



CALIFORNIA SUSTAINABLE WINEGROWING ALLIANCE



Spring 2011 Sustainable Winegrowing Highlights

The Business Case for Sustainable Winegrowing: Scouting for Pests at Jordan Vineyard & Winery

Come springtime, Jordan's Viticulturist Brent Young puts on his walking shoes.

"In early spring I walk every block twice a week," says Young, who along with Vineyard Manager Dana Grande, oversee 264 acres of the winery's estate vineyard in Alexander Valley.

While Young is looking at the overall health of the vineyards and vines, he's also looking out for pests such as certain types of mites and thrips that stunt new growth on grapevines. "When I started here in 2008, I was warned about both pests, particularly in a few key areas of the ranch. I noticed that as spring progressed and the cover crops began to dry out, thrips would jump from the cover crop onto the vines."

Although he was tempted to cultivate the cover crops to incorporate the organic matter and potentially disrupt the pests' lifecycles, Young knew that cultivating at the wrong time could cause a potential surge of nitrogen into the soil and affect the vines' ability to set fruit.

Young takes a more precision-oriented approach, essentially walking through each block, checking new growth, pulling leaves, and examining them with an instrument resembling a jeweler's loupe. "I literally count the mites on each leaf," he says.

As he goes through the vineyard blocks, Young uses tape to flag vines and rows with the highest pest pressure, keeping detailed records of his findings. "You can see a pest population build as you move

across a block, and by keeping records, you can also start to see trends from year to year," he notes.

This early season "field scouting" and the data collected are valuable for several reasons. If he catches a growing mite population early enough, he can release predatory *Occidentalis* mites to help reduce problem mites early in the spring. Year-on-year data helps Young and Grande determine what cultural practices, such as cover cropping, cultivation or irrigation strategies, might be useful in limiting the spread of harmful pest populations.

Mapping the vineyard has helped Young reduce treatments and gain significant cost savings. "Before, we would spend around \$70 an acre to control specific pests," says Young. "Now, since we scout often and have adjusted our practices and timing for cultivation, we have the ability to shrink input costs or remove them altogether."

"For instance, we had a hillside area which was prone to mites, but after changing a few of our early season cultural practices and by scouting, mapping and keeping records, I realized that 90% of the mites were in one section of the vineyard. We ended up working on this one spot – about two acres out of a 21-acre block – which saved us over \$1,300."

Jordan Vineyard & Winery is committed to precision farming techniques and sustainable winegrowing. Young says it pays off to learn quickly from peers and surroundings because "knowledge is power."



Jordan Viticulturist Brent Young checks for pests on a leaf sample to help determine the winery's early season cultural practices. Photo by Matt Armendariz.

OTHER SUSTAINABLE PRACTICES AT JORDAN

- Three-quarters of estate acreage dedicated to natural habitat.
- Jordan takes into account the impact every viticultural and wine-making decision has on the native ecosystems under its care.
- Among the first wineries certified in the Sonoma Green Business Program (1999) and in the Bay Area Green Business Program (2000).
- Winery energy use was certified carbon neutral in 2009.
- Use of ground cover and composting, beneficial predators and water recycling.

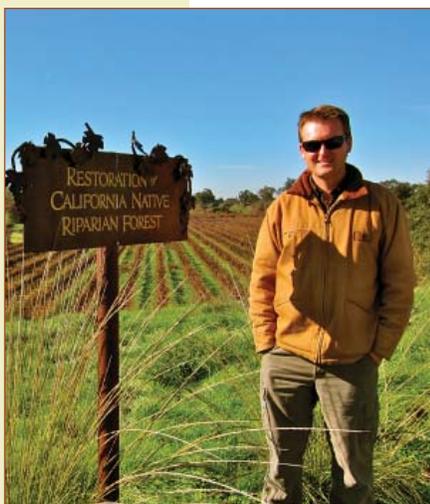
STUDENT HABITAT RESTORATION PROJECT BUILDS BENEFICIAL INSECT POPULATIONS

Vino Farms has been restoring the environment surrounding its vineyards as much as maintaining the health of the vineyards themselves. Several years ago, they undertook a project to restore nearly 23 acres of habitat bordering its Grand Vin Lands Vineyards and the Mokelumne River in Lodi. Designed to improve bird, insect and wildlife habitat, the project involved removing invasive non-native vegetation – such as the Chinese tree of heaven – and replacing it with native species such as oaks, cottonwood, primrose willow, native blackberry and valley elderberry.

Working with a program called SLEWS (Student Landowners Education Watershed Stewardship) which engages local high school students in experience-based learning through ecosystem restoration work, Vino Farms gradually transformed this acreage into a vibrant riparian habitat for hawks, waterfowl, fauna, as well as several species of wasps which prey on crop-damaging leafhoppers.

“In addition to restoring the land to its natural state, this habitat provides a nectary resource for wasps and other insects which are beneficial to our vineyards and – because they lessen the need for applications – to our bottom line,” says Chris Storm, Vino Farms Viticulturist.

For more information, on SLEWS, go online to: <http://www.land-basedlearning.org/slews.php>.



Viticulturist Chris Storm shows a restoration project undertaken by Vino Farms. Photo courtesy Lodi Winegrape Commission.

Weather Station Pays Off at Vino Farms

Although mites, vine mealybugs and leafhoppers are worrisome to Chris Storm, Viticulturist for Vino Farms' Lodi operation, there is perhaps no greater headache than the threat of powdery mildew.

“It can spread like wildfire across a vineyard,” says Storm, who explains that unlike most pests and weeds, the economic threshold for powdery mildew is *zero* at Vino Farms. Nobody wants the quality and taste of their wines to be compromised, he explains.

Vino Farms has 4,300 acres of vines in the Lodi/Clarksburg region, all certified under the Lodi Rules for Sustainable Winegrowing. Vino Farms manages a total of 14,000 acres of vines in eight California counties and is also a participant in Certified California Sustainable Winegrowing, Sustainability in Practice (SIP) Vineyard Certification Program and Fish Friendly Farming.

Because powdery mildew requires living plant tissue to thrive, Storm and his team begin vigilantly monitoring for it in the springtime, beginning with budbreak. That's also when he begins to

use the Powdery Mildew Index (PMI), a University of California at Davis-developed weather monitoring software system built into weather stations placed in Vino Farms' vineyards. Every day, from budbreak through veraison, Storm receives a daily email with a “weather report,” outlining all the pertinent data along with a mildew “pressure rating” – low, medium or high. The data can also be relayed by text or phone if a grower prefers.

“Powdery mildew doesn't grow well in extreme cold or heat. It needs to be between 70°-85° degrees for at least six continuous hours for three consecutive days,” explains Storm. “If those weather conditions don't occur – which the PMI monitors tell us – we know we can hold off on any treatments.”

And delaying or avoiding powdery mildew treatments result not only in less soil compaction in the vineyard, but also in big cost savings. “Between the labor, the diesel and the product itself, one application in our Lodi vineyards can cost \$65,000 to \$75,000,” says Craig Ledbetter, VP of Sales/Partner at Vino Farms, a multi-generational family business owned and operated by the Ledbetter family. “Eliminating one or two events has a significant impact on the bottom line.”

In 2009, for instance, an unusually cool spring meant that Vino Farms was able to delay inputs for a month and a half. “From budbreak until mid-May, we didn't need to do one application,” says Storm.

For information about the Powdery Mildew Index and the UC Statewide Integrated Pest Management Program, go to: <http://www.ipm.ucdavis.edu/PMG/r302100311.html>.



A weather station provides a daily email report that includes a mildew pressure rating, used to determine a course of action to prevent powdery mildew. Photo courtesy Vino Farms.

The Dollars and Sense of Barn Owls at Bargetto Winery

Although comparisons to the 1980 hit comedy *Caddyshack* may be inevitable, John Bargetto of Bargetto Winery in the Santa Cruz Mountains understands all too well that gophers – which proliferate in the spring – are no laughing matter.

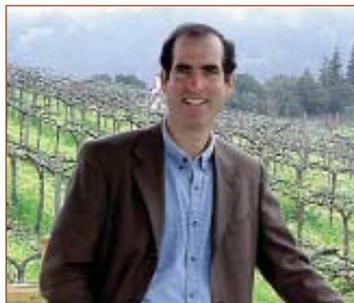
“They kill grapevines, plain and simple,” says the third generation vintner, who oversees Bargetto’s 40-acre Regan Estate Vineyard. “A gopher can eat through 100% of a vine’s roots. One week you’ll walk by a 20-year old vine and it’s perfect; the next week you’ll kick the same vine and it swings like a pendulum. The root system has been wiped out.”

In the past, gopher tunnels were often filled with a mixture of propane and oxygen and ignited, but it didn’t work, he explained “The gophers usually came right back.” But 10 years ago, Bargetto and many others in the industry hit upon barn owls as a more effective and natural solution.

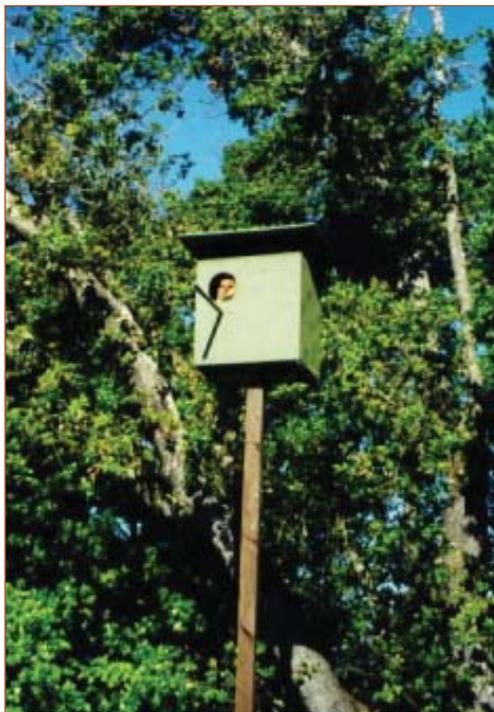
Using a “if you build it they will come” mentality, Bargetto erected two 15-foot high posts topped by owl nesting boxes designed to attract these natural predators of gophers. Facing the boxes away from prevailing winds and the trees that surround his vineyard (to avoid owl predators), Bargetto waited, and within six months, he had an owl. “It was a great natural solution,” says Bargetto, who notes that his vineyard crew also sets gopher traps to augment the work done by the owls.

Bargetto thinks that even with the traps, the relatively small investment he made to attract owls has more than paid off. “Over the last decade, I estimate that owls in each owl house would have eaten one gopher per night and that perhaps 5% of those gophers would have killed one plant per year (36 vines). Calculating the loss from this represents over \$6,000 in lost income,” says Bargetto. “This doesn’t count the labor costs the winery would have incurred to set more traps.”

“Considering it’s only a couple hundred dollars for each nesting box, keeping those Pinot Noir vines in production has been a pretty good return on investment.”



Sustainable practices are “wise investments that pay for themselves,” says John Bargetto



Gopher-preying owls help prevent the loss of some three dozen vines annually at Bargetto. Photos courtesy of Bargetto Winery.

BARGETTO SUSTAINABLE PRACTICES

For Bargetto Winery, the close proximity of its Regan Estate Vineyard to the ecologically diverse Monterey Bay Sanctuary is a constant reminder of the importance of growing and making wine in a sustainable manner. “I believe these practices are a good thing to do in that they are wise investments that pay for themselves,” says John Bargetto. “They are the right thing to do in that we have a duty as individuals, as growers and business owners to do our part to create a more sustainable world.” Sustainable practices at Bargetto include:

- Planting cover crops, especially crimson clover, to attract beneficial insects and add nitrogen and organic material to the soil.
- Opening the vine canopy with a lyre trellis system along with fruit thinning and removal of excess shoots and leaves to prevent powdery mildew.
- Using a 3.0 kilowatt solar system that covers most of the electricity used for pumping water from the vineyard’s well. “My forecast shows that this system will pay for itself in 6.6 years and realize about \$2,000 per year after that.”
- Replacing incandescent bulbs with energy efficient fluorescent bulbs in the winery, which use less electricity and last much longer.
- Insulating the pipes in the winery’s refrigeration systems. “Refrigeration is our biggest electrical expense, and the insulation tubes are inexpensive and easy to install. I imagine they pay for themselves in the first year.”
- Installing skylights in the fermentation, barrel aging and tasting rooms to reduce electrical lighting needs.

“Collectively, between the new age light tubes and bulbs, skylights and insulation of refrigeration piping, we’re saving thousands of dollars per year,” says Bargetto. “We hope to raise the awareness of both employees and customers of the importance of developing a more sustainable world.”



California's Sustainable Winegrowing Program

Three Projects to Expand Sustainable Winegrowing Practices

The California Sustainable Winegrowing Alliance (CSWA) launched two projects to expand sustainable winegrowing education and address air quality. Additionally, Wine Institute, in collaboration with the National Grape & Wine Initiative (NGWI), is developing a third project to reduce water use and salts in process water. The three projects are being supported with \$1,275,000 from USDA's Specialty Crop Block Grant Program, along with matching funds from recipients. Project details include:

1. "Data-Driven Targeted Education to Speed Adoption of Sustainable Winegrowing Practices"

This project will help improve the sustainability of California winegrowing by identifying educational workshop needs through analyses of vintner and grower self assessments from the 2009 California Wine Community Sustainability Report. The goal is to speed adoption of sustainable practices that conserve natural resources and enhance California wine competitiveness.

2. "Field Testing A Carbon Offset and Greenhouse Gas Emissions Model for California Wine Grape Growers"

This CSWA project will field test, evaluate and implement a climate protection incentive system incorporating the DeNitrification DeComposition (DNDC) model and practices that improve air quality, reduce emissions, improve carbon sequestration potential, and promote other environmental benefits.

Project objectives are: 1) to validate DNDC using existing field data; 2) assess emission reduction and carbon sequestration opportunities associated with California wine, table and raisin grape production; 3) develop standard greenhouse gas and carbon sequestration quantification methodologies

related to winegrape production and contribute to the development of carbon accounting protocols that will enable growers to access carbon markets and address demands of regulatory organizations; and 4) provide a user-friendly web-based interface for easier access to these technologies in order to drive conservation innovation and create incentives for adoption of sustainable practices by the state's winegrowers and other specialty crop producers.

3. "Scalable Solutions to Reduce Water Use & Salinity in California Winery & Food Processing Cleaning Operations"

Wine Institute, in collaboration with NGWI, will compare and analyze current cleaning and sanitation practices of California wineries and food processors. This information will then help interested facilities select methods that offer improved environmental performance (e.g., reducing water use, minimizing chemical inputs, reducing entrained salts, reducing the volume and strength of process wastewater, and other factors). Project partners will evaluate conventional, widely used products, as well as more innovative "green" products and approaches; original work on green chemistry options will also be tested. Results will be shared with California wineries and other specialty crop processors nationwide. For further information on CSWA, see www.sustainablewinegrowing.org.

CSWA Receives GEELA Award

Former Governor Arnold Schwarzenegger last winter honored CSWA with the 2010 Governor's Environmental and Economic Leadership Award (GEELA), the state's highest environmental honor, for the California Sustainable Winegrowing Program. A 2004 GEELA recipient, CSWA received the award in the category of Enhanced Environmental and Economic Leadership. This category honors prior GEELA award recipients who have sustained exceptional leadership and demonstrate significant and robust improvements in voluntary efforts previously recognized, which conserve California's resources, protect and enhance the environment and strengthen the economy.

CSWA is a 501(c)(3) educational nonprofit organization founded by Wine Institute and

CAWG to support adoption of sustainable winegrowing practices. The program has broad industry participation with 1,680 winery and vineyard organizations, representing 70% of California's winegrape acreage and 65% of the state's 240 million case shipments, which have evaluated their operations with CSWA's Code of Sustainable Winegrowing Practices workbook. CSWA has held nearly 400 sustainable winegrowing workshops throughout California since the inception of its program.



Governor Schwarzenegger gave the GEELA award to CSWA: (l-r) Nancy Light, Wine Institute; John Aguirre, CAWG; Chris Savage, E. & J. Gallo Winery; Governor; Allison Jordan and Lisa Francioni of CSWA and Wine Institute. Photo by cityclickers.com.



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