LoCA
THE WINES OF LODI CALIFORNIA

LODI GROWER NEWSLETTER

APRIL 2013 lodiwine.com

Matthew Hoffman: YOUR NEW GROWER PROGRAM COORDINATOR

I'd like to take this opportunity to introduce myself. In October, I was hired as the new Grower Program Coordinator and am responsible for viticulture research, grower outreach, and the Lodi Rules for Sustainable Winegrowing certification program. My first five months at the LWC have been productive, and I have received much support and positive feedback from the LWC staff, Board of Commissioners, Lodi Rules Committee, and the Research, Education, and Communication Committee. It is a privilege to apply myself in Lodi.

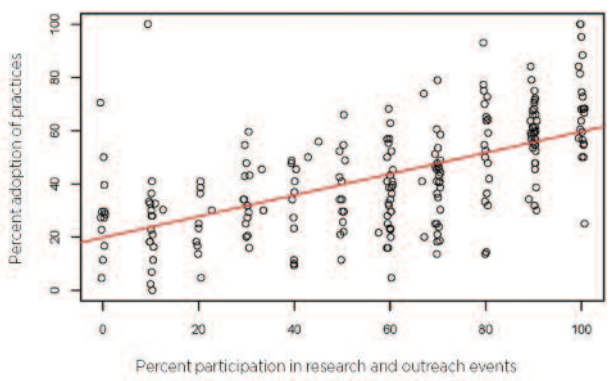
While most of my counterparts have focused their education and training on the science of viticulture, my expertise lies in the science behind how grower organizations, like the LWC, can design research and outreach programs to best serve growers. I bring this training to bear on my work of providing Lodi growers with opportunities to continually learn and advance their understanding about vineyard management. After all, the context in which we grow winegrapes is constantly changing. Our knowledge about vineyard management must adapt to these changing times.

I earned my B.S. in pomology with a focus on viticulture from Cal Poly, San Luis Obispo and went on to earned a M.S. from Iowa State University's Rural Sociology Program and the Graduate Program in Sustainable Agriculture. I later entered a Ph.D. program at UC Davis where I was involved in a research project you may be familiar with.

My UC Davis colleagues and I conducted the 2011 Lodi Winegrape Grower Survey and the 2013 Lodi Winery Survey. The LWC was instrumental in the success of this landmark study, and the results have been published in Practical Winery and Vineyard[1], the LWC's IPM newsletter[2] and the Center for Environmental Policy and Behavior's series of Research Briefs[3]. The Lodi surveys were part of a larger California-wide study of winegrape grower and winery manager adoption of sustainability practices, the effectiveness of local grower organizations (including the LWC) at achieving various goals, and the role social networks of knowledge sharing among growers, winery managers, and outreach professionals play in learning about vineyard and winery management.

A wealth of insight was drawn from these surveys, but one in particular inspires my confidence in the LWC. As you know, one of our chief objectives is to support grower adoption of viticulture practices that balance environmental, social, and economic goals through research and outreach[4]. The LWC's programs are indeed effective at achieving this goal. Among Lodi growers, we found that on average, the more a grower participates in activities (such as breakfast meetings, field days, and self-assessments), the more likely they are to implement sustainability practices (those in the Lodi Winegrower's Workbook). This signals that the LWC has indeed supported growers through the process of innovation. This is a tradition Lodi growers can be proud of, and one that I am eager to build upon. I look forward to

Figure 1: Relationship between grower participation in research and outreach events and adoption of practices



working with you to meet the ever changing demands of winegrape growing.

I hope you enjoy reading this newsletter as much as I have enjoyed writing it for you. The articles I have prepared are only the tip of the iceberg of the work being done at the LWC. Please consider my door open, and I look forward to meeting you in person soon.

[1] Hoffman, Lubell, Hillis. 2011, Spring. "Defining Sustainable Viticulture from the Practitioner's Perspective. Practical Winery and Vineyard. http://environmentalpolicy.ucdavis.edu/files/cepb/Hoffman_Defining-2011_0.pdf
[2] Hoffman, Hillis, and Lubell. 2012. "2011 Lodi Winegrape Grower Survey: Report of Results". Lodi Winwegrape Commission IPM Research Newsletter. http://environmentalpolicy.ucdavis.edu/files/cepb/IPM_Newsletter_0.pdf
[3] CEPB. Sustainable Viticulture: Practice Adoption and Social Networks. http://environmentalpolicy.ucdavis.edu/project/sustainable-viticulture-practice-adoption-and-social-networks
[4] Lodi Winegrape Commission. "Mission Statement". http://www.lodiwine.com/mission-statement

Barn owl research

The LWC is in its third year of successful collaboration with Mark Browning and PG&E to research and promote the use of barn owls to control rodents in Lodi vineyards. In January, the Research, Education, and Communication Committee voted to fund Browning's third year of data collection from research sites in Vino Farms vineyards. The research is comprehensive and will look at Lodi vineyards carrying capacity for barn owls, optimum nest box density per acre, preferred nest box orientation, the general period of barn owl breeding season, hunting behaviors, and their preferred prey. Most interesting, Browning will track the relationship between changes in prey population and barn owl population. Such insights will advance our understanding of how barn owls can be used to successfully control vertebrate pests in vineyards. For readers interested in learning more about the study, see the February 2011 and April 2013 editions of *Ag Alert*.

Browning's results from 2011 and 2012 are encouraging. In the first year, 55% of the nest boxes were occupied and occupancy rose to 75% in the second year. The 24 nest boxes included in the study resulted in 11 mating pairs and 40 fledged young in the first year and 18 mating pairs and 66 fledged young in the second year. Browning also found a negative correlation between barn owl numbers and rodent numbers, which is a strong argument for their effectiveness of barn owls for rodent control. Pellet analysis revealed that 83% of barn owl diets are comprised of pocket gophers. Browning's research also found that barn owls prefer nest boxes facing easterly directions.

PG&E's Owl Safe program has had a significant impact on the number of barn owl nest boxes in Lodi vineyards. Since 2011, PG&E has donated $60,000.00 toward making next boxes available to Lodi growers free of charge. As a result, a total of 257 nest boxes have been distributed. Given Browning's research findings, it is likely that PG&E's Owl Safe program has indeed had a positive effect on rodent control in local vineyards.

To help Lodi growers get the most out of their barn owl nest boxes, the LWC has authored a leaflet on barn owl nest box best management practices. The leaflet, *Barn Owl Nest Boxes: Best Management Practices*, summarizes information from a number of scientific resources about nest box site selection, installation, and maintenance. The leaflet is free to all Crush District 11 growers and is available by contacting the LWC.

Weather station research

The LWC's Research, Education and Communication Committee is partnering with Doug Gubler and Brianna McGuire of UC Davis on a project to develop a virtual weather station service. We are all familiar with weather stations and the valuable real-time and field-level data they provide on weather and canopy conditions. Such data is critical when making sound pest management decisions, especially when it comes to powdery mildew control. However, the high costs associated with weather stations can be prohibitive. Those who do own weather stations are still limited as the stations only collect data from a single location. The Gubler Lab has, for several years, been working on a mathematical model that draws real weather data from local stations to generate virtual weather data for any location. The virtual weather station service will be web-based, and a grower will be able to "install" a virtual weather station in any vineyard he or she chooses. The objective of this two-year project is to test the accuracy of the model and develop a user-friendly website for growers to access the virtual data. A total of 10 Lodi growers are participating in this project, with stations installed across the Crush District from the Delta to the Clements foothills. I will report more about this project as it unfolds.

New grower-oriented website

If you have recently visited the current LWC website, lodiwine.com, you have probably noticed that it is designed to meet the needs of consumers interested in experiencing Lodi Wine Country. This site is the public face of Lodi and is a key component of the LoCA marketing campaign. However, we recognize the need to provide Lodi growers with practical information pertinent to the day-to-day work of growing quality winegrapes. A main feature of the new website, www.lodigrowers.com, will be the "Coffee Shop". At the Coffee Shop, you can get caught up on such information as the latest viticulture research, new innovations in vineyard management, industry news, regional weather, sustainable certification, and local events. Other features of the website will be the "Library", which will be a searchable archive or useful reports and articles, and the "Marketplace", which will connect growers and vintners for the sale and purchase of winegrapes. The LWC staff is working hard to have the grower website up and running in the near future.

E-News

Traditionally, the Commission has used printed postcards and newsletters to communicate with growers. These communication methods will continue to be important. However, in an effort to be more efficient with our resources we would like to use email communication for those growers interested. The Lodi Grower E-News and the Lodi Rules E-News have been in use for the past few months. Have you been receiving the emails? If yes, I hope they have been useful. It not, call or email me and I will be happy to add you to the list.

Field Day Report: Mechanical Pruning

Many winegrape growers, especially those with larger scale operations, are increasingly looking toward mechanical methods of canopy management as a means to achieve higher yields, streamline their production costs, and simultaneously maintain and even improve winegrape quality[7]. At this year's Unified Wine and Grape Symposium an entire session was dedicated to the topic of mechanization. Over the past decade, many advances in mechanization have been made.

Mechanization of pruning was the topic of the March 11th LWC field day. Growers considering mechanical pruning must first grapple with a number of questions. What type of equipment do I need? How much money should I expect to invest? How much can I expect to save, and over what period of time? Can I mechanically prune my existing trellis system, or should I replant? How will mechanical pruning impact pest and disease pressure and winegrape quality? At the field day we discussed these and many other questions, which I summarize below.

Paul Verdegaal, our UCCE farm advisor, began the day with a review of the basic purposes and principles of pruning according to Winkler et al[8]. The basics serve as a strong reference point as we deliberate the costs and benefits of mechanical pruning. Why prune in the first place? We prune to 1) establish and maintain the structure and form of the vines, 2) distribute the bearing wood over the entire vine and entire vineyard, 3) and regulate crop load. To accomplish the purposes of pruning, we must first understand how vine the physiologically responds to pruning in terms of growth and fruiting. Winkler et al's principals of pruning can be applied to manual and mechanical pruning alike, and are as follows:

- Pruning is depressing to vine function and decreases vine capacity.
- Crop is also depressing to vine capacity for following year(s).
- Capacity of a vine is related to number of shoots and amount of crop present.
- Shoot vigor is inverse to the number of shoots and to crop load.
- Bud fruitfulness is inverse to shoot number.
- Large canes or arms can produce more than small ones and should carry more fruit buds.
- A vine can nourish and ripen only a certain amount of fruit.
- Capacity of a vine is limited by its previous history and environment.

The first site visited during the field day was the Liberty Winery field trial, were Ernie Dosio of Pacific Agrilands shared his knowledge about mechanized pruning. The Liberty trial is a three-year-old mixed block of Cabernet Sauvignon, Chardonnay, Merlot, Pinot Grigio, and Pinot Noir, which was established specifically for experimentation with mechanical pruning. Upon first glance, this vineyard is not average. The vines are 66" tall with single wire trellising system. The single wire, which is mounted just one inch below the top of traditional t-stakes, is critical for mechanical pruning as it allows the machinery to straddle and move down the length of the cordon without obstruction. The machine is adjusted to prune the vines into an 8.5 X 8.5 inch "box" or "hedge". Following the mechanical pruner, Ernie uses a small field crew with pruning shears to remove horizontal or otherwise undesirable growth. The crew is able to move quickly through the vineyard at walking pace. For the first time, the trial vineyard will be mechanically pruned in 2014. During the first three years, the vines were manually pruned for the purpose of establishing spur position and orientation. The manual pruning was done to simulate the 8.5 X 8.5 inch dimensions, which allows for about 2 to 3 buds per spur. Vine spacing is 7 X 10 feet. Ernie recommended 8 X 10 foot spacing, but warns against anything less than 7 X 10. As you can imagine, the appropriate trellis system and spur position is critical for maximizing the benefits of mechanical pruning. Converting an established vineyard with a standard trellis system is problematic.

Mechanical pruning lends itself to high yield. In the south Central Valley Ernie has seen "huge tonnage" of 15+ tons per acre for Ruby Cabernet and up to 20+ tons per acre for French Colombard. The relatively high number of buds left on the vine after pruning is a major reason. Because of this, mechanically pruned systems require much greater photosynthetic capacity. The high single wire allows for a tall canopy curtain, which better meets the system's photosynthetic needs. Ernie prefers a 72" high wire. This high yield does come at a cost in terms of the vine's nutrient and water needs. Ernie estimated that his mechanically pruned systems receive 50% more nitrogen and water compared to traditional manually pruned systems.

Mechanical pruning equipment is expensive, but relatively simple in design. On display was Pacific Agriland's Spagnolo brand mechanical pruner, which had a $65,000 price tag. Spagnolo is an Australian company, where mechanical pruning has been successfully used for many years. The equipment was offset mounted on the front of the tractor. The pruner consisted of two parallel sets of shears (similar to those found on conventional cane trimmers) located on the front and four bladed wheels located at the rear. The shears sculpt the sides of the box and the wheels the top and bottom. Ernie shared that maintenance costs include replacements blades, which run $400-500 per year, and complete rebuilds, which run about $15,000 every other year. Ernie uses a larger 100HP tractor, versus a smaller 50HP tractor, to support high weight and the forward offset mounting of the pruner. This setup can mechanically prune 900 acres in 2 months' time. The Spagnolo pruner was designed specifically for the job, but Maxwell Morton, UCCE farm advisor for Merced County, says that conventional cane trimmers can be adapted to accomplish similar results.[9]

Beyond the cost savings of labor, mechanical pruning can have benefits on pest and disease control too. Ernie stated that in his experience, mildew and rot pressure is the same in his mechanically pruned vineyards as it is in those that are manually pruned. However, others argue that mechanical pruning can reduce mildew and rot[7,9]. In mechanically pruned vines, bunches are distributed over the entire canopy instead of only among the cordon, which increases air circulation. Bunch and berry size tends to be smaller, which also lends toward better air circulation. Wood canker diseases, especially eutypa, can also be better controlled in mechanically pruned vineyards. Because mechanical pruning can be done faster, pruning can wait until later in the winter when there is less chance of infection through water splashing. Furthermore, mechanical pruning results in cuts on smaller wood, further reducing the chance of infection. Immediately following pruning with an application of fungicide is recommended. Ernie, and others 7, 9, noted that Eutypa dieback has been successfully managed in Lodi vineyards with mechanical pruning.

Joe Valente of Kautz Farms hosted the second field site, a 29-year-old Cabernet Sauvignon on St. George vineyard converted to "minimal pruning" in 1999. The vineyard was originally manually pruned. Due to old age and disease its yields were down, and thus scheduled to be replanted. But Joe and the vineyard's owner John Kautz then decided to conduct an experiment. Their goal was to stretch the economic life of the vineyard by drastically reducing operation costs through minimal pruning. While the vineyard produces about 7 tons per acre, the result is what Joe referred to as "a real mess". However, the experiment led to some lessons learned that Joe believes are transferable to mechanical pruning.

Joe wonders how long mechanically pruned vines will remain productive. He recalls that the most productive vines are those with one-year-old wood on two-year-old wood. The minimal pruning methods he used are not selective, resulting in one year old wood on two, three, four, and even five year old wood. This leads to a vine that resembles a bush, with much old and dead growth at its center. In order to keep new wood on the vine, Joe has had to increase the width of the hedge. Based on this experience, Joe is skeptical that maintaining an 8.5 X 8.5 inch box over many is realistic.

This leads us to another challenge – MOG. Because the vineyard is mechanically harvested, Joe has had trouble keeping the abundance of dead wood and other debris out of the harvest bin. Trunk shaker harvesters seem to work better than those that shake the canopy directly with bow rods or pivot strikers. Newer vineyards with single wire systems would have much less old and dead wood, but Joe's point is worth contemplating.

During the field day I took away two main lessons from Ernie, Paul, and Joe. First, in order to get the most out of mechanical pruning, one should start from the ground up with a trellising system and vine spacing designed to accommodate the pruning machinery and productivity of the large canopy. Retrofitting an existing trellis system may work, but not without difficulties and inefficiencies. And finally, mechanically pruned systems are best suited for operations that are able to make a significant investment, aiming for high yields, and not willing to sacrifice on quality.

[7] Cline. 2002. "Mechanical vine pruning dramatically reduced costs. Western Farm Press. http://westernfarmpress.com/mechanical-vine-pruning-dramatically-reduces-costs
[8] Winkler, Cook, Kliewer, and Linder. 1974. General Viticulture. University of California Press. Berkeley, CA.
[9] Norton. "Mechanical pruning of wine grapes". http://cestanislaus.ucanr.edu/files/111478.pdf

Lodi Rules

As you know, the Lodi Rules for Sustainable Winegrowing is California's original sustainable viticulture certification program. The program was designed to communicate Lodi's history and commitment to farming quality winegrapes through the implementation of practices that balance environmental, social, and economic goals. Consequently, the program has contributed to Lodi's reputation as an industry leader in agricultural sustainability. The LWC, with guidance from the Lodi Rules Committee, is continually evolving the program. Sustainable agriculture certification programs are increasingly becoming an important part of modern agriculture. Today, the Lodi Rules is one of 425 voluntary standards and labeling initiatives spread across 25 industries worldwide (footnote).

The Lodi Rules has grown vigorously since its establishment in 2005. As of 2012, nearly 26,000 winegrape acres were "Certified Green" in California. Within the Lodi region about 20,000 acres have been certified and over 6,000 acres were certified in other regions throughout California. Figure 1 plots the number of certified acres over the years. The number of business entities participating in the program has grown from 7 to over 85. This dramatic growth reflects positively on the program, and is a strong measure of its success and relevance to modern viticulture. We expect this trend to continue in 2013.

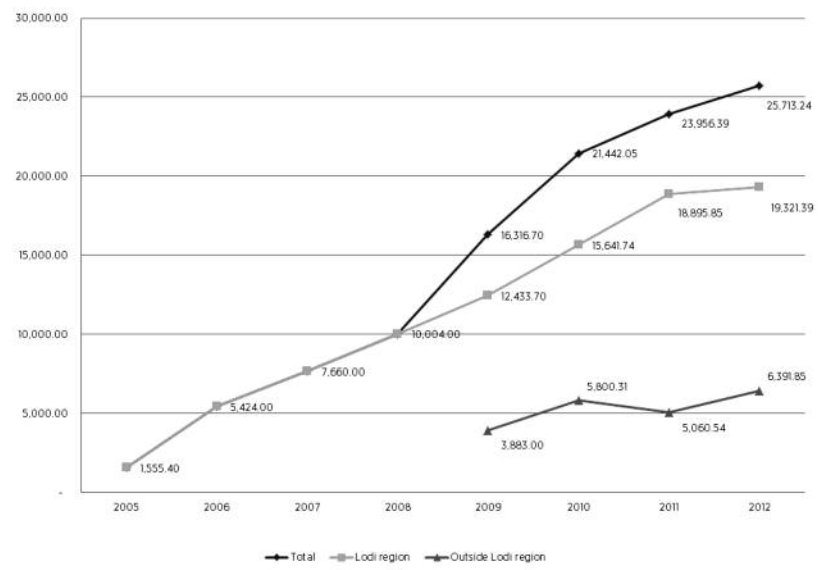
The 2011 Lodi Winegrowers Survey provided empirical insights suggesting that the Lodi Rules is widley supported and has helped our region make strides toward achieving a number of goals, . Forty-eight percent of survey respondents - certified and non-certified growers - are supportive of the program. In contrast, only eleven percent voiced opposition. Surveyed growers perceive the Lodi Rules to be successful at improving consumer perception of the Lodi region, improving winegrape quality, reducing risk of agriculture's impact on environment and human health, improving wildlife habitat and biodiversity, and improving Lodi's relationship with regulatory agencies.

The survey also collected data on whether the Lodi Rules is achieving one of its major objectives. Do certified growers adopt more sustainability practices than uncertified growers? The answer is yes. Figure 2 reports that Lodi Rules certified respondents implement 58% of sustainability practices included in the survey while uncertified respondents implement 33%. Backed by this research, we can say that the Certified Green seal represents growers that go above and beyond to ensure the long-term viability of Lodi agriculture.

2013 marks a year of improvements to the Lodi Rules, the most significant of which is the revision of the standards. The Lodi Rules Committee began the revision process two years ago with the explicit goals of increasing the scientific rigor of the standards while also making the program more adaptable to a diversity of vineyard conditions and management goals. In January 2012, the Protected Harvest Board of Directors accredited the revised standards. The Lodi Rules now consists of 101 standards organized into six chapters: Business Management, Human Resources, Ecosystem Management, Soil Management, Water Management, and Pest Management.

"We are very proud of the rigor and quality these standards represent," noted past Lodi Rules Committee Chair Stanton Lange. "They reflect Lodi's generational

Figure 2: Number of acres certified in Lodi Rules



commitment to responsible farming, and give wine lovers the opportunity to support our efforts by enjoying a glass of Lodi Rules certified sustainable wine." Stanton manages about 900 acres of certified winegrapes. According to Chris Storm, the current Chair, "The new Lodi Rules standards address issues important to sustainability that were not addressed in the previous version, especially business and human resource management. Our goal was to ensure that the Lodi Rules remains the pre-eminent certification program in California. I believe the new standards accomplish this." Chris and his employer, Vino Farms, manage 4,200 acres of certified winegrapes.

With the new standards in place, we are now directing attention toward connecting the economic dots between growers, wineries, and consumers. To date, the LWC has put much effort into developing the Lodi Rules standards and increasing grower participation in the program. The next frontier is to bring Lodi wineries and the general wine consuming public into the fold.

The future success of the Lodi Rules depends, in no small part, on more and more Lodi wineries investing in the program. According to data from the 2012 Lodi Winery Survey, 39% of Lodi's 85 wineries purchase certified grapes but only 13% print the seal on their labels. Only 2% offer growers a price premium for certified grapes. The Commission would like to see these figures grow, because wineries play a critical role in championing Lodi Rules wines to buyers, distributors, and the general public. As more winery owners and staff become versed in the Lodi Rules, and as more labels bear the Certified Green seal, we can begin to be optimistic about realizing the economic potential of the program.

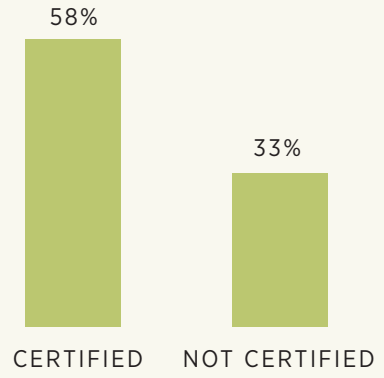
Over the next few years the LWC will meet this challenge by reaching out to wineries with educational events designed to raise awareness and understanding of the Lodi Rules. We are putting together a suite of seminars, workshops, and trainings. These events will prepare Lodi wineries to communicate the benefits of the certified wines to their customers and to provide training on how to integrate the notion of sustainability into winery branding and marketing. We will also host networking events so growers with certified grapes can start to build relationships with wineries interested in making wines bearing the Certified Green seal.

Ultimately, the goal is to promote a wine market that economically rewards growers and wineries who invest in sustainable certification and to raise Lodi's reputation as a leader in sustainability.

[11] Hoffman, Matthew, Anthony Hillis, Mark Lubell. 2011. "2011 Lodi Winegrape Grower Survey: Report of Results". Lodi Winegrape Commission. http://environmentalpolicy.ucdavis.edu/files/cepb/IPM_Newsletter_0.pdf
[12] Hillis, Anthony, Mark Lubell, Matthew Hoffman. 2011. "Winegrower Perceptions of Sustainability Programs in Lodi, California". Center for Environmental Policy and Behavior, UC Davis. http://environmentalpolicy.ucdavis.edu/files/cepb/Lodi%20program%20perceptions_0.pdf
[13] Hillis, Anthony, Mark Lubell, Matthew Hoffman. 2011. "Practice Adoption and Management Goals of Lodi Winegrape Growers". Center for Environmental Policy and Behavior. http://environmentalpolicy.ucdavis.edu/files/cepb/Lodi%20practices.pdf

LODI RULES COMMITTEE CHAIR, CHRIS STORM

FIGURE 3:
Percentage of sustainability practices adopted by certified vs. not certified growers



In the Vineyard: BY PAUL VERDEGAAL

RAINFALL AND IRRIGATION

Recent seasons have been fluctuating between drought and wet years. Three years of drought (2007-09) were followed by two wet years (2010-11). Now another dry spell is developing, with low rainfall in 2012. Things could change dramatically within the next two months, but the pattern looks dry for 2013. The historical caveat that California is always a year away from drought is well founded.

The good news is that, unlike last year, deep soil moisture is very good from the Fall heavy rains. A very dry January and February was mitigated by very cold temperatures and low weed growth. With a somewhat recharged soil profile, most vineyards are not in dire need of irrigation. However, a short irrigation might be in order for vineyards on sandy soils and older vineyards that may be fighting off disease or soil pests.

The total rainfall for the North County during the months of October, November and December ended up at 11.0 inches (7.5 inches, the average). Rainfall was also above average for the South County. January was well below average at only 1.5 inches. The dry February (0.3 inch) and now dry March are beginning to drop the season total to below average for this time. If dry conditions continue, which appears likely, irrigation in the next two weeks is probably a good investment. Grapes are a low demand crop for water and nitrogen, compared to most other fruits and nuts, but extremely dry conditions can affect the strength and uniformity of bud push in addition to negatively affecting the final development phases of this year's fruit bud. Overall it seems there is decent deep moisture in most vineyrds, but it could be easy to fall behind.

During this time of year, checking out your irrigation system is neither a bad idea nor a waste of time. And checking out the soil profile with an auger or even a just a little digging with a shovel may help confirm how good a recharge the winter rains and irrigation may have done your soil profile.

Now that budbreak has arrived, monitor soil moisture with soil moisture probes, a quick check by auger or shovel in sandy sites, in traditionally dry areas, and especially where cover crops are present. If a winter cover crop is present, soil moisture loss has been roughly about 0.10 of an inch of water per week (about 2 hours I of irrigation time). That will increase with warmer weather.

All considered, it is good to stay ahead of vine demand, especially if you are on a strict Regulated Deficit Irrigation regime. Irrigation now will also help avoid using deep soil moisture early in the season. Deep moisture is good to have on reserve for late summer and early fall hot spells. The dry year makes it easier to control vines, but it will be good to be earlier rather than later in starting irrigations.

RAINFALL SAN JOAQUIN COUNTY - LODI

2005 - 2013

YEAR	TOTAL INCHES	OCT NOV DEC	JAN	FEB	MAR	APR	MAY	JUN
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	0.3	4.3	0.6	2.3	T	
2008	13.6	4.5	7.3	1.8	0.1	0	0	
2009	15.1	4.0	1.9	5.3	1.9	0.7	1.3	
2010	19.2	6.1	4.5	3.6	1.8	2.9	0.3	
2011	24.8	12.1*	1.4	4.1	5.8	0.2	1.2	1.3
2012	12.4	3.0	2.9	1.3	3.3	1.9	T	0
2013	13.2	11.0	1.5	0.3	0.4			
AVG.	17.4	7.5	2.6	2.6	2.2	1.5	0.7	0.1

* 1.7 INCHES ON OCTOBER 23 & 24

CHILLING HOURS AND TEMPERATURE TRENDS

The curious weather pattern this winter (besides extreme dryness) is that most daytime maximum temperatures have been slightly above average, while most nighttime minimums have been well below average. The above chart shows budbreak is not occurring earlier each year, but anyone (even a "climatologist") can see that you can create a trend by focusing analysis on narrow periods.

Chilling hours (hours below 45º F) have been above average for a third year in a row. Fog was a little less noticeable with the dry February, but frosty mornings were frequent. Chilling hours totaled 1,085, compared to the long term average of about 800 hours (Fruit and Nut Center, UC Davis). Grapes require few chilling hours but a "good chill" may help encourage strong and uniform budbreak.

AVERAGE DATE OF BUDBREAK*

LODI CHARDONNAY 1986-2012

YEAR	MAR DATE	YEAR	MAR DATE	YEAR	MAR DATE
1986	9	1996	15	2006	15
1987	26	1997	1	2007	14
1988	13	1998	14	2008	12
1989	17	1999	25	2009	20
1990	23	2000	17	2010	15
1991	21	2001	17	2011	17
1992	13	2002	13	2012	15
1993	22	2003	10	2013	19
1994	14	2004	13		
1995	5	2005	2		

* Budbreak = 10% of buds at ½ inch shoot length or first leaf unfolding psv

There were some scattered frost events in 2008, 2009, and 2011. 2013 might bring more spring frosts. Here is a review of what we know about how soil management practices can affect frost.

Firm bare ground, that is wet	+2º F
Firm bare ground, that is dry	no difference
Freshly disked soil	-2º degrees colder
High cover crop (24 to 30 inches)	-2º to 4º (possibly 6 to 8º)
Low cover crop (less than 24 inches)	-1º to 3º degrees colder
Mowed cover crop	-½º F

Kissler & Rough • UCCE San Joaquin County

WEEDS

Similar to last year, weed growth appears to be below average as temperatures have been cold with several foggy days and many cold, frosty mornings. Good weed control should be achievable with some normal rainfall patterns. This year, Rely (glufosinate) is not available, due to huge demand from field crops in the Midwest and East. Fortunately there are some newer materials available. To avoid resistance, rotation of herbicides for particular weed species continues to be important. If you have questions, check in at www.ipm.ucdavis.edu or www.wric.ucdavis.edu .

INVASIVE PESTS

European Grape Vine Moth (EGVM) was eradicated in San Joaquin County. Thanks are due to Scott Hudson, the San Joaquin County Ag. Commissioner and his staff, who has done a lot of work and have been helped by growers to continue with the ongoing vigil for new pests.

Light Brown apple Moth (LBAM) continues to spread and is scattered around the County. The good news is that it's easy to control. It is a Lepidoptera pest and is similar to the Omnivorous Leaf Roller (OLR). LBAM seems to be susceptible to biological control from native beneficial insect predators and parasites. The pest is still under a quarantine protocol, so if you are within one mile of a commercial nursery you probably are in a quarantine zone. If you have not been contacted by the Ag. Commissioner's office, you should check.

Spotted Wing Drosophila (SWD) is everywhere, but it does not seem to do well in vineyard situations. At this point it is more a concern for cherry growers. If you do have cherries next door, it might be good to keep an eye out for excessive Sour Rot.

A new leafhopper has arrived in California and is also reported in Lodi and the greater San Joaquin County: the Virginia Creeper Leafhopper (VCLH). As its name suggests, it is from Virginia and it lives on ivy or other creepers. It does well on many crops. There is hope that it is not much different from the regular Grape Leafhopper (GLH) or the Variegated Grape Leafhopper (VGLH), and that it will be easily controlled by beneficials and sprays.

If you don't receive the UCCE office newsletter, Field Notes, you might want check out the February 2013 issue for a discussion on global warming, climate change, and extreme weather.

Good luck in 2013.

Upcoming events and news

ZINFEST : MAY 17TH – 19TH

Join us for the ZinFest Wine Festival at Lodi Lake where over 40 Lodi Wineries will be sampling their best Zinfandels. Tickets are $45 in advance; $55 at the gate. Ticket sales began on March 1st and can be purchased at zinfest.com or by calling the Lodi Wine & Visitor Center at (209)365-0621. Interested in volunteering? Please contact the Commission offices.

LODI WINEFEST AT SAN FRANCISCO GIANTS: AUGUST 9TH

Save the date! The Winegrape Commission is sponsoring a wine tasting preceding the Giant's August 9, 2013 home game against the Baltimore Orioles. The two hour tasting takes place on Seals Plaza next to the ball park. The Winegrape Commission will be organizing a bus trip for Lodi growers to attend the tasting and game. More information to follow.

LOCA THOUGHTS WITH BEN KOLBER

Visit the Lodi Winegrape Commission's website to view the new LoCA Thoughts video series - your official guide to all things Lodi wine! Watch as Lodi grower Ben Kolber, the official spokesman of the series, explores the "crazy" side of wine and reveals some LoCA Thoughts on all of your wine-related questions and debunks some common myths about storing, pouring, cooking with, and tasting wine.

LoCA
THE WINES OF LODI CALIFORNIA

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