District. Some of these symptoms appeared last year; and I as recall, slightly so in the dry conditions seen in during 2003 and 2004. But the widespread incidence of berry shrivel and cluster collapse was last seen in the 2000 season, when berry and cluster shrivel was rampant across the Lodi region. Nobody has a single explanation or good answers to all the problems seen this

year. There are several theories, and hopefully it will be another long time before we see as many problems. In the meantime maybe we can make progress in discovering some clues. I think three years of drought had something to do with it (but I could be wrong as I am at times reminded at home). Growing conditions; winter, spring and summer weather; nutrients; crop load, irrigation (or something else) may all be factors to sort out.

Vine Mealy bug is still spreading throughout the County. So it's good to be on the lookout and aware of any new infestations, often indicated by sooty mold or excessive honeydew in clusters, spurs or cordons. A high degree of ant activity in and around vines can also indicate problem spots. Good places to begin looking before harvest are where birds tend to roost. Good news lately has been the re-registration of an effective control material, along with several newer options.

With more habitat areas and native/natural landscapes, less use of residual herbicides and increased tolerance for weeds, it is more important than ever to monitor and to control some of the more noxious and troublesome weeds BEFORE THEY SEED. Besides Mares tail and Fleabane, star thistle is also more of a problem along roadsides and it requires attention or it will dominate mowed areas, row middles and habitats.

For many varieties such as Pinot grigio, Petite Sirah, Sauvignon blanc, Zinfandel, Colombard, even Chardonnay and the newcomer Pinot noir; demand is good and prices may improve slightly. The demand for Cabernet Sauvignon is dramatically improved and Merlot is less of a concern, especially as the crop is below average.

The number of small wineries grows and with more labels along with more medals, everyone benefits from recognition for all the hard work and risk. The County as a whole and the Lodi District in particular continues to confirm the region to be a good place to grow quality fruit for quality wines, which are a value, in spite of the challenges to comply with new regulations, while controlling costs. The economy will determine how good a year 2010 turns out to be with regard to returns, but quality is excellent and the long term still bright.

*Good luck as 2010 winds down.*



# Have your voice heard with the third Lodi Growers Survey

The Lodi Wine Grape Commission wants to know your views about viticulture management, outreach, and education in Lodi! UC Davis will be mailing out the third installment of the Lodi Growers Survey in February 2011. The survey will ask your opinions about the use of different viticultural practices and the effectiveness of the Lodi Winegrape Commission's outreach activities. Your opinion is important, and this is an opportunity to have it heard.

The first and second surveys, administered in 1998 and 2003, collected important information used by the Lodi Winegrape Commission to improve outreach strategies and services to Lodi winegrape growers. The information collected in this survey will influence how the Commission responds to the changing times in California viticulture and meet the changing needs of Lodi growers. Please do not miss this opportunity to shape the future of Lodi.

In addition to serving as the Lodi Growers Survey, the survey is part of the first state-wide study of viticultural practice adoption and outreach effectiveness in California viticulture. The study is administered by UC Davis Center for Environmental Policy and Behavior (<http://environmentalpolicy.ucdavis.edu/>) and is funded by the National Science Foundation. The results will be used for publications in journals like California Agriculture, in research reports communicating valuable information to agricultural organizations and institutes across California and the nation, to inform agricultural policy in our home state of California, and to generally improve California agriculture.

The survey will be mailed to your home or business. We kindly ask that you take the time to complete the survey by thoughtfully answering all questions. A postage-paid return envelope will be included for you to return the completed survey to UC Davis. Your answers will not be shared, will not be available to others in a format that includes your identifying information, and no published materials will include your identifying information. Thank you in advance for completing the third Lodi Growers Survey.

## UPCOMING MEETINGS: Lodi Rules for Sustainable Winegrowing Program

Tuesday December 7, 2010, 9am to 10am; Burgundy Hall, Lodi Grape Festival Grounds

Come hear about how you can get your vineyard certified sustainable and some of the benefits that you may gain from doing so. There are currently more than 50 growers certifying over 20,000 acres of vineyards in the Lodi Rules program.

Presenter: Dr Cliff Ohmart, VP Professional Services, SureHarvest

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COMMISSION



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