



RIDGE VINEYARDS

Stewardship Profiles in California Agriculture
Environmental Leadership with Pest Management, Soil Health, Water Efficiency and Energy

Ridge Vineyards' history in the wine industry dates back to 1885, when a San Francisco doctor named Osea Perrone purchased 180 acres in the Santa Cruz Mountains and produced wine under the name Monte Bello. The property changed hands several times until Ridge Vineyards was incorporated in 1962 with 17 acres of vines on Monte Bello Ridge. In the intervening years, Ridge has grown to own or lease 142 acres of vineyard at Monte Bello and another 246 acres of vineyard in northern Sonoma County. Beginning in 2008 Ridge Vineyards began to incrementally transitioning to organic farming, with 184 acres certified in 2011. By the end of 2017 Ridge Vineyards will have 347 acres certified organic out of 416 total acres in winegrapes. Ridge Vineyards has the largest organic vineyard acreage in both Sonoma and Santa Clara Counties.

PROBLEM

Ridge Vineyards seeks to move away from using harsh chemicals. As a result, the company has had to figure out how to manage weeds and powdery mildew fungus without herbicides and fungicides. Another challenge is erosion, as the property is located on steep slopes in the Santa Cruz Mountains. Finally, to cut down on costs and cope with water shortages, the operation has pursued various initiatives to improve its water and energy use efficiencies.

SOLUTION IMPLEMENTED

In order to ease the transition to organic farming, Ridge Vineyards opted to not turn all its vineyards organic at once. "We took some of the easier blocks and started to get them certified first and then, as we gained confidence and figured out how to set up weed control, we have been expanding bit by bit," said David Gates, vice president of vineyard operations at Ridge. During the process, he discovered organic herbicides were not especially effective at addressing the weeds invading Ridge's vineyards. While searching for alternatives to combat weeds, he tested out several under-row cultivators. At its hilly Monte Bello site, Ridge Vineyards now relies on a machine called the Baiano. "It has a horizontal motor tiller, but it goes in and out underneath the vines," said Gates, adding, "You have to do two passes per row, but the cool thing about that is you can use a little tractor. In Sonoma, we have these little garden tractors that are 25 horsepower each.

ACHIEVEMENTS

- Decrease in water use with the implementation of monitors and sensors
- Increased organic wine quality



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-David Gates

They are much lower emissions and they are much lighter, so they have less impact on the soil.” At the Lytton Springs site, Ridge Vineyards uses Pellenc Sunflower and Gearmore Wheel Disc machines as well as the Baiano. Of the Pellenc, he said, “You can go a bit faster with that machine, and that’s good when the soil is nice and moist.” Of the Gearmore, Gates continued, “There are two discs on either side with a metal band around it, and it is set up behind the tractor and spins off the weeds. It works pretty well in the early spring, and you can go scary fast with that.”

Powdery mildew is a dilemma for Ridge Vineyards. Gates pays close attention to the powdery mildew risk index to gauge the strength and potency of the fungal disease, and guide Ridge Vineyards’ spraying schedule. “If it is warm or really cold and not optimal [for the powdery mildew], you can stretch out your intervals, so there is an opportunity to not spend too much on material,” he said. Last year, Ridge Vineyards decided to work with agricultural product firm Wilbur-Ellis on a spore-trapping program as well. Described by Gates, the program includes installing solar-powered traps with sticky films and solar-powered fans. Ridge collects spores in the traps – it has 17 of them in a 34-acre block – two or three days prior to spraying. The collections are sent to a lab to analyze the spore quantities. “You can see the spores in real time,” said Gates, elaborating, “We sprayed less because we weren’t seeing the amount of spores [that would indicate the need for more intense spraying]. Typically, if the PMI [powdery mildew index] said there was really light pressure, we would still keep a 10- to 12-day interval, but, with this, we stretched it to 14.” Unfortunately, the spore-trapping program didn’t provide complete certainty. “I was hoping it would pinpoint a particular area that was a hotspot for mildew, but it wasn’t that clear-cut,” said Gates. The program was successful enough, though, that Ridge Vineyards is expanding it.

Additional sustainability efforts at Ridge Vineyards take aim at erosion and water and energy efficiency. At its Monte Bello location, erosion is a challenge. Ridge Vineyards has tackled it by covering its bare avenues with a mix of grasses and clovers topped by rice straw. The operation has conserved water by reusing its winery gray water for irrigation purposes. To enhance its energy efficiency, Ridge Vineyards mounted solar panels on the roof of its 18,000-square-foot Lytton Springs Winery and insulated the facility with straw bales. According to an article in the Practical Winery & Vineyard Journal, the 66-kilowatt system solar photovoltaic system, which generates an estimated 80,000 kilowatt-hours per year, consists of two panel arrays and two 30-kilowatt inverters.

CHALLENGES/OBSTACLES OVERCOME

Weed and pest management are persistent challenges, especially as a vineyard shifts to organic. “There are some certified organic insecticides that do a good job killing, but they kill everything, and I don’t like to use them,” said Gates. “So, you have to get out in the vineyard, and stay ahead of pests and diseases.”

MEASURING SUCCESS

Ridge Vineyards is serious about assessing its vines. For six years, it has been measuring their interactions with the outside environment employing monitors from Fruition Sciences. “What Fruition tells you is if the vine is still transpiring in harmony with the vapor pressure deficit. If it is, then it doesn’t really need water,” said Gates. On one block of cabernet in particular, Gates wasn’t certain if irrigating the vines shortly before harvest was essential.

STEWARDSHIP PRACTICES



Pest Management



Soil Health



Water Efficiency



Energy



PROJECT PARTNERS

- Fish Friendly Farming
- Fruition Sciences
- Natural Resources Conservation Service
- Tule Technologies
- Wilbur-Ellis

“When we started in that block [with Fruition], I grew them the way I normally I do. Seven or eight days before we picked the grapes, it was warm and we irrigated them, and their transpiration didn’t change at all on the Fruition monitors, which means they didn’t need that water. The next year, which was a drier year than the year before, we just watched and watched. They never told us that they needed water. So, we didn’t irrigate, and we had beautiful fruit,” he expounded. “Fruition helps me save water and sleep at night. It does take the guesswork out a little bit.” Ridge Vineyards expanded vineyard monitoring last year by adding sensors from Tule Technologies. “Tule can look at how our vines are responding to the atmospheric conditions. It reads the whole field whereas Fruition just reads a few vines,” explained Gates with a caveat. “You need to do it for a couple of seasons, but the sensors can tell if the vines are under stress or not,” he said. “By 2017, I will decide if I want to stay with Tule, add more or move on.”

For a deeper picture of the performance of its blocks, Ridge Vineyard completes scorecards annually delving into yield and the components of the juice produced by the grapes in each block. “The vineyard team and the winery team tease that apart to see if there is something we can do to improve,” said Gates. He underscored that Ridge Vineyards has been turning out high-quality wines as its organic acreage has grown. “Making sure we have been able to address the philosophical concerns of organic, but, at the same time, maintaining good production and quality has been easier than I thought,” he said. “I was worried that the only thing we could use for mildew control is sulfur, but there are nice bio-fungicides out there that you can mix and match. I was really worried about the weed control, too.”

Ridge Vineyards’ monitoring extends beyond its vines to water and energy. It has placed water meters throughout its properties. “That helps make sure we are consistent and catch any leaks, which is especially important during the drought years,” said Gates. Moreover, Gates pores over quarterly PG&E audits. “I consider that good housekeeping. It shows you if you have issues or not,” he said.

Technology is beneficial, but Gates emphasized it doesn’t replace human oversight. “Make sure you spend a lot of time in your vineyard, so you know what your issues are,” he stressed. “And the other thing is to follow the grapes into the wine. If you sell to a winery, ask the winery what they like about them. Make sure you don’t just deliver a grape and walk away. You need to keep improving. That is the best way to stay in business.”

For more information about the stewardship practices discussed in this profile, please contact the vineyard directly. You can reach David Gates by phone at (408) 867-3233 or by email to dgates@ridgewine.com



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