

CONSERVATION INNOVATION GRANTS FINAL REPORT

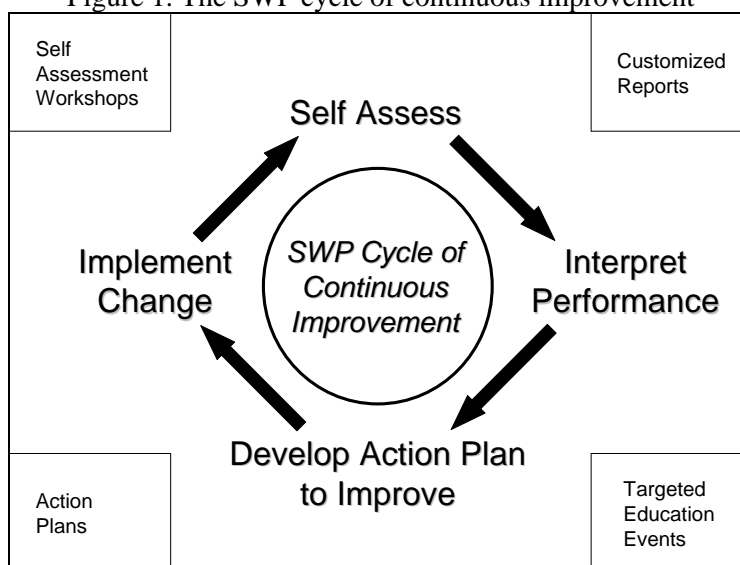
Grantee Name: California Sustainable Winegrowing Alliance	
Project Title: California Code of Sustainable Winegrowing Practices – Innovations for Air and Water Quality (NRCS CIG 68-3A75-4-166)	
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Period Covered by FINAL Report: October 1, 2004 – January 31, 2008 (includes no-cost extension)	

Summary of Project Activities:

The California Sustainable Winegrowing Program (SWP) began in 2001 as an initiative to promote and adopt “ground to bottle” sustainable practices for producing grapes and wine. Leadership is provided by the California Sustainable Winegrowing Alliance (CSWA), a non-profit organization represented by the two major statewide associations affiliated with California grapes and wine – Wine Institute and the California Association of Winegrape Growers.

The CSWA advocates winegrowing operations that balance the three E’s or principles of sustainability – **E**nvironmentally Sound, **S**ocially **E**quitable, and **E**conomically Feasible. To date, the SWP does not include performance-based certification. Instead, the program relies on its iterative self-improvement model (Figure 1), the “cycle of continuous improvement,” designed to ensure confidentiality, extensive voluntary participation, and collective progress along the continuum of sustainability. The cycle consists of self-assessment, the interpretation of performance, action planning, and the implementation of change. An extensive partnership network helps facilitate these interrelated activities.

Figure 1. The SWP cycle of continuous improvement

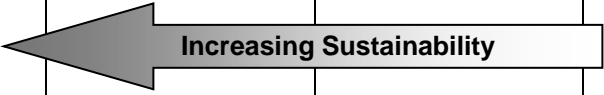


The cycle’s centerpiece is the *Code of Sustainable Winegrowing Practices Self-Assessment Workbook* covering a broad range of farming and winemaking practices in 14 chapters – Viticulture, Soil Management, Pest Management, Vineyard Water Management, Winery Water Management, Wine

Quality, Ecosystem Management, Energy Efficiency, Waste Management, Environmentally Friendly Purchasing, Material Handling, Human Resources, Neighbors and Communities, and Air Quality. The Air Quality chapter was developed with funds from this Conservation Innovation Grant (CIG). Each chapter includes criteria (specific management areas) for evaluating practices using a four-category measurement system (Table 1). Participants submitting assessments receive reports displaying their performance against regional and statewide averages. Individualized reports constitute the framework for evaluation and improvement. Follow-up targeted education complements assessment and action planning by emphasizing areas most needing improvement. Peer-to-peer education and presentations by external experts is used to extend information at field meetings, workshops, and seminars.

Table 1. Criterion 16-6 from the Air Quality chapter exemplifying the four-category measurement system

AIR QUALITY				
Criteria	Category 4	Category 3	Category 2	Category 1
16-6 Pesticide Stewardship	I never use fumigants* <i>And</i> I follow recommended practices for dust (e.g., sulfur) and liquid applications to minimize PM10 and drift** <i>And</i> I am familiar with and avoid use of pesticides associated with higher VOC emissions (see Box 16-13) <i>And</i> Applicators are trained about pesticide issues relevant to air quality and training includes written material.	I never use fumigants* <i>And</i> I follow recommended practices for dust (e.g., sulfur) and liquid applications to minimize PM10 and drift** <i>And</i> I have some understanding of pesticide products associated with higher VOC emissions (see Box 16-13).	I only use fumigants to address verified biological problems* <i>And</i> I follow recommended practices for dust (e.g., sulfur) and liquid applications to minimize PM10 and drift**.	I choose and apply pesticides without considering impacts to air quality other than following legal requirements.



This CIG project fit into the broader program by funding elements to increase the adoption of practices for improving air quality and water conservation and quality (Attachment A). Objectives were: 1) develop, print, and refine an Air Quality chapter for the workbook, 2) modify, upgrade, and support SWP software to determine EQIP eligibility, 3) establish, maintain, and enhance demonstration vineyards, 4) create and disseminate targeted education materials and conduct action-plan workshops, and 5) develop methods for ascertaining and then document CIG impacts. The following details activities by objective during the course of the project, October 1, 2004 – January 31, 2008 (includes no-cost extension).

Objective 1– Develop, print, and refine an air quality chapter for the self-assessment workbook.

The Air Quality chapter was completed in September 2005. The finished content is a result of vast collaboration among CSWA staff and consultants, external technical experts (Attachment B), and the Sustainable Winegrowing Joint Committee – a group of 50 experienced and highly respected growers and vintners. The chapter includes 10 key criteria and associated practices categorized by increasing sustainability, 17 educational boxes, numerous resource links, and other guidelines and information to

measure performance and help growers and vintners exceed regulatory compliance in mitigating emissions of criteria air pollutants and greenhouse gases. The 10 air quality criteria are listed below.

- 16-1 Planning, Monitoring, Goals, and Results
- 16-2 Vineyard Floors
- 16-3 Unpaved Surfaces – Roadways and Traffic and Equipment Staging Areas
- 16-4 Irrigation
- 16-5 Pest Management Strategy
- 16-6 Pesticide Stewardship
- 16-7 Agricultural and Winery Chemicals and Materials
- 16-8 Energy Sources and Efficiency
- 16-9 Transportation
- 16-10 Agricultural Burning

Paper copies of the Air Quality chapter were used for grower and vintner assessments during September 2005 to November 2006. During this interval, the chapter content was reviewed and refined to produce a second edition. The refined chapter was incorporated into the second edition of the *Code of Sustainable Winegrowing Practices Self-Assessment Workbook* released in November 2006 and the web-based assessment and reporting system (via www.sustainablewinegrowing.org) launched in December 2006. CIG funds supported the production of the first and second editions of the Air Quality chapter; production and printing of the second edition of the workbook; and the design, development, and implementation of the online system.

Objective 2 – Modify and support the SWP software and reporting process to enable winegrape growers to simultaneously determine EQIP eligibility based on NRCS requirements.

A significant challenge was to modify the SWP assessment and reporting software so workbook criteria could be linked to NRCS practice standards. This was achieved through partnership with California NRCS leads Diane Holcomb (NRCS State Resource Conservationist), Daniel Mountjoy (NRCS Assistant State Conservationist – Field Operations), Rita Bickel (NRCS State Conservation Agronomist), and other NRCS regional and county leads. A reporting option was developed and is being used to align NRCS practice standards with relevant SWP assessment criteria ranked by grower performance. This advance in customized reporting benefits NRCS and CSWA by highlighting NRCS support and technical capabilities, increasing awareness and use of EQIP cost-share, and simplifying and streamlining EQIP (and potentially CSP) application and conservation planning processes. Use of this reporting option enables growers to rapidly adopt practices to protect natural resources and progress their performance in sustainability.

Key to increasing participation in and the value of the SWP and its cycle of continuous improvement has been the integration of second edition workbook content, the assessment and reporting software, and supplemental educational information and links into an interactive, web-based format (Figures 2-5). The new web-based system provides participants with a user-friendly and rapid means to assess and quantify their performance (including comparisons among blocks/vineyards or years), secure additional information and assistance (e.g., applicable NRCS practice standards and incentive programs), and develop and share action plans.

Figure 2. New online environment



Figure 3. Online self-assessment

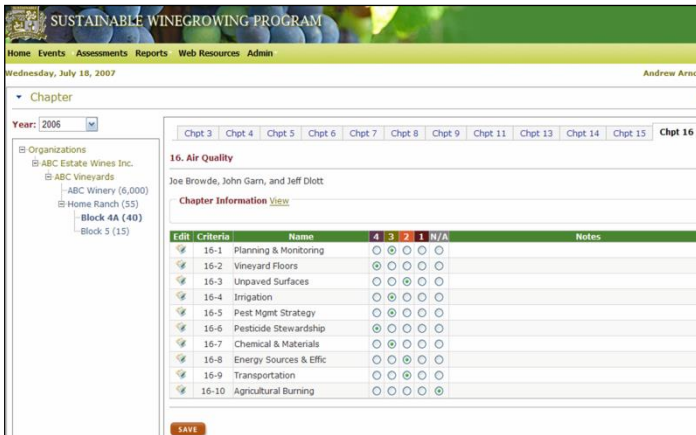


Figure 4. Online reporting of performance

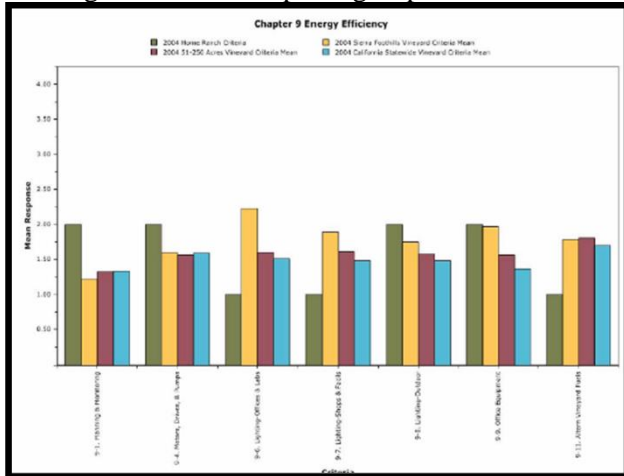


Figure 5. Online linking NRCS practices to SWP criteria

NRCS Practices and Associated SWP Criteria			
Year	2006		
Vineyard/Block or Winery Name	Block 4A		
County	Sonoma		
NRCS Practice	SWP Criteria	SWP Ranking	Ranking Description
311-Alley Cropping	3-19. Habitat Conservation	3	During vineyard establishment and/or development, habitat was impacted but buffers of 30 or more feet were maintained to minimize the disruption.
	3-20. Habitat Creation	3	Some native plants were established and resident vegetation was allowed to grow in non-crop areas (e.g., fence lines, ditchbanks).
	16-2. Vineyard Floors	3	I am knowledgeable about soil management practices for mitigating airborne dust and PM10. And I implement a soil conservation plan that includes cover cropping, reduced tillage, and one or more other practices.
322-Channel Vegetation	3-19. Habitat Conservation	3	During vineyard establishment and/or development, habitat was impacted but buffers of 30 or more feet were maintained to minimize the disruption.
327-Conservation Cover	3-19. Habitat Conservation	3	During vineyard establishment and/or development, habitat was impacted but buffers of 30 or more feet were maintained to minimize the disruption.
	3-20. Habitat Creation	3	Some native plants were established and resident vegetation was allowed to grow in non-crop areas (e.g., fence lines, ditchbanks).

Objective 3 – Establish, maintain, and enhance air and water quality demonstration vineyards throughout California to showcase innovative technologies and practices featured in the workbook.

Nineteen demonstration vineyards were established across California’s winegrowing regions (Table 2) and used as venues and models for showcasing and discussing vineyard practices and partnership opportunities (EQIP, CSP, and other conservation options and agreements) related to water and/or air protection. Displayed technologies and practices corresponded to those detailed as more sustainable in

the workbook. Demonstration vineyards were positioned based on regional concerns and needs (Attachment C), e.g., impaired watersheds, or non-attainment areas for the criteria air pollutants ozone and/or particulate matter (PM10/2.5). The number of demonstration sites increased over time to ensure a wide geographical distribution of sites, increase the diversity of practices/technologies shown, and maximize project exposure and impact.

Over the course of the project, 22 field meetings targeting air and/or water protection were held at demonstration vineyards, where grower-cooperators displayed and characterized their sustainable practices. Additionally, at inside venues (workshops and seminars), cooperators served as spokespersons to champion sustainability and describe specific practices for protecting natural resources, especially air and water.

Objective 4 – Create targeted education materials and facilitate action-plan workshops throughout California (utilizing demonstration vineyards) to encourage widespread adoption of recommended practices related to air and water quality.

Numerous preexisting materials relevant to air and water protection were distributed widely at educational events. These materials include NRCS technical sheets, California Department of Pesticide Regulation handouts about air quality and pesticides, regional water board and water quality coalition publications, Coalition for Urban and Rural Environmental Stewardship pamphlets, and other pertinent compositions.

The most important educational tools developed and used during the project are the second edition of the self-assessment workbook and the associated online assessment and reporting system. For the workbook, additions and improvements relevant to water and air issues were made throughout its many chapters, criteria, practices, educational boxes, and links. Besides the Air Quality chapter, the second edition includes a new criterion and educational box for mitigating erosion from roads, ditches, and culverts and enhanced resource sections for air and water quality. All workbook content is incorporated into the online system, with direct links to online resources for additional information. These two key achievements continue to generate enthusiasm, further increasing grower and vintner exposure to and the adoption of more sustainable practices.

Other educational materials developed using project funds (Attachment D) include three trade articles, one conference paper, and the *2006 California Wine Community Sustainability Progress Report*. The trade articles are “Improving Air Quality” in *Practical Winery & Vineyard* and “Characterizing the California Sustainable Winegrowing Program” and “Air Quality – The Latest Frontier for Sustainable Winegrowing” in *CAPCA Adviser*. “Application of a Behavioral Change Model for Improving the Sustainability of California Winegrowing” was prepared for the 2007 National Conference on Agriculture and the Environment (Monterey, CA). These compositions detail the CIG project and specific practices for protecting natural resources and were distributed widely to growers and other agriculturalists across California and nationally. The *2006 California Wine Community Sustainability Progress Report*, released at a press conference on December 7, 2006, highlights progress by the SWP and characterizes the CIG project and achievements.

Over the course of the project, 74 events (field meetings, workshops, and seminars) with an estimated 3,861 attendees (mostly growers and pest control advisors) were held across California’s winegrowing regions that involved targeted education about issues and practices relevant to air and water protection (Table 2). Topics included air and water laws and regulations; road design and maintenance; vineyard and winery energy efficiency; alternative energy sources (e.g., biodiesel and solar) and low-emission engines; carbon sequestration; diesel engine upgrades and conversions; alternatives to burning; customized cover cropping and other vegetative enhancements; low-drift and targeted canopy sprayers;

environmentally friendly weed and vineyard floor management equipment; stream and riparian area restoration and management; buffers; filter strips; integrated pest management tactics and pesticide characteristics; nutrient analyses and decision making; and EQIP, CSP, and other incentive programs for natural resource protection.

The numerous partners involved in extending information at events include NRCS, Sustainable Conservation, University of California Cooperative Extension, California State University, farm bureaus, non-government organizations, private companies, agricultural consultants, and experienced growers and vintners. Attachment E includes agendas from some of these events.

Table 2. Targeted educational events for air and/or water protection

Region	Targeted Education Events		Number of Events	Number of Attendees
	Counties	Demonstration Vineyards		
North Coast	Sonoma Lake Napa Mendocino	Clos du Bois Vineyards (Geyserville) Lagomarsino Estate (Healdsburg) Bloomfield Ranch (Sebastopol) Dehlinger Winery (Sebastopol) Benziger Winery (Glen Ellen) Crimson Hill Vineyard (Lower Lake) Adobe Creek Ranch (Finley) Page-Nord Vineyard (Napa) McNab Ranch (Ukiah)	36	1,718
Central Coast	Monterey San Luis Obispo Santa Barbara		9	342
Northern Interior	San Joaquin	Bokisch Ranch (Victor) McManis Vineyard (Ripon)	7	283
Sierra Foothills	Amador		1	14
S Francisco Bay	Contra Costa Santa Clara Alameda		4	123
Central Valley	Stanislaus Madera Fresno Tulare	Modesto Jr College (Modesto) Yonan Ranch (Keyes) Schafer Ranch (Madera) Fasi Ranch (Madera) Red Rock Ranch (Five Points) California State University (Fresno) Shannon Ranch (Dinuba) Shannon Ranch (Visalia)	17	1,381

Objective 5 – Develop methods and document project impacts through the collection and reporting of results.

The 10 criteria and associated metrics for the Air Quality chapter were developed to measure grower and vintner baseline performance and progressive adoption of sustainable practices for protecting air. These criteria, metrics, and supportive educational information were incorporated into the second edition of the workbook and the web-based system. The new erosion criterion (4-16 Erosion from Roads, Ditches, and Culverts) complements the original 45 criteria relevant to water conservation and quality for vineyards from workbook chapters 3 (Viticulture), 4 (Soil Management), 5 (Vineyard Water Management), 6 (Pest Management), and 8 (Ecosystem Management). Together, these 46 criteria (Figures 6a-b) provide a broad coverage of recommended grower practices for conserving and improving the quality of water. During the course of the project, 45 self-assessment workshops were conducted that included assessments against the air- and water-related criteria. Many other growers and vintners assessed their operations outside of workshops using the online system. The new workbook and online system continue to be used to facilitate the collection of self-assessment data and reporting of results.

To document project impacts on grower performance for the water-related criteria, assessment data collected before (2002-04; 661 assessed vineyards/blocks by 484 vineyard organizations over 131,990 acres) and after (2004-08; 408 assessed vineyards/blocks by 264 vineyard organizations over 86,332 acres) the start of the CIG project were compared.

Performance increased for 39 of the 45 original criteria (Figures 6a-b). Moreover, greater increases were noted for many criteria that include practices addressed during targeted education events – 4-1 Petiole Analysis (8%); 4-4 Nutrient Management (10%); 4-5 Nitrogen Management (6%); 4-12 Non-Point Source Pollution Prevention (7%); 4-14 Cover Crops and Soil Quality (9%); 5-3 Off-Site Water Movement (5%); 5-7 Flow Meters (18%); 5-10 Evapo-transpiration (22%); 6-4 Use of Reduced-Risk Pesticides (6%); 6-34 Pesticide Drift (6%); 8-3 Water Cycle (7%); 8-4 Nutrient/Mineral Cycles (14%); 8-8 Watershed Management (7%); 8-9 Enhancing Habitat by Vegetation Management (12%); 8-18 Wildlife and Pesticides (6%); and 8-20 Sensitive Species and Collaboration with Agencies (15%).

Data collected before the CIG project (2002-04) also were used to establish the initial statewide benchmarks in the *California Wine Community Sustainability Report 2004*. This report set a statewide goal of 20% improvement by 2009 for workbook criteria averaging less than 3 (1 to 4 scale; 4 is highest). The quantified improvements in grower performance for the water-related criteria noted here substantiate marked progress towards the 2009 goal and the positive impact of the targeted education.

From 2005 to 2008, a total of 224 vineyard organizations assessed 357 vineyards/blocks over 83,497 acres against criteria from the Air Quality chapter. Collected data were used to benchmark statewide grower performance (Figure 7). Certainly, the project’s targeted education in air quality during this same interval affected results. Performance was highest for criteria associated with vineyard floor management (16-2), irrigation operations (16-4), pest management (16-5 and 16-6), and agricultural burning (16-10). However, results indicate that improvement is warranted for all criteria, especially 16-1 Planning, Monitoring, Goals, and Results; 16-8 Energy Sources and Efficiency; and 16-9 Transportation. The CSWA will apply these results to target future educational needs.

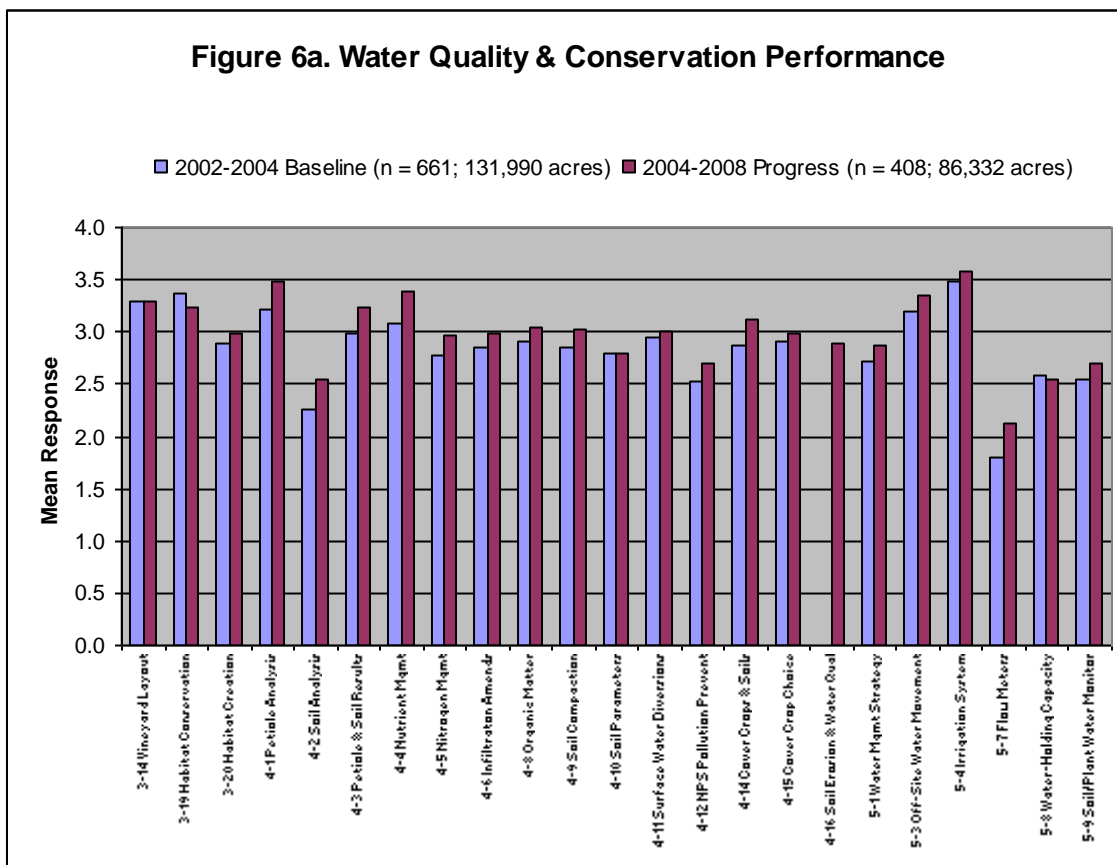


Figure 6b. Water Quality & Conservation Performance

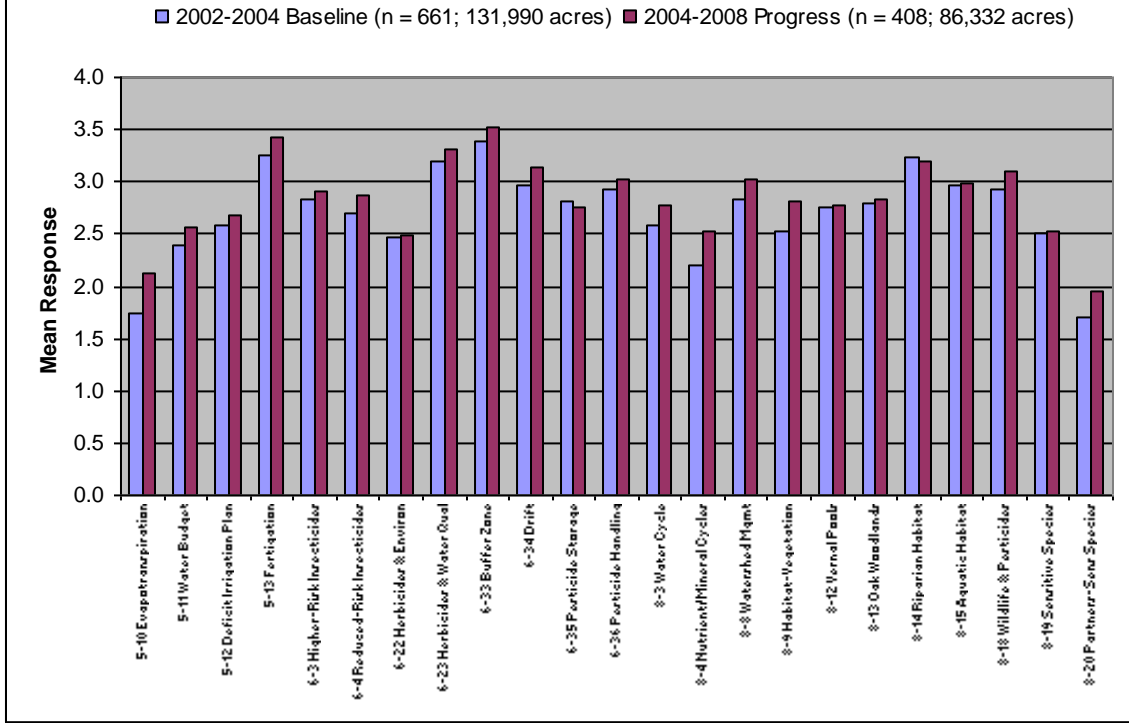
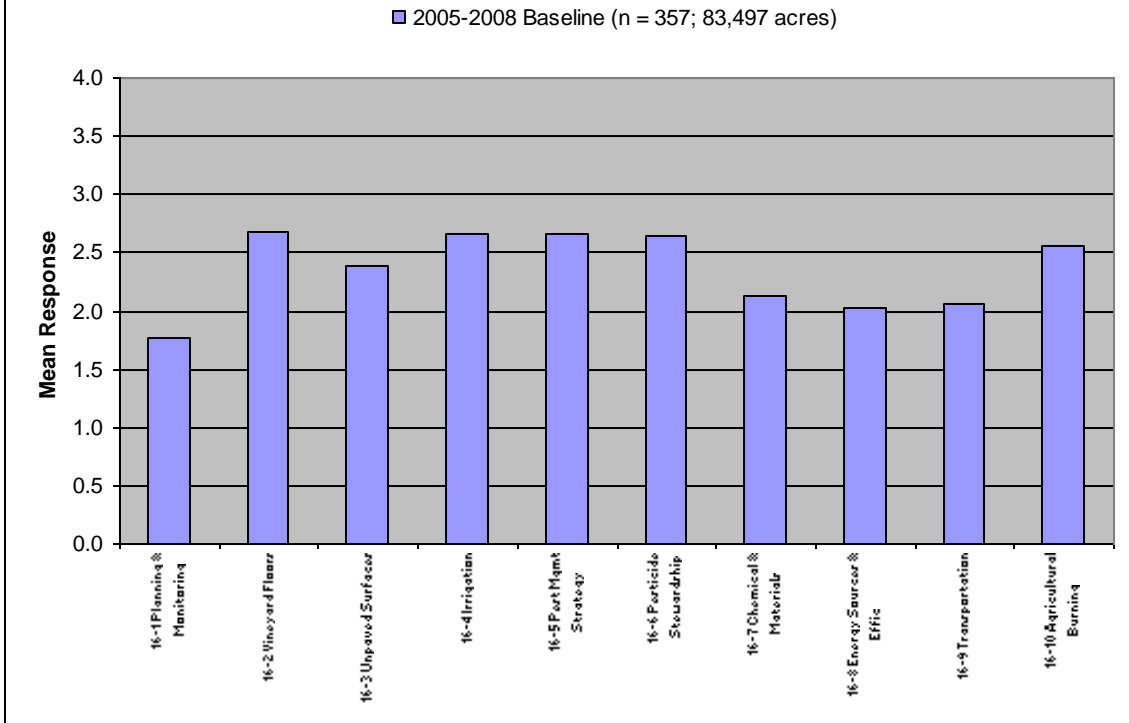


Figure 7. Air quality performance



Significant Project Results:

- Composition, publication, and application of the ground-breaking Air Quality chapter for the *Code of Sustainable Winegrowing Practices Self-Assessment Workbook* (objective 1)
- Design, development, and implementation of the online self-assessment and reporting system, including a reporting option that aligns SWP assessment criteria with NRCS practice standards and EQIP (and possibly CSP) cost-share opportunities (objective 2)
- Establishment and use of 19 demonstration vineyards (with grower spokespersons) for extension of cost-effective information for increasing the adoption of technologies and practices relevant to air and water protection (objective 3)
- Development, distribution, and application of the second edition of the *Code of Sustainable Winegrowing Practices Self-Assessment Workbook*, including a refined Air Quality chapter; a new criterion and information for erosion from roads, ditches, and culverts; improved educational links; and other updated content (objective 4)
- Conduct of 74 targeted education events (field meetings, workshops, and seminars) with 3,861 attendees for showcasing and discussing specific practices pertinent to air quality and water conservation and quality (objective 4)
- Composition and publication of three trade articles, one conference paper, and the *2006 California Wine Community Sustainability Progress Report* that characterize the project and its achievements (objective 4)
- Conduct of 45 self-assessment workshops to collect data for documenting grower and vintner performance against criteria relevant to air and water protection (objective 5)
- Documentation of improved grower performance for 39 of 45 water-related criteria with greater increases noted for many criteria addressed by targeted education (objective 5)
- Benchmarking of grower performance against air quality criteria to highlight strengths and target post-project educational needs (objective 5)

Conclusion and the Transferability of Results:

Through this CIG project, NRCS made an investment to improve air quality and water conservation and quality, as affected by California winegrowing. Significant project activity resulted in marked accomplishments associated with this goal, e.g. the production of the second edition of the *Code of Sustainable Winegrowing Practices Self-Assessment Workbook* with the ground-breaking Air Quality chapter and the conversion to an online self-assessment and reporting system that includes a reporting option for aligning SWP and NRCS practices. The availability and use of the new workbook and online system, combined with value-added targeted education and self-assessment activities, generated enthusiasm among California's winegrowing community, extensive program participation, and an increased appreciation of SWP benefits. Most importantly, by applying elements of the SWP cycle of continuous improvement to air and water protection, grower performance improved for most self-assessment criteria pertinent to water conservation and quality. This achievement substantiates the use of this cycle for inducing change and as a "transferable" voluntary self-improvement model for other agricultural commodities pursuing sustainable agriculture and natural resource conservation. CSWA will direct future targeted education to improve grower performance against the benchmarks established here for the air quality criteria. As evidenced by this project, the CSWA and the California winegrowing community continues to demonstrate leadership in sustainable agriculture by balancing the economics of producing exceptional grapes and wine with high standards for environmental quality, human health, and social responsibility.

References:

- Browde, J. 2007. *Characterizing the California Sustainable Winegrowing Program*. CAPCA Adviser.
- Browde, J. 2007. *Improving Air Quality*. Practical Winery & Vineyard.
- Browde, J. 2007. *Air Quality: The Latest Frontier for Sustainable Winegrowing*. CAPCA Adviser.
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- The California Association of Winegrape Growers*. Sacramento, CA. www.cawg.org.
- The California Sustainable Winegrowing Alliance*. San Francisco, CA. www.sustainablewinegrowing.org
- California Wine Community Sustainability Report*. 2004. California Sustainable Winegrowing Alliance.
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- The Wine Institute*. San Francisco, CA. www.wineinstitute.org.

In the space below, provide the following in accordance with the Environmental Quality Incentives Program (EQIP) and CIG grant agreement provisions:

- a. A listing of EQIP-eligible producers involved in the project, identified by name and social security number or taxpayer identification number;
- b. The dollar amount of any direct or indirect payment made to each individual producer or entity for any structural, vegetative, or management practices. Both biennial and cumulative payment amounts must be submitted.
- c. A self-certification statement indicating that each individual or entity receiving a direct or indirect payment for any structural, vegetative, or management practice through this grant is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the Farm Bill.

As a statewide project, with a target audience of thousands of winegrape growers, it is difficult to list or even estimate the number of EQIP-eligible producers that were involved in the project. Determinations of the eligibility status of grower-cooperators showcasing the demonstration vineyards could be made, although the requirement that these growers must be EQIP eligible has been waived by the CIG National Program Manager. No direct or indirect payment from this grant has been made to individual producers or entities for any structural, vegetative, or management practices.

Project Funding Received and Expended - final reimbursement (SF-270) and financial report (SF-269) submitted Feb 2008

Expenditures Summary (across objectives)

NRCS CIG 68-3A75-4-166

**amended 9-04-07*

	Final Reimburse Interval 10/01/07 - 1/31/08				Cumulative through 1/31/08				*3-Yr Project Budget Forecast			
	NRCS CIG	SWP Cash Match	SWP In-Kind	Total	NRCS CIG	SWP Cash Match	SWP In-Kind	Total	NRCS CIG	SWP Cash Match	SWP In-Kind	Total
Personnel	23,097.58		32,631.25	55,728.83	135,265.00		640,646.59	775,911.59	132,000.00		270,000.00	402,000.00
Benefits												
Travel	1,308.39	223.10		1,531.49	7,964.31	70,777.28		78,741.59	10,000.00	10,800.00		20,800.00
Equip												
Supplies	2,192.70			2,192.70	13,372.85			13,372.85	15,000.00			15,000.00
Contract	7,342.50	380.37		7,722.87	185,821.73	286,594.08		472,415.81	188,000.00	254,200.00		442,200.00
Construct												
Other	2,017.99	83.48	8,043.75	10,145.22	132,571.22	75,090.88	130,437.54	338,099.64	130,000.00	30,000.00	150,000.00	310,000.00
TOTAL	35,959.16	686.95	40,675.00	77,321.11	474,995.11	432,462.24	771,084.13	1,678,541.48	475,000.00	295,000.00	420,000.00	1,190,000.00

Attachment A – CIG Project Action Plan and Timeline (excludes no-cost extension)

Action Item	2004	2005	2005	2005	2005	2006	2006	2006	2006	2007	2007	2007
	Q4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q3
Disseminate SWP Workbook												
Facilitate Introductory SWP Self-Assess Workshops						intro	self	assess	air			
Publish CA Sustainability Report												
Cultivate Partnerships												
Conduct IPM Action-Plan Workshops												
Obj 1 - Develop Air Quality Chapter (yr 1)												
Obj 1 - Print Air Quality Chapter (yr 2)												
Obj 1 - Review & Refine Air Quality Chapter (yr 3)												
Obj 2 - Modify SWP Software to Determine EQIP Eligibility (yr 1)												
Obj 2 - Provide Upgrades & Support for This Software (yr 2)												
Obj 2 - Provide Upgrades & Support for This Software (yr 3)												
Obj 3 - Estab. H2O & Air Demo Sites (showing wrkbk practices; yr 1)												
Obj 3 - Maintain & Enhance Demo Sites (yr 2)												
Obj 3 - Maintain & Enhance Demo Sites (yr 3)												
Obj 4 - Create targeted education materials (distrib @wkskops; yr 1)												
Obj 4 - Conduct H2O Quality Action-Plan Workshops (yrs 2 & 3)												
Obj 4 - Conduct Air Quality Action-Plan Workshops (yr 3)						intro	self	assess	air			
Obj 5 - Develop methods (software) to document Proj Impacts (yr 1)												
Obj 5 - Document Impacts (self assess & progress reporting) (yr 2)												
Obj 5 - Document Impacts (self assess & progress reporting) (yr3)												

Attachment B – External Reviewers for Air Quality Chapter

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Attachment C – Selection Criteria for Demonstration Vineyards – Water and/or Air Quality

*Goal – Establish demonstration vineyards for purposes of showcasing, characterizing, and discussing a diversity of practices and technologies detailed in the workbook for protecting water and air quality

Details and Selection Criteria

- A minimum of 10 demonstration vineyards must be established across California – at least 5 must demonstrate key practices relevant to water quality and 5 to air quality.
- ~~Host grower cooperators must be eligible for NRCS EQIP program.~~
- Demonstrated practices should be advocated in the self-assessment workbook or be otherwise innovative and of interest.
- No restriction in number of total sites or sites per region, but priority is to position sites in impaired watersheds or air basins and to display cost-effective practices or practice combinations reflective of regional and geographical diversity.
- Single vineyards can be used to demonstrate recommended practices for both air and water quality, as appropriate.
- No SWP funds currently are available to support research activities or installation of practices or technologies, although funding may be available through EQIP/other cost-share programs.
- Regional partners (grower/winery associations, local NRCS, RCDs, etc.) should assist in the selection process to ensure relevance of practices to regional water and/or air issues and to complement and enhance their activities.
- Grower-cooperators must be willing to host educational events at demonstration sites and share information about practices/technologies during events and for other education and outreach purposes.
- Sites should be easily accessible and have a high probability of generating interest and attracting growers.

Attachment D – Selected Educational Materials

Air Quality – The Latest Frontier for Sustainable Winegrowing

**BY Joe Browde, Project Manager
California Sustainable Winegrowing Alliance**

Adapted from Joe Browde's article in the March/April 2007 edition of Practical Winery & Vineyard

When Senate Bill 700 became California state law in 2003, it ushered in an era of significant change for California agriculture. The law mandated that agriculture no longer is exempt from provisions of the 1990 Federal Clean Air Act and has resulted in an intense scrutiny of sources of and means to mitigate problematic air emissions from farms, dairies, and other agricultural operations.

The California Sustainable Winegrowing Alliance (CSWA), through its proactive Sustainable Winegrowing Program, has extended its industry-driven sustainability outreach to growers and vintners to include air quality and practices and technologies that meet and exceed regulatory compliance in reducing air emissions.

Air emissions and agriculture

Two important categories of air emissions affected by agriculture are: 1) the criteria air pollutants and 2) greenhouse gases. The criteria or common air pollutants (ground-level ozone, nitrogen dioxide, particulate matter, sulfur dioxide, carbon monoxide, and lead) are regulated by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB).

The EPA establishes nationwide standards for criteria air pollutants based on human health effects. CARB generally adopts more restrictive standards for these pollutants to meet the requirements of the California Clean Air Act, although current regulations are focused on attaining national standards. Geographic areas in which the level of a criteria air pollutant exceeds national and/or state standards are classified as non-attainment areas.

There are 15 air basins within California that are designated as being in attainment or non-attainment status for each criteria air pollutant. Regional or county air districts associated with non-attainment areas for one or more pollutants must prepare management plans that detail means for ensuring future compliance with national standards. Regional or county plans are incorporated into the State Implementation Plan submitted to the EPA describing how California will attain and maintain national standards.

The two criteria pollutants associated with agriculture and non-attainment status in several winegrowing regions in California are particulate matter and ozone.

Airborne particulate matter is a complex mixture of miniscule solid and liquid particles. Particles less than or equal to 10 microns in diameter are known as PM₁₀ and pose serious respiratory and heart-related concerns, because they can migrate past the nose and throat and penetrate the lungs. Ten microns is about one-seventh the diameter of a human hair.

The PM₁₀ spectrum is subdivided into “coarse” and “fine” particles. Coarse particles range between 2.5 and 10 microns and often are produced during crushing or grinding operations. Most important for winegrowers, however, are fugitive dust particles (such as dust from vineyards or roads) stirred up by wind, vehicles, or equipment. Fine particles (PM_{2.5}) are less than or equal to 2.5 microns and are directly emitted during combustion of fossil fuels (especially petroleum diesel) and wood or produced by atmospheric conversion of gaseous pollutants. PM_{2.5} exposure can lead to significant health concerns.

Ground-level ozone occurs in the troposphere, the atmospheric layer closest to earth. It is important to distinguish this problematic ozone from the beneficial ozone that provides ultraviolet light protection in the more distant stratosphere. Ground-level ozone is formed through atmospheric reactions of nitrogen oxides (NO_x) with volatile organic compounds (VOCs) in the presence of sunlight. NO_x are produced during the combustion of fossil fuels, especially petroleum diesel. Agricultural sources of VOCs include the handling and combustion of fossil fuels, certain pesticides, winery fermentation and storage processes, and livestock production.

The highest concentrations of ground-level ozone occur in the summer and fall during hot and sunny conditions ideal for ozone formation. Ozone is linked to various respiratory ailments. Moreover, ozone can

adversely affect crops and other vegetation by decreasing growth and yield and increasing susceptibility to pests and other stresses.

Emissions of greenhouse gases and their effects are a high profile issues on the global scale. Carbon dioxide (CO₂) and other greenhouse gases emitted during the combustion of fossil fuels are associated with global warming and related climatic ramifications, such as rising sea levels and altered precipitation patterns. Some agricultural activities produce greenhouse gases, including burning, soil tillage, livestock production, and excess application of fertilizers. It is essential to note, however, that agriculture can also provide a significant benefit by sequestering CO₂. Grapevines, cover crops, and other vegetation in and around vineyards and wineries fix CO₂ from the air through photosynthesis and store a portion of the carbon in their tissues.

Industry driven initiatives

The California Sustainable Winegrowing Program (<http://www.sustainablewinegrowing.org>) is a statewide initiative by the winegrowing community to promote “ground to bottle” sustainable practices for producing grapes and wine. Program leadership is provided by CSWA, a non-profit organization consisting of leaders from the two key statewide organizations affiliated with California and winegrowing – Wine Institute and the California Association of Winegrape Growers. The program relies on an extensive partnership network to implement its behavioral change model, the “cycle of continuous improvement,” consisting of voluntary grower and vintner self-assessment, customized reporting, targeted education, and action planning.

The program’s centerpiece is the comprehensive *Code of Sustainable Winegrowing Practices Self-Assessment Workbook* covering a broad range of farming and winemaking practices in 14 chapters. Chapters include relevant criteria for evaluating practices according to a four-category measurement system. Reports are generated that enable participating growers and vintners to quantify and track their performance against regional and state averages and the industry to benchmark and publicly document its progress. Targeted education delivered at workshops and meetings complements assessment by emphasizing areas most needing improvement, according to region-specific (such as the San Joaquin Valley or North Coast) analyses of assessment data. Participants apply understandings from the targeted education and other sources to prepare and execute action plans.

Assessment criteria to improve air quality

Supported by a grant from the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), CSWA and partners developed an Air Quality chapter for the second edition of the self-assessment workbook that includes 10 criteria, 17 side bars with associated educational information, numerous resource links, and other information. Growers and vintners are using this chapter to assess their performance in minimizing particulate matter, ozone precursors (NO_x and VOCs), and greenhouse gases. The 10 criteria and relevant practices for attaining high marks in sustainability are summarized below. Although specifically developed for winegrowers, this chapter and the suggested practices pertain to producers of many other crops in California.

1. Planning, monitoring, goals, and results. The establishment and execution of vineyard and/or winery plans to achieve measurable reductions in problematic emissions is key. Growers and vintners achieving higher levels of sustainability must have specific knowledge of emission sources and types, regularly review updated information on air quality, monitor emission quantities, conduct pertinent employee training, and track emission reductions against annual goals.

2. Vineyard floor management. Dust stirred up from the vineyard floor is a source of PM₁₀. To address some of the poorest air quality in California and reduce PM₁₀, growers in the San Joaquin Valley with 100 or more acres of continuous, or adjacent, farmland must prepare and implement Conservation Management Practices (CMPs) Plans (http://valleyair.org/farmpermits/updates/cmp_handbook.pdf) as mandated by the San Joaquin Valley Air Pollution Control District’s Rule-4550. To achieve the highest level of

sustainability, growers from all winegrowing regions must exceed this regulatory requirement by implementing comprehensive plans that must include permanent or no-till cover crops, no or minimally disruptive under-the-vine tillage, and other soil conservation practices (such as maintaining unfarmed vegetative areas, planting trees and hedgerows, and minimizing equipment passes).

3. Unpaved surfaces – roadways and equipment staging areas. Unpaved surfaces in and around vineyards and wineries are sources of PM10. Growers and vintners reaching higher levels of sustainability must implement soil conservation plans that include effectively timed applications of water or regulatory compliant anti-dust materials and/or more permanent solutions, such as seeding or paving their roads and equipment yards. Furthermore, speed and travel are restricted and employees are trained to minimize dust creation.

4. Irrigation. Growers and vintners need to be aware of relationships between irrigation and air emissions. Much energy is used to pump water resulting in PM2.5, NO_x, VOCs, and CO₂ in amounts that vary with the energy expenditure and source of energy. Practitioners realizing significant reductions in problematic emissions proactively design and manage irrigation systems to expend the least amount of energy and water to meet yield and quality goals. This includes optimizing the efficiency of the pumping plant; maintaining operational efficiency of lines, filters, drip emitters, and other system components; and conserving water (through deficit irrigation, for example). Additional reductions are realized by adjustments made at the power source. This includes replacing or retrofitting old diesel engines with cleaner-burning technology, using lower emission fuels (such as biodiesel, propane, or natural gas), or installing electric motors. The cost of diesel engine replacement may be shared by NRCS through its Environmental Quality Incentives Program (EQIP) and/or by local California air districts through the Carl Moyer Memorial Air Quality Standards Attainment Program. EQIP cost-share information about diesel engine replacement and other practices to protect air is available at <http://www.ca.usda.gov/programs/eqip/2007/statepriorities2007.html>.

5. Pest management strategy. Growers using more sustainable approaches include elements of air protection in their pest management programs. Integrative strategies that first emphasize biological and cultural tactics to maintain pests at tolerable levels generally will reduce tractor passes and pesticide applications. By making fewer tractor passes, growers reduce soil disturbance and PM10 production and limit fuel consumption and emissions of PM2.5, NO_x, VOCs, and CO₂. Growers achieving higher levels of sustainability also base decisions for pesticide applications on economic thresholds and/or weather-based decision indices.

6. Pesticide stewardship. Many active and inert ingredients in pesticide products are sources of VOCs. Moreover, inappropriate applications of some pesticides (such as sulfur dust) can result in drift and PM10 concerns. Each pesticide product has a different capacity to volatilize and produce VOCs and each VOC varies in its potential to form ozone. These processes are also affected by meteorological (air temperature, light intensity, and relative humidity) and physiochemical (pesticide formulation, spray drift potential, spray retention and absorption by foliage or soil) variables. Despite this complexity, growers can take general steps to limit VOCs from pesticides by choosing low VOC products, restricting applications and rates, and ensuring that a high proportion of the applied material reaches the intended target. Excellent efficacy at low rates often is achieved by the use of precision technologies such as electrostatic canopy sprayers or shielded vineyard floor sprayers with remote sensors that enhance on-target deposition, decreasing drift and the potential for increased volatilization. To achieve higher levels of sustainability, growers must avoid use of pesticide formulations with higher estimated VOC contents and follow recommended practices detailed in the workbook to reduce pesticide use, drift, and PM10.

Estimated VOC Content by Pesticide Formulation* (from the California Sustainable Winegrowing Workbook)

Formulation Category	Emission Potential (%)	Formulation Category	Emission Potential (%)
Pressurized products	100.00	Granular/flake	3.70
Emulsifiable concentrates	39.15	Oil	3.47
Solution/liquid (ready to use)	7.30	Wettable powder	1.85
Liquid concentrate	5.71	Dust/powder	1.53
Suspension	5.71	Soluble powder	1.15
Pellet/tablet/cake/briquet	5.18	Dry flowable	1.02
Flowable concentrate	4.80		

*The emission potential is that percentage of the product assumed to potentially contribute to atmospheric VOCs. Understanding the relationship of estimated laboratory emission potentials displayed here to field emission rates and subsequent ozone formation is evolving. Nonetheless, growers should be alert to current understandings and consider limiting use of pesticides with higher estimated potentials, e.g., fumigants and emulsifiable concentrates. Additional information about VOCs and pesticides is available at <http://www.cdpr.ca.gov/docs/pur/vocproj/vocmenu.htm>.

7. Agricultural/winery chemicals and materials. Besides pesticides, other chemicals and materials used by growers and vintners can emit VOCs (such as solvents, paints, and glues). Although used decreasingly, ozone-depleting substances include chlorofluorocarbons, hydrochlorofluorocarbons, halons, methyl bromide, carbon tetrachloride, and methyl chloroform. Growers and vintners implementing higher levels of sustainability execute a plan for chemical acquisition and use that considers and minimizes use of products with higher VOC content, proven or suspected potential to deplete ozone, and greater toxicity.

8. Energy sources and efficiency. Improvements in energy efficiency and the use of alternative energy sources impact air quality and costs. Growers and vintners exhibiting increased sustainability consciously carry out cost-effective plans to conserve electricity; optimize efficiency of power equipment; track and limit fuel consumption; and use biodiesel, solar systems, or other options that reduce reliance on fossil fuels and decrease emissions of air pollutants and greenhouse gases.

9. Transportation. Fuel consumed during transportation can represent a significant portion of the energy budget and air quality footprint. Environmentally and cost-conscious growers and vintners consider and employ means to limit business travel (such as car, truck, airline, and train), set emission reduction goals for transportation, and track and measure progress. Higher levels of sustainable performance also include pertinent employee training.

10. Agricultural burning. Some growers continue to burn prunings, removed vines, and organic waste, thereby increasing problematic emissions. To achieve optimum sustainability, no organic waste is burned in a vineyard and extracted vines and prunings are chipped and utilized as mulch or compost or processed to generate energy. The most proactive growers lead outreach to educate peers about alternatives to burning. To address poor air quality in the Central Valley, the San Joaquin Valley Unified Air Pollution Control District will prohibit burning of most categories of agricultural waste (including removed vines and prunings) by 2010. No vineyard stakes or end-posts treated with the preservative chromated copper arsenate can be burned or chipped but must be disposed at certified Class II or specified Class III composite-lined landfills. Growers in the San Joaquin Valley can check with their local NRCS office about cost-sharing for treated wood disposal.

Next steps

Numerous growers and vintners already have assessed their performance against the 10 criteria in the Air Quality chapter. Many of these participants farm within the San Joaquin Valley, an important non-attainment area for particulate matter and ozone. In addition, CSWA has held many educational events across California to address criteria and practices suggested in this chapter. Use of the second edition of the workbook and the new on-line system for assessment and customized reporting will increase self-assessments for air quality, leading to more intensified targeted education and action plan development.

The CSWA continues to implement the interrelated elements of its cycle of continuous improvement to protect and improve air quality and increase sustainable winegrowing. Collected assessment data will be used to track statewide and regional performance, set goals, and prioritize needs for follow-up targeted education. Future publications will highlight progress made in the adoption of practices for mitigating emissions of particulate matter, ozone precursors, and greenhouse gases. Through the Sustainable Winegrowing Program, CSWA and the California winegrowing community substantiates its lead role in sustainable agriculture by balancing the economics of producing exceptional grapes and wine with high standards for environmental quality, human health, and social responsibility.

Application of a Behavioral Change Model for Improving the Sustainability of California Winegrowing

Joe Browde, Ph.D., and Allison Jordan, M.P.P., California Sustainable Winegrowing Alliance, and Jeff Dlott, Ph.D., SureHarvest

The California Sustainable Winegrowing Program (SWP) began in 2001 as a statewide initiative to promote and adopt “ground to bottle” sustainable practices for producing grapes and wine. Program leadership is provided by the California Sustainable Winegrowing Alliance, a non-profit organization consisting of leaders from the two major statewide associations affiliated with California winegrapes and wine – Wine Institute and the California Association of Winegrape Growers. Funding primarily is provided by these two associations and grants. In-kind contributions from growers and vintners, regional organizations, university personnel, government agencies, and other external partners constitute a large proportion of the total program cost.

In the context of winegrowing, the Alliance advocates farming and winemaking operations that balance the three E’s or principles of sustainability – Environmentally Sound, Socially Equitable, and Economically Feasible. The SWP does not include a third-party certification process that is based on participants surpassing a threshold level of performance according to fixed standards. Instead, the program employs its iterative self-improvement model, the “cycle of continuous improvement,” designed to ensure individual confidentiality, extensive participation, and collective progress along the continuum of sustainability.

For participating growers and vintners, the cycle consists of self-assessment, the interpretation of performance, action planning, and the implementation of change to more sustainable practices. The SWP relies on an extensive partnership network to implement these interrelated activities. Elements of the SWP have been adapted from other programs in California involving sustainable winegrowing, such as those by the Lodi-Woodbridge Winegrape Commission and the Central Coast Vineyard Team. The Alliance collaborates with regional organizations, wineries, and growers to ensure that SWP activities complement and enhance their efforts.

Self-Assessment

The centerpiece of the SWP is its comprehensive second edition of the *Code of Sustainable Winegrowing Practices Self-Assessment Workbook* covering a broad range of farming and winemaking practices in 14 chapters – viticulture, soil management, pest management, water management in vineyards, water use in wineries, wine quality, ecosystem management, energy efficiency, waste management, environmentally friendly purchasing, material handling, human resources, neighbors and communities, and air quality. Each chapter includes relevant criteria (specific management areas) for evaluating practices using a four-category scale (1 to 4; 4 is highest) along with educational boxes, resource links, and other pertinent information.

More than 100 self-assessment workshops have been held across California where growers and vintners evaluated their performance against workbook criteria. Most participants voluntarily submit assessment information for incorporation into the SWP database, enabling them to access customized reports for quantifying and tracking their performance. The collection and analysis of assessment data also allows the winegrowing industry to benchmark and publicly document its collective progress. Individual participant data is kept confidential. As of October 2006, assessment data had been collected from 807 vineyard enterprises assessing 152,799 winegrape acres (29.3% of statewide total) and from 107 winery facilities assessing 114.9 million cases of wine (42.0% of statewide total).

A recent enhancement to the cycle that affects self-assessment is the integration of the workbook content, the SWP assessment and reporting software, and supplemental information and links into a web-based system (www.sustainablewinegrowing.org). This online tool provides growers and vintners with a user-friendly and rapid option to conduct assessments, quantify performance, and secure additional information about sustainable winegrowing.

Interpretation of Performance

Growers and vintners that submit self-assessment data gain access to customized reports that display their performance against regional and statewide averages. Participants using the online system can specify additional analyses, including comparisons of performance over blocks, vineyards, or years. Individualized reports constitute the framework for self-evaluation and improvement. Using these reports, participants determine areas of strength and opportunities for improvement in their production operations.

In addition, the collection and analysis of assessment data supports the interpretation and reporting of performance at statewide and regional levels. The *California Wine Community Sustainability Report 2004* documents statewide results after the initial interval of assessment, identifies areas of strength and for improvement, and establishes a goal of 20% improvement by 2009 for criteria averaging less than 3. The interim *2006 California Sustainable Winegrowing Program Progress Report* highlights progress towards this goal. Likewise, grower and vintner organizations use regional summaries (by county or group of adjacent counties) to interpret and track performance at the regional level.

Action Planning

Planning for improvement is an important element of the cycle of continuous improvement. To assist growers and vintners with understandings about cost-effective alternatives, the Alliance employs a systematic extension process that complements self-assessment. For each set of regional data, assessment criteria within each selected chapter are ranked by average performance. Targeted content for follow-up education then is prioritized with regional leaders as a means to increase performance against lower-ranked criteria. A combination of peer-to-peer education and presentations by technical and regulatory experts is used to extend information at workshops, field days, and seminars. Grants and other funding from external partners have supported this targeted education process for pest management (American Farmland Trust), ecosystem management (National Fish and Wildlife Foundation), energy efficiency (Pacific Gas and Electric Company), and air and water quality (U.S. Department of Agriculture Natural Resources Conservation Service; NRCS).

Grower and vintners apply information and understandings from the targeted education, the workbook and online system, and other sources to prepare and execute action plans. Participants using the online system access additional features for education and planning that include customized reports for aligning NRCS practices with workbook criteria. These reports serve as a guide for additional technical support, increase awareness and use of cost-share opportunities provided by the Environmental Quality Incentives Program, and streamline conservation planning with NRCS. Moreover, online benefits include links to pertinent web resources and materials and a procedure to create, store, and share action plans.

Implementation of Change

An important question remains. Does use of the cycle of continuous improvement measurably change production practices? The results from SWP activities in pest management provide evidence.

For over two years, the Alliance dedicated effort to increase statewide performance against pest management criteria beyond baselines published in the *California Wine Community Sustainability Report 2004*. Seventy five events were conducted across the state that involved targeted education relevant to using reduced-risk pesticides, releasing and managing natural enemies, monitoring and managing weeds, improving predation of vertebrate pests, and other content prioritized by regional analyses. A cumulative summary of assessment data collected after the targeted education documented increases in grower performance for 31 of the 38 pest management criteria. Moreover, greater increases were noted for many criteria consistently prioritized for improvement – 6-4 Reduced Risk Insecticides (18%), 6-9 Employee Training (16%), 6-10 Predatory Mite Releases (44%), 6-17 Cause of Bunch Rot (35%), and 6-20 Weed Monitoring (22%). More detail is available in the *2006 California Sustainable Winegrowing Program Progress Report*. These results substantiate marked progress towards the 2009 goal and the value of linking assessment results to prioritized education.

Through its SWP, the Alliance promotes the repeated process of assessment, interpretation, planning, and the implementation of change for encouraging participants to transition to more sustainable practices. Growers and vintners value the program because it enables them to highlight a commitment to the stewardship of land and human resources; negotiate environmental challenges; manage and improve relationships with neighbors and communities; optimally develop employees; minimize risk and liability; and improve economic viability through improved efficiency and marketing options. Presently, participating growers qualify for reduced insurance premiums because sustainability is associated with lower risk. Increases in program participation and in the adoption of more sustainable practices are expected as the Alliance secures more incentives (e.g., market-based, cost-share, and regulatory).

The cycle of continuous improvement is useful as a behavioral change model for other commodities pursuing sustainable agriculture. Through the SWP, the Alliance and the California winegrowing community demonstrates leadership in sustainable agriculture by balancing the economics of producing exceptional grapes and wine with high standards for environmental quality, human health, and social responsibility.

Attachment E – Selected Event Agendas

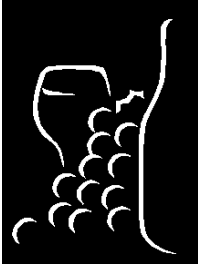
SCGGA IPM/Organic Field Day
SRJC Shone Farm
August 3, 2005

- 8:00 a.m. Registration, coffee and donuts
- 8:30 a.m. Welcome
Update on Code of Sustainable Winegrowing Nick Frey
- 9:00 a.m. 2005 Pest Management Challenges Laura Breyer
- 9:30 a.m. Vine Mealybug Update Rhonda Smith, UCCE
- 10:00 a.m. Laws and Regulations - Pest Management: Air and Water Quality Considerations
❖ John Beyer, State Air Quality Coordinator, NRCS
❖ Catrina Martin, Special Assistant to the Field Supervisor, US Fish and Wildlife
- 11:00 a.m. Breakout Sessions
❖ Irrigation Pumping Efficiency - The Center for Irrigation Technology (90 min), Bill Green - or
❖ Pierce's Disease Management (30 min) - Sandy Purcell, UC Berkeley
❖ Exotic Species in Vineyards (30 min) - Laura Breyer, PCA
❖ Solar Power for Irrigation & Vineyards (30 Min) - Gopal Shanker
❖ Biodiesel (30 min) - Lisa Mortenson, American Biodiesel, Inc.
- 12:00 noon Table Displays: Agency and Business Representatives
- 12:30 p.m. No-host BBQ lunch

Agency Table Displays

1. Rhonda Smith, Viticulture Advisor, - University of California Cooperative Extension. Grape & Vine Mealybugs, Blue-green & Glassy-winged Sharpshooter, European Fruit Lecanium Scale identification and information.
2. Francine & Mike Baldus – SCGGA informational material
3. Laura Breyer & Judy Tuhtan– SCGGA-IPM Vineyard Information, IPM Fieldbooks & info
4. Kevin Smith – Stinger Synopsis, steam eradication for weeds
5. Kara Heckert - Sotoyome RCD and Fish Friendly Farming
6. Braulio Mendieta - CHP –informational material
7. Kim Gallagher - Sterling Insectary, information on Beneficial Insects, live mites & insects.
8. Andy Baker & Scott Gergus - Regional Water Quality Control Board – informational material
9. Kristen Woodward - Northern Sonoma County Air Pollution Control District –informational material
10. Mike Noggle - PG&E - informational material
- ?11. Lisa Mortenson - Royal Petroleum, American Biodiesel, Inc.
- ?12. Gopal Shanker - Solar Power for Irrigation & Vineyards
- ?13. Catrina Martin, Special Assistant to the Field Supervisor, US Fish and Wildlife
- ?14. Sandy Purcell - UC Berkeley - Pierce's Disease Management
- ?15. John Beyer, State Air Quality Coordinator, NRCS
- ?16. Toby Tiktinsky -EPA – informational materials –not Toby, he is asking to see if other interested
- ?17.Bo Simons -Healdsburg Wine Library, informational materials – electricity last year

Sponsored by Sonoma County Grape Growers Association and Code of Sustainable Winegrowing Alliance



**Lake County Winegrape Growers &
the California Sustainable Winegrowing Alliance,**

Present:

**Sustainable Winegrowing
Field Day**

**LCWC
Board of Directors**
*Eric Seely-Chairman
John Adriance
Frank Anderson
Monica Rosenthal
Robert Roumiguere Jr.
Jim Smith
David Weiss*

**August 4, 2005, 8:30 a.m.-1:00 p.m.
Clear Lake Grange, 1510 Big Valley Rd., Finley**

Sustainable winegrowing involves many aspects of vineyard management. This meeting will cover a range of topics from improving pump efficiency and using solar power for energy and cost savings, to new water quality regulations facing growers, to pest management alternatives to reduce pesticide use and risk.

Join your fellow growers for lunch, free of charge, after this morning session.

Pest management continuing education hours applied for.

8:15 a.m. Registration, Coffee and Pastries.

8:30-8:45 a.m. Air and Water Quality and Pest Management- Making Connections, Joe Browde, CSWA.

8:45-9:15 a.m. History and Update on Irrigated Lands Conditional Waiver in Lake County, Chuck March, Executive Director, Lake County Farm Bureau.

9:15-9:45 a.m. Release of Natural Enemies for Mite Management, Kim Gallagher, Sterling Insectary.

9:45-10:00 a.m. Break

10:00-10:30 a.m. Solar Power for Irrigation, Gopal Shanker.

10:30-12:00 p.m. Irrigation Pump Efficiency Testing Bill Green from the Center for Irrigation Technology at California State University Fresno will give an outdoor demonstration of pump testing and will discuss opportunities for cost sharing to improve pump efficiency and your bottom line.

12:00-1:00 p.m. Lunch and Informal Discussion of this Season's Pest Management Issues

RSVP by July 28, 2005 so we can reserve space for you. Please fax or mail this form, or e-mail erical@lakecountywinegrape.org

Notes for Postcard for October 18th meeting:

Title: Road Design and Maintenance for Farms and Vineyards

Date and Time: Tuesday, October 18, 2005; 9:00am to 10:30am; Central Valley Waste Management Services, 1333 East Turn Rd., Lodi

Speakers: Terry Dean, Agricultural Engineer, Natural Resources Conservation Service; Josh Grant, Western Oil and Spreading; Ruth Mulrooney, Air Resource Program Coordinator, San Joaquin County; Tom Orvis San Joaquin Co. Farm Bureau

Terry will discuss the importance aspects of road design and maintenance and how they affect non-point source pollution such as water run-off and erosion, dust, etc.; Josh will discuss the latest on road maintenance materials that also reduce dust, etc.; Ruth will give an update on Air Resources Board issues; Tom will discuss road signage available through the Farm Bureau to members.

Sponsored by: LWWC and California Sustainable Winegrowing Alliance

Please RSVP to Sherri by October 17 at 209 367 4727.

**Workshop Design and Content – American Vineyard’s Grape & Raisin Expo, Central Valley
Wednesday, November 2nd, 2005 at the C.P.D.E.S. Hall in Easton, California**

6:45 – 8:00 am – BREAKFAST & Opening Session

7:30 – 8:00 am – Welcome and Introduction
Dan Malcolm, Malcolm Media Ag Publishing
Joe Browde, California Sustainable Winegrowing Alliance

8:00 – 9:00 am – Theme for Presentation Session A = *Innovation*

8:00 – 8:30 am – The Value of Enterprise Software Systems for Agriculture
Jeff Dlott, SureHarvest

8:30 – 9:00 am – Trends in Vineyard Mechanization
Maxwell Norton, UCCE-Merced County

9:00 – 9:30 am – Break & Exhibits

9:30 – 10:30 am – Theme for Presentation Session B = *Regulation*

9:30 – 10:00 am – Water Quality Concerns, Regulations, and Impacts
Parry Klassen, Coalition for Urban/Rural Environmental Stewardship

10:00 – 10:30 am – Air Quality Concerns, Regulations, and Impacts
John Beyer, USDA-NRCS

10:30 – 11:00 am – Break & Exhibits

11:00 – Noon – Theme for Presentation Session C = *Economics*

11:00 – 11:40 am – Weed Challenges During 2005 and Future Considerations
Kurt Hembree, UCCE-Fresno County

11:40 – Noon – The Season of Disease
Jon Holmquist, Constellation Wines US
Bryan Anthony, E & J Gallo Winery

Noon – 12:30 am – Break & Exhibits

LUNCH & State-of-the-Industry Presentations

Raisin – *Karla Stockli, California Raisin Marketing Board*
Wine & Concentrate – *Nat DiBuduo, Allied Grape Growers*
Table Grape – *Barry Bedwell, California Grape and Treefruit League*

Speaker Contact Information

Jeff Dlott, SureHarvest
(831) 477-7797, jdlott@sureharvest.com

Maxwell Norton, UCCE-Merced County
(209) 385-7403, mnorton@ucdavis.edu

Parry Klassen, Coalition for Urban/Rural Environmental Stewardship
(559) 325-9855, parryk@comcast.net

John Beyer, USDA-NRCS
(559) 252-2191 ext 110, john.beyer@ca.usda.gov

Kurt Hembree, UCCE-Fresno County
(559) 456-7556, kjhembree@ucdavis.edu

Jon Holmquist, Constellation Wines US
(559) 661-5539, jon.holmquist@cwine.com

Bryan Anthony, E & J Gallo Winery
(209) 341-6751, bryan.anthony@ejgallo.com

Sustainable Winegrowing Workshop- Self Assessment & Ecosystem Management

December 12, 2005, 8:00 a.m.-1:45 p.m.
Clear Lake Grange, 1510 Big Valley Rd., Finley

It is time to re-visit the Code of Sustainable Winegrowing Practices Workbooks to assess how your vineyard practices have changed. Those who have not yet completed an assessment will receive a workbook. For the rest of you, **please bring your workbooks!**

Following the workbook assessments a wide array of speakers will help to provide practical knowledge and examples of ecosystem management, from wildlife and habitat management to pest management strategies. Watershed management techniques, funding sources and regulations will also be covered.

Join your fellow growers for lunch, free of charge, after this morning session.

2.5 hours of pest management continuing education credit have been applied for.

AGENDA

7:30 a.m. Registration, Coffee and Pastries.

8:00 a.m. Code of Sustainable Winegrowing Practices self assessments, Pest Management, Wine Quality, and Ecosystem Management Chapters

9:40 a.m. Coffee Break

9:55 a.m. Watershed management for vineyards Carol Mandel, Soil Conservationist at the Ukiah NRCS office will discuss soil conservation and watershed protection measures in the vineyard, and Randy Krag, Red Hills Vineyard Co., will offer a grower case study for vineyard watershed management.

10:40 a.m. Habitat & wildlife management: Adina Merenlender, UC Berkeley, will discuss wildlife habitat management in and around vineyards.

11:20 a.m. Break

11:30 a.m. An ecosystem approach to pest management will be presented by **Michael Costello**, Professor at Cal Poly San Luis Obispo. Dr. Costello specializes in grape pest management including agroecosystem management for control of insect pests.

12:15 p.m. Funding for ecosystem management, Larry Brewer/Korrin Smith from the Lakeport NRCS office will discuss funding sources for implementing erosion control measures.

12:25 p.m. Recent changes in the Irrigated Lands Conditional Waiver Program. Bill Croyle, Director of the Irrigated Lands Program for the Central Valley Regional Water Quality Control Board and **Margaret Wong**, who leads the Sacramento Valley section of this program, will update growers on newly adopted changes in this program.

12:50 p.m. Discussion on developing an action plan for ecosystem management.

1:00 p.m. Lunch

**Code of Sustainable Winegrowing
Targeted Education Program**

December 13, 2005

**Kendall-Jackson Wine Center
507 Fulton Rd., Santa Rosa**

- 8:00 Registration & coffee
- 8:30 Ecosystem Management
- Introduction Ann Thrupp CA Sustainable Winegrowing Alliance
 - Critical Habitat for Salmonids Dick Butler National Marine Fisheries
 - Cooperative Conservation Nick Frey SCGGA
- 9:00 Watershed Management
- Enhancing Water Quality David Lewis UCCE
 - Riparian Enhancement Karen Gaffney Circuit Rider Productions
- 9:45 Habitat and Wildlife
- Opportunities for Growers Kent Reeves The Whole Picture
- 10:30 Break
- 11:00 Pest Management
- An Ecosystem Approach Michael Costello Cal Poly San Luis Obispo
- 11:45 Incentives and Laws
- NRCS Roles Kara Heckert NRCS
- 12:15 Questions and Discussion
- 12:30 Box Lunch & Sonoma County Wine

This workshop is presented by SCGGA and the California Sustainable Winegrowing Alliance. There is no cost for attendance, but bring a Sonoma County wine to share. Growers and PCA's can make reservations by sending contact information via e-mail ipm@scgga.org or phone (707) 206-0603.

Workshop Announcement: Sustainable Ecosystem Management Practices

Duplicate Workshops will be presented in Paso Robles & Santa Maria

February 13, 2006, 8am-1pm - Paso Robles City Library (corner of 11th & Spring Street)
February 14, 2006, 8am – 1pm – Historic Santa Maria Inn (801 South Broadway)

**Sponsored by: The CA Sustainable Winegrowing Alliance and the Central Coast Vineyard Team with
the Paso Robles Wine Country Alliance (in Paso Robles)**

A diversity of speakers will help to provide practical knowledge and examples of ecosystem management practices, from wildlife and habitat management to pest management strategies. Watershed management techniques, water quality protection, funding sources and regulations will also be covered. Join your fellow growers for lunch, free of charge, after this morning session. ***Two hours of DPR approved continuing education hours (1/2 hour of Laws & Regs; 1.5 hours of Other) & three hours of water quality education have been applied for.***

AGENDA

Time	Topic	Speaker(s)	
		Paso Robles	Santa Maria
7:30 am	Registration, Coffee & Pastries		
8:00 am	Welcome	Kris O'Connor, CCVT	TBD
	Introduction to Ecosystem Management	Ann Thrupp, CSWA	Ann Thrupp, CSWA
8:20 am	Watershed Management and Water Conservation/Quality in Vineyards		
	Overview of Watershed/Water Quality Management	Mary Bianchi, UCCE	Mark Battany, UCCE
	Update on CCVT Projects	Jill Whitacre, CCVT	Jill Whitacre, CCVT
	Grower Experiences	John Crossland, Vineyard Professional Services	John Crossland, Vineyard Professional Services
	Ag Waiver Update	Kay Mercer	Southern SLO & SB Counties Ag Watershed Coalition
	Q & A		
9:50 am	Coffee Break		
10:00 am	Habitat & Wildlife Management		
		Grower Experience with Wildlife Corridor - Don Ackerman, Fosters Wine Group	Wildlife & Habitat Issues in Vineyards – William Tietje, UCCE
		Hedgerows in Farms - Sam Earnshaw, CAFF	Water, Wetlands, & Wildlife – Lynndee Althouse, Althouse & Meade, Inc.
11:00 am	An Ecosystem Approach to Pest Management	Michael Costello, Cal Poly, SLO	Michael Costello, Cal Poly, SLO

11:40 am	Funding for Ecosystem Management	Margy Lindquist, NRCS	Dawn Afman, NRCS
	Grower's Experience with Funding	Jean Pierre, Wolff Vineyards	Jean Pierre, Wolff Vineyards
12:10 pm	Closing Comments		
12:15 pm	Lunch – Free of Charge		

Agenda is subject to change without notice.

Workshops are FREE. Register by Friday, February 10th by contacting Jill Whitacre, CCVT at 805.369.2288 ext. 2 or jill@vineyardteam.org to register.

Free Sustainable Winegrowing Workshop
Self Assessment and Ecosystem Issues & Management
February 22, 2006, 7:30 a.m. – 12:30 p.m.
Old School House, Avenue 14 & Road 23 ½ Madera, CA

Sponsored by Central California Winegrowers and CA Sustainable Winegrowing Alliance

This workshop pairs self assessment with follow-up targeted education in areas related to ecosystem management. First, you will conduct an updated assessment, which will include *Air Quality* – the newest chapter for the *Code of Sustainable Winegrowing Practices Workbook*. The targeted education segment will complement self assessment by conveying additional understandings and alternatives for improving your future performance, ensuring that you and your fellow winegrowers maintain a leadership position in agricultural sustainability. Please bring your personal copy of the Workbook if you have done a previous assessment. New participants will be given their own Workbook. All participants will receive the new chapter *Air Quality*.

7:30 a.m. Registration & Coffee

8:00 a.m. Opening & Background

Carson Smith – Central CA Winegrowers, Joe Browde – CA Sust. Winegrowing Alliance

SELF ASSESSMENT

8:05 a.m. Code of Sustainable Winegrowing Practices

3 Chapters – Pest Management, Ecosystem Management, Air Quality

9:30 a.m. Break (or continue self assessment)

TARGETED EDUCATION (focus - air, wildlife, water, and pests)

9:45 a.m. What is Ecosystem Management?

Ann Thrupp – CA Sust. Winegrowing Alliance

10:00 a.m. AIR: Air Quality – Issues, Practices, & Cost-Share Funds for C Valley Vineyards

John Beyer, USDA-NRCS

10:30 a.m. WILDLIFE: Opportunities for Habitat & Wildlife Management

John Brodie, San Joaquin County Resource Conservation District

11:00 a.m. WATER: Watershed Management & Regulations for C Valley Vineyards

Karla Kay Edwards, Fresno County Farm Bureau

11:30 a.m. PESTS: An Ecosystem Perspective to Pest Management

Glenn McGourty, UCCE

Noon GROWER CASE STUDIES: Balancing Natl. Resource Protection & Business Viability

Grower 1 – John Diener, Red Rock Ranch

Grower 2 – Steve Schafer, Schafer Ranch

12:30 p.m. LUNCH

2.0 Hours Continuing Education Credits for Pesticide Applicators and PCAs

Sustainable Ecosystem Management for Winegrowers

**February 28, 2006, 8:30 a.m.-12:15 pm
River Ranch Farmworker Housing Center,
1109 Silverado Trail, St. Helena**

Workshop Sponsored by the CA Sustainable Winegrowing Alliance and the Napa Sustainable Winegrowing Group

Speakers will provide practical information and examples of ecosystem management, from wildlife and habitat management to air quality issues. This workshop will also give you an opportunity to assess your vineyard practices (or to see how they have changed), using chapters of the Code of Sustainable Winegrowing Practices workbook. Those who have not yet completed an assessment will receive a new workbook. If you already have a workbook, please bring it along! The event is free of charge; continental breakfast is included.

AGENDA

8:00 a.m. Registration, Coffee and Continental Breakfast

8:20 a.m. Welcome, Astrid Bock-Foster, Napa Sustainable Winegrowing Group

Introduction: What does ecosystem management mean? Ann Thrupp,
Managing Director, California Sustainable Winegrowing Alliance (CSWA)

8:35 a.m. Habitat & wildlife management

8:35 Habitat and wildlife management in vineyard ecosystems, Kent Reeves,
Biologist, The Whole Picture, and East Bay Municipal Utilities District

9:15 Insectary Plantings for Beneficial Insects, Ann Baker, Ann Baker Landscape
Architecture

**9:45 Self-Assessment working session – Ecosystem Management Chapter in
Sustainable Winegrowing Workbook**

10:30 a.m. Coffee Break

10:45 a.m. Air Quality Issues and Practices

10:45 Air quality challenges and practices to prevent air quality problems in vineyards
– Joe Browde, Project Manager, CSWA

11:00 Practices to Improve Air Quality and Reduce Emissions at Fetzer Vineyards,
Patrick Healy, Environmental Manager, Fetzer Vineyards

11:25 Wrap Up and Discussion - Ann Thrupp

**11:30 Self Assessment working session – Air Quality Chapter in Sustainable
Winegrowing Workbook**

12:00 Adjourn

**Lake County Winegrowers and the California Sustainable
Winegrowing Alliance**

Present

Vineyard Water Quality Tailgate Meetings

Two tailgate meetings, one at Greg Graham’s vineyard in the Red Hills Lake County AVA, and one at Mike Thompson’s vineyard in Big Valley will focus on vineyard management practices to protect water resources. The hillside vineyard meeting will include an emphasis on soil conservation while the valley vineyard meeting will discuss stream bank management.

Hillside Meeting

March 17, 2006, 10 a.m.-12:30 p.m.
Crimson Hill Vineyard, 13633 Point Lakeview Rd.

- 10:00 a.m.** Coffee and registration
- 10:15 a.m.** Introduction, Carson Cox and Joe Browde, CSWA
- 10:25 a.m.** Grower perspective on vineyard management practices for water quality, Greg Graham
- 10:55 a.m.** Cover crop options for hillside vineyards, Glenn McGourty, UCCE Viticulture Advisor for Lake and Mendocino Counties.
- 11:10 a.m.** Erosion control best management practices, Carol Mandel, NRCS
- 11:30 a.m.** NRCS technical resources and funding opportunities, Korrin Smith and Larry Brewer, NRCS
- 11:45 a.m.** Permit coordination for best management practices, Linda Juntunen, West Lake RCD
- 12:00 p.m.** Brown bag lunch provided

Valley Meeting

March 17, 2006, 3-5:30 p.m.
Adobe Creek Ranch, 2140 Finley East Rd.

- 3:00 p.m.** Registration
- 3:15 p.m.** Introduction, Carson Cox and Joe Browde, CSWA
- 3:25 p.m.** Grower perspective on vineyard management practices for water quality, David Weiss, Vineyard Manager and Mike Thompson, Vineyard Owner
- 4:00 p.m.** Cover crop options for valley vineyards, Glenn McGourty, UCCE Viticulture Advisor for Lake and Mendocino Counties.
- 4:15 p.m.** Stream bank management for soil stabilization and wildlife habitat, Korrin Smith, NRCS
- 4:30 p.m.** NRCS technical resources and funding opportunities, Korrin Smith and Larry Brewer, NRCS
- 4:45 p.m.** Permit coordination for best management practices, Linda Juntunen, West Lake RCD
- 5:00 p.m.** Wine and cheese reception



Postcard for March 29th meeting:

Title: Vineyard Floor Management and Air Quality

Date and Time: Wed. March 29; 9:00am to 11:00am; Bokisch Vineyards, 18909 Aktins Rd., Clements, CA

Speakers: John Beyer, NRCS California Air Quality Coordinator; Randy Segawa, Senior Environmental Scientist, California Dept. Pesticide Regulation; Bubba Simnacher, Bubco Distributors; Markus Bokisch, Bokisch Vineyards; Joe Browde, California Sustainable Winegrowing Alliance

Bubba Simnacher will demonstrate a new aeration tool for vineyard floor management called the Aerway. The other speakers will discuss vineyard floor management as it relates to air quality issues that are very important like dust, volatile organic compounds (VOC's). View a range of vineyard floor management schemes that Markus has developed for his vineyards.

Sponsored by: LWWC and California Sustainable Winegrowing Alliance

Please RSVP to Sherri by March 28, Phone 367 4727. PCA Hours applied for: 1 hr, including a ½ hour Laws & Regs.

Announcement:

Vineyard Water Quality Management Tailgate Meeting

May 3 - 3:00 – 5:30 pm

McNab Ranch (Bonterra Vineyards)
2231 McNab Ranch Road, Ukiah

Co-sponsored by
**California Sustainable Winegrowing Alliance
Mendocino Winegrowers Alliance
and UC Cooperative Extension**

This free tailgate meeting will focus on management practices to protect water resources. The meeting will include an overview of watershed management and creek restoration methods, re-vegetation practices, cover crops, and related topics.

3:00 Registration

3:15 Introduction

Ann Thrupp and Carson Cox, CA Sustainable Winegrowing Alliance

3:25 Management practices affecting water quality & natural resources at Bonterra, Chad Boardman and David Koball, Bonterra Vineyard managers

3:50 Erosion prevention & methods to restore creeks/watersheds

Carol Mandel, Natural Resource Conservation Service, and
Kerry Williams, Consultant to Mendocino Resource Conservation District

4:15 Other related practices and trials at Bonterra – Cover crops, habitat, and pest management, Glenn McGourty, UC Cooperative Extension

4:45 Opportunities for technical support and funding –
NRCS, RCD

5:00 Wine reception

Please RSVP to Francine or Linda at UC Cooperative extension – tel: 707-463-4495, or cemendocino@ucdavis.edu. There is no charge for this event, but we would like to estimate numbers of people coming. Thank you!

Benziger Family Winery
Hot Topics Seminar Agenda
Wednesday, May 24, 2006

- 8:30 – 9:00 am** Registration & continental breakfast
- 9:00 – 11:30 am** John Garn – Complete Workbook Self-Assessment
- 11:30 am – Noon** John Garn – New Air Quality Chapter Self-Assessment only
- Noon – 1:00 pm** Lunch
- 1:00 – 1:15 pm** Joe Browde and Carson Cox – Brief overview of SWP targeted education/action planning process and relationship to the day’s subsequent field tour elements = demonstrations & discussions of Benziger’s existing practices/technologies for natural resource protection.
- 1:20 pm** Entire group boards Benziger’s tram system for transport to various stops throughout the vineyards and surroundings.
- 1:30 – 3:00 pm** Tram stops for Benziger staff to display and lead discussion of its operations for protecting natural resources. Insectary (Biodiversity), Vineyard (Equipment Demo), Compost Area (Fertility), Steep Terraces (Erosion Control), Wastewater Ponds, Constructed Wetlands (Water Management and Conservation), Creek (Fish Friendly Habitat and Erosion Control), Barn (Use of Animals).

June 2006 Winegrape Tailgate Meetings

*Sponsored by Central California Winegrowers & California Sustainable Winegrowing Alliance
Funded in part by grants from USDA-NRCS and American Farmland Trust*

Similar 9:00 a.m. – noon meetings conducted in Visalia, Madera, and Modesto

Thursday, June 8	Shannon Ranch, Visalia NE corner of Rd 100 & Ave 320
Monday, June 12	Schafer Ranch, Madera 14484 Rd 21 (½ mile N of Ave 14)
Wednesday, June 14	Modesto Jr College Farm, Modesto 4554 Beckwith Rd (1.4 miles west of Hwy 99)

AGENDA (similar per date/location)

9:00 a.m. **Registration and Overview**
Peter Vallis, Central California Winegrowers
Joe Browde, California Sustainable Winegrowing Alliance

9:15 – 10:30 a.m. **Code of Sustainable Winegrowing Self-Assessment**
Pest Management & Air Quality chapters *only*

BREAK

10:40 – 11:00 a.m. **Air Quality - Regulations, Practices, and Cost-Share Opportunities**
John Beyer & Johnnie Siliznoff, USDA-Natural Resources Conservation Service

11:00 – 11:15 a.m. **Water Quality – Update on Irrigated Lands Conditional Waiver Program**
David Cone, Kings River Conservation District

11:15 – 11:30 a.m. **Host Grower Presentation – On-Site Practices for Natural Resource Protection**
Eric Shannon, Steve Schafer, or Modesto Jr College Farm staff

11:30 – Noon **Enviro-Friendly Equipment Demonstration and Discussion**
The Aerway – a multi-use floor management tool that prevents dust and runoff
Ken Tanner, AerWay & Bubba Simmacher, Bubco, Inc.

FREE LUNCH

2.5 Hours of Continuing Education Credits for Pesticide Applicators and PCAs

To RSVP or for more information contact Central California Winegrowers at:
559-618-1856 or info@ccwinegrowers.org

Sustainable Winegrowing Targeted Education Workshop

What: A Targeted Education Workshop on Water Quality.

When: Thursday, June 15, 2006

12:15 Registration & lunch

1:00 Welcome Joe Browde/Carson Cox, CSWA

1:05 Sustainable Practices in Clos du Bois Vineyards

Keith Horn, Vineyard Manager/Circuit Rider Productions

- **Riparian revegetation**
- ***Arundo domax* removal**
- **Fish Friendly Farming, an option for Action Planning to improve water quality**

1:45 Cover-cropping strategies

Mike Insley, Clos du Bois & Rhonda Smith, UCCE

- **Applying New Zealand experience in Sonoma County**

2:10 Cost sharing options

Sean McNeil, Circuit Rider/Kara Heckert, NRCS

2:30 Adjourn

Where: Clos du Bois Vineyard, 910 Lytton Station Rd., Geyserville

Sponsored by: Clos du Bois Vineyards, Sonoma County Grape Growers Association, and California Sustainable Winegrowing Alliance with funding from USDA-NRCS, and American Farmland Trust, and SCGGA.

Reservations are required by June 12. Call 566-0303 or email ipm@scgga.org. There is no cost to attend or for lunch. This workshop follows the Alexander Valley IPM Grower Appellation Meetings.



Sonoma County Energy Efficiency Workshop June 21, 2006



Co-sponsored by **California Sustainable Winegrowing Alliance** and **PG&E**

Partnering organizations: **Wine Institute, California Association of Winegrape Growers, Sonoma County Grape Growers Association, Sonoma County Vintners and the Sonoma Green Business Program**

- 8:30 - 9:00 am** **Registration and continental breakfast**
- 9:00 am** **Introduction**
Overview of the Sustainable Winegrowing Program (SWP), context for energy efficiency, challenges and opportunities. **John Garn, CSWA**
- 9:15 am** **Water Conservation = Energy Savings**
Overview of water use and achievable reductions; water reuse and efficiency measures; and wastewater ponds. **Bob Chrobak, Kennedy/Jenks**
- 9:45 am** **Energy Evaluation and Planning**
Reading your energy bill, time of use, rate schedules, bill comparison results, conservation and energy monitoring, on-line web services, demand use overview and Peak load “shedding”. **Jim Salomone, PG&E**
- 10:15 am** **Energy Conservation and Efficiency Improvements**
Wine industry experiences, with testimonials regarding practices and technologies that can help save energy and costs. **Natasha Granoff of Sonoma Wine Company and Mark Burningham of Benziger Family Winery**
- 10:45 am** **Coffee break**
- 11:00 am** **Winery and vineyard break-out sessions**
(See next page for break-out session details.)
- 12:15 pm** **Full group reconvenes**
Incentive Policies and Rebate programs
Information on PG&E’s free winery audits, equipment rebates, technical support services and other resources for winery and vineyard customers **Patsy Dugger, PG&E**
- 12:30 pm** **Wine Industry Efficiency Solutions Program**
David Casentini, Resource Solutions Group
- 12:45 pm** **Energy Action Plan**
Strategy and tools for beginning an energy efficiency program. **John Garn, CSWA**
- 1:00 pm** **Lunch**

Energy Efficiency in Wineries Facilitated by John Garn, CSWA	Energy Efficiency in Vineyards Facilitated by Joe Browde, CSWA
11:00 am Energy Retrofits for Wineries Overview of top retrofits for wineries: innovative refrigeration systems, motors, HVAC, lighting, equipment; and behavioral changes. Mike Noggle, PG&E	11:00 am Energy efficiency in vineyards Pumps, tractors & farm equipment James Tischer, Agricultural Pumping Efficiency Program
11:15 am Energy Savings through a tartrate stablization system Domingo Rodriguez, Wine Secrets	11:30 am Biodiesel use Lisa Mortenson, Community Fuels
11:30 am Energy Efficiency and Solar Options Karen Butterfield, Power Light Corporation	12:00 pm Renewable energy in vineyards Solar energy Bill Scott—Akeena Solar
12:00 pm Integrating Energy Efficiency into Production Upgrades Opportunities in refrigeration, barrel washing, tank cleaning, and bottling, leading to <u>more</u> production with <u>less</u> electricity, N.Gas, water, and wastewater. John Rosenblum, Rosenblum Environmental Engineering	

Sonoma County Grape Growers Association

Invites You to

THE 7TH ANNUAL

IPM FIELD DAY

Date: Wednesday, August 3, 2006

SRJC Shone Farm

6225 Eastside Rd, Forestville

General Public Welcome!

8:30 am	Registration & Refreshments
8:45 am	Introduction & Welcome
8:55 - 12:30	Speakers & Presentations
12:30 - 1:30	Trade Show
	BBQ courtesy of Monterey AgResources



Highlights

- **Ergonomics & Worker Safety**
 - UCCE – Recent research results, incl. harvest picking study
 - Safety tips from 3 Vineyard Managers
- **Update on Code of Sustainable Practices/Benefits for Participants**
- **Pesticides & Volatile Organic Compounds (VOC's)**
- **Highlights of IPM Season**
- **IPM Approaches to Vine Mealybug Management**
- **Water Needs at critical times in salmonid life cycles**

3 CEU Credits applied for – including 1 hour for Laws and Regulations.

For more information & registration, contact SCGGA at phone: 707-566-0303, Fax: 707-206-0313 or email: ipm@scgga.org. Sponsored by Sonoma County Grape Growers Association and California Sustainable Winegrowing Alliance with funding in part by American Farmland Trust and USDA Natural Resources Conservation Service.

Agenda
Erosion Control Workshop
August 18, 2006
Bloomfield Ranch, 3225 Bloomfield Rd. Sebastopol
Kendall-Jackson Wine Estates

Morning Session – Spanish

8:30 – 11:30 a.m.

Erosion Control Practices & Their Installation - Cover Crops	Hugo Gallardo, Assistant Vineyard Manager, Kendall- Jackson Wine Estates
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Afternoon Session – English

1:30 pm. –4:30 pm

Soil Stabilization	James Chinchiolo or Cindy Parry, Thunder Mountain Enterprises
Quantification of Erosion Rates for Various Vineyard Management Practices	Heather Shepherd, Wallace Group
Streambank Stabilization Techniques	Carson Cox, Sustainable Conservation
Erosion Control Practices & Their Installation Cover Crops	David Hudgins, Kendall- Jackson Wine Estates
Floor Management Demonstration with Enviro-friendly “AerWay” Technology	Bubba Simnacher and Ken Tanner, BUBCO, Inc.

**Design and Content – American Vineyard’s Grape & Raisin Expo, Central Valley
Wednesday, November 1st, 2006 at Caruthers Fairgrounds, Caruthers, California**

6:45 – 8:00 am – BREAKFAST & Opening Session

7:30 – 8:00 am – Welcome and Introduction
Dan Malcolm, Editor American Vineyard
Joe Browde, California Sustainable Winegrowing Alliance

8:00 – 9:00 am – Theme for Presentation Session A = ***Air and Water Quality***

8:00 – 8:30 am – Pesticides, Volatile Organic Compounds, and Ozone
Randy Segawa, CA Department of Pesticide Regulation

8:30 – 9:00 am – Agricultural Water Factors affecting Future Use
David Zoldoske, CSU-F Center for Irrigation Technology

9:00 – 9:30 am – **Break & Exhibits**

9:30 – 10:30 am – Theme for Presentation Session B = ***Vineyard Technologies***

9:30 – 10:00 am – Bringing New Technology to the Grape Industry
Robert Wample, CSU-F Viticulture & Enology Research Center

10:00 – 10:30 am – Abscission Agents that may facilitate the Mechanical Harvest of Grapes
Matthew Fidelibus, UCCE Kearney Ag Center

10:30 – 11:00 am – **Break & Exhibits**

11:00 – Noon – Theme for Presentation Session C = ***Energy Alternatives for Vineyards***

11:00 – 11:40 am – Characterizing and Using Biodiesel for Vineyards
Ryan Lamberg, Community Fuels

11:40 – Noon – Characterizing and Using Solar Energy for Vineyards
Rob Hichborn, Premier Power Renewable Energy

Noon – 12:30 am – **Break & Exhibits**

LUNCH & State-of-the-Industry Presentations = *The Grape Industry Now – Legislative and Regulatory Issues*

1:00 – 1:20 pm – Table Grape – *Kathleen Nave, California Table Grape Commission*

1:20 – 1:40 pm – Wine & Concentrate – *Nat DiBuduo, Allied Grape Growers*

1:40 – 2:00 pm – Raisin – *Glen Goto, Raisin Bargaining Association*

Sustainable Winegrowing Practices for Water Quality Tailgate Meeting

November 21, 2006, 10 A.M. - 1:00 P.M.
Page Nord Vineyard (near Yountville), Napa Valley

From the south:

From Highway 29, turn right onto Washington St. (the next turnoff north of Oak Knoll) then proceed north on Washington St. for 1/2 mile. Turn right onto Trubody Lane, and proceed east until road ends. Follow signs to parking.

From the north:

Proceed south from the town of Yountville on Washington St. (the main street in Yountville) for 1.5 miles. Turn left on Trubody Lane and proceed 1/2 mile until road ends. Follow signs to parking.

Sponsored by:

*California Sustainable Winegrowing Alliance (CSWA)
Nord Coast Vineyard Services
Napa Sustainable Winegrowing Group
Napa Valley Grape Growers Association
University of California Cooperative Extension*

- 10:00 a.m.** Registration
- 10:15 a.m.** *Introduction.* Carson Cox and Joe Browde, CSWA
- 10:25 a.m.** *Grower Perspective - Vineyard Management Practices for Water Quality.*
Jon Kanagy, Nord Coast Vineyard Services
- 10:55 a.m.** *Regulatory Update – Napa River sediment/other TMDLs.*
Dyan Whyte, TMDL Program Manager, San Francisco Bay RWQCB
- 11:15 a.m.** *Cover Crops – Management Options for Vineyards.*
Dave Steiner, Senior Soil Conservationist, Napa Resource Conservation District
- 11:35 a.m.** *From Field to Stream – Erosion Control, Bioengineering, and Sustainable Farming.*
Phil Blake, Napa NRCS District Conservationist and Jon Kanagy
- Noon** Lunch and Wine Share - **attendees encouraged to bring wine for sharing**



This meeting and lunch are free but **reservations are required by November 17th**. RSVP by providing your name, business, phone, and e-mail to Napa Sustainable Winegrowing Group by fax (707-252-4219) or e-mail (nswg@naparcd.org). For questions, phone 707-252-4188 x100.

Name: _____ Phone: _____

Business: _____ E-mail: _____

Funding provided by USDA-NRCS, Wine Institute, and California Association of Winegrape Growers

Pruning and Sustainable Winegrowing Workshop

December 8, 2006, 7:00 A.M. - 1:00 P.M.

Location: California State University – Fresno

VERC Building @2360 E. Barstow (north side of Barstow between Cedar and Maple Avenues)

Sponsored by:

*Central California Winegrowers &
California Sustainable Winegrowing Alliance*

- 7:00 a.m.** REGISTRATION and COFFEE
- 8:00 a.m.** Program Synopsis and Targets for Sustainability
Peter Vallis, *Central California Winegrowers*
Joe Browde, *California Sustainable Winegrowing Alliance*
- 8:15 a.m.** Eutypa – Current Issues and Management
Sanliang Gu (tentative), *California State University - Fresno*
- 8:45 a.m.** Pruning Considerations for the Central Valley
Emilio Miranda, *Allied Grape Growers*
- 9:15 a.m.** Options and Solutions for Effective Cover Cropping
Jon Holmquist, *Constellation Wines US*
- 9:45 a.m.** Resistance Management for Fleabane and Horseweed
Kurt Hembree, *University of California Cooperative Extension*
- 10:15 a.m.** Pros and Cons of Mechanized Pruning
Carson Smith, *Central California Winegrowers*
- 10:35 a.m.** BREAK and REFRESHMENTS
- 10:45 a.m.** In-the-vineyard Mechanized Pruning
Equipment demonstrations by Grapekist, Kingsburg Cultivator, and Oxbo
- 12:15 p.m.** LUNCH

Funding support by USDA-NRCS, Wine Institute, & California Association of Winegrape Growers

Meeting Title: Vineyard Sprayer Technology and Spraying BMPs.

Speaker: Dr. Andrew Landers, Cornell University

Date & Time: Friday February 2, 2007, 9am to 10:30am.

Location: Central Valley Waste Management Services Seminar Room, 1333 East Turner Rd., Lodi, CA

PCA Hours: 1.0 Laws & Regs. 0.5 Hours O (Other)

Agenda:

This is a unique opportunity for Lodi growers. Dr. Landers is an expert on vineyard sprayers and will present information on to get the most out of your vineyard sprayer including information on spray coverage, spray deposition, how to minimize spray drift, how to minimize volatile organic compound emissions (an important issue in the Central Valley), variable rate application, remote sensing etc.

RSVP by February 1st so you can be in the raffle!

Donuts, bagels, juice, tea and coffee provided

Co-Sponsored by the California Sustainable Winegrowing Alliance

March 2007 Winegrape Tailgate Meetings

*Sponsored by Central California Winegrowers & California Sustainable Winegrowing Alliance
Funded in part by a grant from USDA Natural Resources Conservation Service*

Similar 9:00 a.m. – noon meetings conducted in Visalia, Madera, and Modesto (Ripon)

Tuesday, March 6	Shannon Ranch, Visalia NE corner of Rd 100 & Ave 320
Wednesday, March 7	Schafer Ranch, Madera 14484 Rd 21 (½ mile N of Ave 14)
Thursday, March 8	McManis Family Winery, Ripon 18700 E River Rd

AGENDA (similar per date/location)

9:00 a.m. **Registration and Overview**
Peter Vallis, Central California Winegrowers
Joe Browde, California Sustainable Winegrowing Alliance

AIR QUALITY

9:15 – 9:30 a.m. **Overview of Air Quality Regulations affecting Central Valley Winegrowers**
Johnnie Siliznoff & John Beyer, USDA-Natural Resources Conservation Service

9:30 – 10:00 a.m. **Vineyard Dust - Regulations, Recommended Practices, and Incentives**
Johnnie Siliznoff & John Beyer, USDA-Natural Resources Conservation Service

10:00 – 10:30 a.m. **Pesticides and Volatile Organics – Understandings, Regulation, and Management**
Randy Segawa, California Department of Pesticide Regulation, &
Joe Browde, California Sustainable Winegrowing Alliance

Break

10:45 – 11:15 a.m. **Cost-Effective and Responsible Fertility Programs for Central Valley Winegrapes**
Bill Peacock, University of California Cooperative Extension

11:15 – 11:45 a.m. **Insurance Issues and Needs for Growers**
United Valley Insurance Company

11:45 – Noon **Host Grower Presentation – On-Site Practices for Sustainable Winegrowing**
Eric Shannon, Steve Schafer, or Ron McManis

FREE LUNCH

2.0 Hours of Continuing Education Credits for Pesticide Applicators and PCAs

To RSVP or for more information contact Central California Winegrowers at:
559-618-1856 or info@ccwinegrowers.org

May 2007 Winegrape Tailgate Meetings

*Sponsored by Central California Winegrowers & California Sustainable Winegrowing Alliance
Funded in part by a grant from USDA Natural Resources Conservation Service*

Similar 9:00 a.m. – noon meetings conducted in Dinuba, Madera, and Keyes

Tuesday, May 8	Shannon Ranch, Dinuba NE corner Ave 384 & Rd 120 (west of hwy 63)
Wednesday, May 9	Fasi Ranch, Madera Rd 32 & Avenue 7 @ the River bottom
Thursday, May 10	Yonan Ranch, Keyes NE Corner Foote Rd & Keyes Rd, (1/16 mile west of 99)

AGENDA (similar per date/location)

- 9:00 a.m. **Registration and Overview**
Joe Browde, California Sustainable Winegrowing Alliance
- 9:15 – 9:45 a.m. **Water Quality & the Irrigated Lands Conditional Waiver Program – Status**
Bill Croyle and Alan Cregan, Central Valley Regional Water Quality Control Board
- 9:45 – 10:15 a.m. **Vine Mealybug – Recommended Management Practices & Research Activities**
David Haviland, University of California Cooperative Extension, &
Joe Browde, California Sustainable Winegrowing Alliance
- 10:15 – 10:45 a.m. **Irrigation Strategies to Manage Vine Stress and Achieve Yield & Quality Goals**
Robert Wample and Sanliang Gu, California State University-Fresno, &
Emilio Miranda, Allied Grape Growers
- Break*
- 10:50 – 11:05 a.m. **Insurance Issues – Evaluating Your Responsibilities and Labor Needs**
Keri Hennesay, United Valley Insurance Company
- 11:05 – 11:35 a.m. **Employee Heat Stress – Best Practices for Farm Workers**
Dan Castillo, Pan American Underwriters
- 11:35 – 11:45 a.m. **Host Grower Presentation – On-Site Practices for Sustainable Winegrowing**
- 11:45 – 12:15 p.m. **Enviro-Friendly Weed Control Demonstration & Discussion**
WeedSeeker Technology; NTech Industries & Local Distributors

FREE LUNCH

Pending - 1.5 Hours of Continuing Education Credits for Pesticide Applicators and PCAs

To RSVP or for more information contact Central California Winegrowers at:
559-618-1856 or info@ccwinegrowers.org

IPM/Organic Field Day

August 1, 2007

SRJC Shone Farm

8:30 **Registration, Coffee, Welcome**

8:40 **Update of Code of Sustainable Winegrowing**

Joe Browde, CSWA

8:45 **Sustainable Winegrowing**

Water Conservation – Mark Greenspan, Ph.D. Advanced Viticulture, Irrigation Specialist

9:15 **Water Stress-Induced Pest Pressures**

Lucia Varela – IPM Specialist, Univ. of Calif. Cooperative Extension, Davis, **OR**, Kent Daane, Univ. of Calif. Cooperative Extension, Berkeley

9:45 **Reducing Your Carbon Footprint** –David Smart, Dept of Viticulture &

Enology, University of California, Davis, co-authored by Johan Six, and Steven De Gryze, Dept of Plant Sciences, and Emma Suddick, Dept of Viticulture and Enology

10:15 Break

10:45 **IPM Season Highlights** – Laura Breyer, Breyer IPM Vineyard Service

11:15 **Mechanical Weed Management in Organic Vineyards**

Kirk Grace, Vineyard Manager, Stag's Leap Vineyards

11:45 **Light Brown Apple Moth – LBAM**

Lisa Correia – Sonoma County Agriculture Commissioner

12:15 Wrap-Up

12:30 Lunch

\$5.00 donation for 2 wine tickets

Sponsored by the Sonoma County Winegrape Commission and the California Sustainable Winegrowing Alliance with funding support by the USDA Natural Resources Conservation Service.

BBQ generously sponsored by Vineyard Industry Products

Pruning and Sustainable Production Workshop

December 7, 2007, 7:00 A.M. – 3:30 P.M.

Location: California State University – Fresno

VERC Building @2360 E. Barstow (north side of Barstow between Cedar and Maple Avenues)

Sponsored by:

Central California Winegrowers, California State University – Fresno Viticulture & Enology Department & California Sustainable Winegrowing Alliance

- 7:00 a.m.** REGISTRATION and COFFEE
- 7:45 a.m.** Welcome and Program Summary
Peter Vallis, *Central CA Winegrowers*
Joe Browde, *CA Sustainable Winegrowing Alliance*
- 8:00 a.m.** Vine Mealybug – Status, Management, and Research
Kent Daane, *University of California - Berkeley*
- 8:30 a.m.** Pruning for Quality in Winegrapes
Robert Wample, *California State University - Fresno*
- 9:00 a.m.** Air Quality Successes and Challenges for the Central Valley
Johnnie Siliznoff, *USDA-Natural Resources Conservation Service*
- 9:30 a.m.** Volatile Organics from Pesticides – Regulations and Management Considerations
Randy Segawa/Pam Wofford, *CA Department of Pesticide Regulation*
- 10:00 a.m.** BREAK and REFRESHMENTS
- 10:15 a.m.** Solar Energy Systems for Central Valley Agriculture
Dan Mello, *EI Solutions*
- 10:45 a.m.** Reducing the Greenhouse Gas Footprint from Vineyards
David Smart, *University of California - Davis*
- 11:15 a.m.** Why an Annual Review with your Insurance Agent is Important
United Valley Insurance
- 11:45 a.m.** Winery Views – Pros and Cons of Mechanical Pruning
(Panel Discussion)
- 12:15 p.m.** LUNCH
- 1:00 – 3:30 p.m.** In-the-vineyard Demonstrations (mechanical pruners, precision sprayers, innovative weed management equipment, and other)

Funding support by USDA-NRCS, Wine Institute, & California Association of Winegrape Growers