WINE INSTITUTE
THE VOICE FOR CALIFORNIA WINE

Sustainable Winegrowing Practices

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New Workshops Help California Wineries Expand "Green" Practices

The California Sustainable Winegrowing Alliance (CSWA) is offering a new round of free workshops on energy efficency, integrated pest management (IPM), ecosystem management, and air and water quality. Here is a preview of what attendees can expect at these upcoming workshops, followed by stories on winery practices in these areas.

WHO CAN ATTEND:

All California vintners and winegrape growers are invited to attend the new offerings of action plan workshops to develop strategies for expanding their sustainable practices.

Many participants have already attended a Sustainable Winegrowing Program self-assessment workshop where they submitted a self evaluation of their operations and received a customized, confidential report on their performance with comparisons to their peers.

Action plan workshops can support their efforts in making appropriate changes to their operations.

Though not mandatory, attending a self-assessment workshop is strongly recommended before doing an action plan workshop. Both workshops are available. For a schedule, go to: www.sustainablewinegrowing.org. or www.wineinstitute.org.

CUSTOMIZED WORKSHOPS:

CSWA works closely with regional associations and solicits input from government agencies, industry experts and academia to provide workshop content on the areas most in need of improvement, as identified by the self-assessment results collected from earlier workshops.

CSWA also produces reports that compare self-assessment results of a particular region to statewide data. Together with the regional association, CSWA analyzes these reports to customize workshop presentations.

WORKSHOP TOPICS:

Action plan workshops generally run one-half day and focus on integrated pest management, air and water quality, ecosystems management and energy efficiency. To date, more than 55 action plan events have been held with several thousand attending from California's wine community. More workshops are scheduled for 2006, with funding from American Farmland Trust, National Fish & Wildlife Foundation, and the USDA's Natural Resources Conservation Service.

Participants listen intently at a recent Ecosystems Management workshop in Sonoma that presented how-to information for creating biodiversity and a healthier enviornment in and near the vineyards.

IPM—While each workshop is adapted to regional needs, IPM topics include early bunch stem necrosis, young vine decline, orange tortrix, grape phylloxera, and vine mealybug, with an emphasis on monitoring and prevention.

Energy Efficiency—Co-sponsored by CSWA and PG&E, workshop content includes energy evaluation and planning, energy efficiency methods in vineyards and wineries, and renewable energy. PG&E provides information on free winery energy audits, equipment rebates, technical support services, new resources and more.

Air & Water Quality—These action plan workshops address concerns over natural resource protection and regulations, particularly for air and water quality. Demonstration sites will eventually be part of the workshops to show real life conservation practices and cost-share opportunities through the USDA NRCS grant project.

All workshops include time for participants to develop action plans for improving their practices.

"The workshop offered practical, timely information for my winery from leading experts in the field. More importantly, I exchanged ideas with my colleagues about what technology has and has not worked for them," said a participant.

Please share this newsletter with your entire staff. It is also available online in pdf format on Wine Institute's website at: www.wineinstitute.org/communications/highlights/workshops2006.pdf.

Photo courtesy Sun-Maid Growers

At left: A large membrane covering Sun-Maid's process water lagoon harvests the methane gas produced by the biodigester bacterium.

Sun-Maid Biodigester Converts Distillery Process Water to Energy Savings

In 1983, Wine Institute member Sun-Maid Growers of California pioneered the installation of a biodigester to treat the 100,000 gallons of process water and biowaste solids generated as byproducts from its distillery in Orange Cove, south of Fresno.

The distillery produces high proof grape alcohol for brandy and for port and sherry fortification by using substandard raisins from Sun-Maid's main plant. Before the biodigester was installed, the distillery's process water byproduct created some major problems in that it became septic, along with offensive odors. The situation nearly closed the distillery.

After some research, now retired distillery operations manager Russell Murray decided that a biodigestor was a cost effective treatment method. The biodigester reduced solids and biological oxygen demand (BOD) in the process water by 85 percent, and the p.H. rose from 3.5 to 7.5. As a result, the odors were completely eliminated.

As an added bonus, the biodigestor produces enough methane gas to fuel the boilers that run the stills and replaces 75 percent of Sun-Maid's natural gas needs. Also, because the quality of the process water is significantly improved, Sun-Maid stores the water in ponds where the water is evaporated, and the remaining solids are sold for compost. The entire system is sustainable in that wastes are reused and turned into cost savings.

Charles Feaver of Sun-Maid says the biodigester system is a year-round operation because the distillery is running continuously. Sun-Maid has a constant supply of brandy-grade raisin material for the distillery operations.

In setting up the biodigester, a starter culture of bacterium was produced in a laboratory from dairy manure and then climatized to digest the process water instead of its normal food supply. Gradually it was transferred to larger and larger vessels.

Process water is stored in the distillery's four-million gallon lined lagoon. A membrane covers the lagoon to exclude air and trap the methane gas. The starter culture is then introduced. As the process water fills the lagoon, a low-pressure blower transports the methane gas to the boilers, where it is burned to produce steam to run the stills.

Maintenance involves cleaning out solids from the lagoon annually, checking the pump that gathers the methane gas, and replacing the membrane every 15-20 years.

"The system was expensive to install, but the harvested methane gas has resulted in energy savings that have paid for the biodigester," says Feaver. "It also made our distillery operations possible."

CLOS DU BOIS BIODIGESTER

The Clos du Bois Winery in Geyserville has found in its five years of experience operating a biodigester that it can run the system just during the fall season to treat the process water resulting from harvest operations.

According to Facilities Manager Brian Hemphill, the biodigester bacterium can lie dormant during the rest of the year, and be activated for harvest. Hemphill explained that the strength and profile of winery waste changes throughout the year and the bacteria cannot adjust rapidly to change. As a result, the winery has acclimated their biodigester bacterium to the sugars and alcohols that are at higher levels during the harvest season. Story is online at: www.wineinstitute.org/communications/highlight/hom_1nov02.htm

IPM and Rodent Control at Schug Carneros Estate

Completing his 52nd winegrape harvest in Germany and California including work as Joseph Phelps winemaker, Gallo North Coast grower relations, and owner of his own winery since 1980, vintner Walter Schug draws upon this long experience to oversee sustainable practices and the production of Pinot Noir and Chardonnay at his Schug Carneros Estate in the Sonoma Valley.

Though many sustainable methods are employed at this winery, Wine Institute asked Schug about IPM and, specifically, controlling vertebrate pests. The use of barn owls to hunt down rodents and prevent damage to vineyards is increasingly becoming standard practice in California. Nesting boxes to attract these birds of prey dot the vineyard landscape.

Several methods are available to control rodents, but Schug has limited his practices to natural methods with barn owls and trapping. While it is perfectly appropriate to set out one owl nesting box for every 40-100 acres, he provides seven boxes for his 42 acres to ensure that there are enough sites for the owls. He has about 50 percent occupancy with these multiple boxes, the usual success rate for habitation.

"Nesting boxes are cost effective. We have observed a lower gopher population through decreased gopher mounds on our property, skeletal remains and droppings under the boxes," he says.

Schug says the top of the nesting box serves as a perch for other raptors, which use the roof platform as a resting place and observation point. The winery and vineyard crew have not had to modify their activities for noise around the boxes, and the boxes require cleaning only once a year, usually in the late fall before the nesting season.

Wine Institute photos

Vintner Walter Schug (above) uses a "live and let live" philosophy in creating a balance between predator and pest in his Carneros vineyards. He prefers mounting the nesting boxes on poles instead of trees to protect the owl young from predators.

Trapping rodents supplements the hunting activities of the barn owls. He uses a cinch trap in the spring when it is easier to control the rodent population before it multiplies. He's managed to avoid using bait and fumigation controls.

Not all the birds are generally acceptable in the vineyards. Starlings and Linnets are attracted to the feed set out for dairy cows on a neighboring property. Schug nets his vines before harvest to prevent pecking damage to the fruit.

To combat mite and leafhopper pests, cover crops between vineyard rows attract beneficial insects. Schug uses a mix of bell beans, barley, vetch and oats for a cover crop, which is later disked in with grape cuttings and pomace to improve the shallow, clay soils of the flat vineyards. Mowed grasses on the vineyard slopes prevent soil erosion, and a commercial cover crop mix subdues nematodes. He is careful to control the height of his cover crops so they won't compete too much for water or create cooler temperatures that will make the vineyards more prone to frost.

Schug has gained a "live and let live" philosophy for his vineyards. Understanding that 100 percent eradication of pests is not possible, he believes good farming requires the natural balance between predator and pest.

Resources:

- ***Code of Sustainable Winegrowing Practices Workbook***

"Integrated Pest Management," including "Vertebrate Pest Monitoring and Management."
Chapters 6-1 to 6-29.

- ***Barn Owl Headquarters***

How-to web page on using owls for rodent control.
http://members.tripod.com/Tommy51

Strategic Placement of Owl Boxes

- Boxes should be in areas of low human activity, if possible.
- In order to protect the owls' young from predators, boxes should be mounted on poles rather than trees.
- Where possible, locate the doorway away from prevailing winds.
- If you mount an owl box in a tree, place it in the upper third of the tree for higher occupancy.

Important Tips

- Include protection from sun in the box design, such as a baffle in the design.
- Avoid disturbing owls from early February until late March, when the female is incubating.
- When the entrance becomes soiled, owls are probably using the box.
- Provide one or two long perches for young to exercise their wings—do not provide perches if the boxes are within 70 feet of a large tree, or if Great-Horned Owls are predating the barn owls.
- Place a ¼ inch of wood shavings in the box to keep the eggs from rolling during incubation.

California's Sustainable Winegrowing Program

The Sustainable Winegrowing Program (SWP), introduced in 2002 by members of Wine Institute and the California Association of Winegrape Growers (CAWG), has earned the California wine community a reputation as the wine world's leader in the adoption of practices that are environmentally sensitive, socially responsible and economically feasible. The organizations formed the California Sustainable Winegrowing Alliance (CSWA), a 501(c)(3) nonprofit organization a year later, to promote the benefits of sustainable winegrowing practices, enlist industry commitment and assist in implementation.

In just over three years, the program has held over 130 self-assessment and action plan workshops in all major wine regions of the state, attended by nearly 1,100 winery and vineyard enterprises. Workshop participants evaluate their operations using a 490-page workbook of best management practices, developed by a Joint Committee of 50 members from Wine Institute, CAWG and other key stakeholders.

In October 2004, CSWA issued its inaugural report measuring the level of sustainable practices among vintners and growers on a statewide basis. The report is the first time an entire industry sector has used a common assessment tool to document the adoption of sustainable practices among its members and reported the results publicly. The evaluation results collected from the initial round of workshops are contained in the report, and represent 40 percent of California's 260 million case production and 25 percent of its 529,000 wine acres.

The SWP program is now using the lessons learned to improve implementation, add more sustainable practices content, build new and existing partnerships, and continue measuring the adoption of the practices.

Wine Institute photo

Plastic barriers help reduce energy costs by improving the efficiency of cooling systems in the barrel aging cellars at Buena Vista Winery in Sonoma.

WORKSHOPS. While the initial program goals for participation were exceeded, vineyards and wineries that have not yet participated will be targeted for self-assessment workshops. In addition, action plan workshops are now being held to help vintners and growers increase SWP adoption and improve scores in individual chapter areas. Grants for workshops and related activities have been provided by: American Farmland Trust for integrated pest management; Natural Resources Conservation Service (NRCS) to address air and water quality; and National Fish and Wildlife to undertake ecosystem management.

PARTNERSHIPS. Wine Institute, CAWG and CSWA are reaching out to potential partner organizations to seek funding, share resources and knowledge, and develop incentives for SWP participants. In addition, the 2004 Sustainability Report findings will be reviewed with viticulture and enology research institutions to identify priority research gaps and encourage mission-driven research that speeds SWP adoption.

WORKBOOK. The development of a new chapter on air quality, funded by the NRCS grant, involved the Joint Committee and internal and external reviewers of the SWP workbook. The next edition of the workbook will include the new air quality chapter, as well as updates. The program is also planning to translate specific chapters of the workbook into Spanish to make it accessible to more vineyard and winery employees.

REPORTING. By publicly documenting winegrowing practices through the publication of interim and full sustainability reports, the SWP program can demonstrate progress and challenges, and serve as a model for other sectors.

Governor Arnold Schwarzenegger recently awarded CSWA the state's top environmental award, the Governor's Environmental and Economic Leadership Award in 2004. California Council for Environment and Economic Balance also named Wine Institute, CAWG and CSWA recipients of the 2005 Edmund G. "Pat" Brown Award for the program's demonstration of the ideals of environmental and economic balance. The California wine community has the opportunity to further solidify its leadership position in the competitive global market place by demonstrating continual improvement in the adoption of sustainable practices.

To learn more about the program and view an online workshop calendar visit www.sustainablewinegrowing.org, www.wineinstitute.org, or www.cawg.org. Information is also available by calling the Communications Department at 415/356-7535.

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