Two Producers Working to Protect the Future of Wine

BY LINDSAY PATTERSON

Solar panels help Jackson Family Wines reduce their greenhouse emissions. / Photo courtesy of Jackson Family Wines

When Miguel A. Torres, the 78-year-old patriarch of Familia Torres, is asked about the worst case scenario from climate change, he doesn't talk about the future of wine. Instead, he reaches slowly into his coat jacket pocket and pulls out a stack of papers. He carefully unfolds a sheet he's carried for the past decade. Its well-worn creases are reinforced with tape, and there are notes in the margins. It's a chart of geologic time.

“In this time, we’ve had five extinctions,” says Torres as his fingers scan information that spans hundreds of millions of years. “Many scientists say we are walking ahead towards the sixth extinction. Unless there are big changes, that is what is going to happen.”

Torres hopes that his family can be as influential on the shifting climate as it’s been with Spanish wine. Since 2007, Familia Torres, which owns five wineries in Spain, one in Chile and another in California, has led the charge for the country’s wineries to reduce their contributions to greenhouse gas emissions and adapt to new climate realities.

A Familia Torres vineyard in Tremp, Catalonia / Photo courtesy of Familia Torres

Climate change poses serious challenges for wine growers. “With continued warming, it may be hard to continue growing grapes in some regions,” says Dr. Elizabeth Wolkovich, an ecologist at The University of British Columbia. Through her research on European vineyards, she’s found that harvest time is coming two to three weeks earlier than during the 1980s. Every stage of the vine growth cycle is shifting, from budburst to ripening, opening vineyards to vulnerabilities like frost and drought. These conditions trickle down into taste, aroma, alcohol content and general wine quality.

The map of where we get the best wines might be redrawn over the next few decades.

“The biggest sign [of climate change] is the emergence of new wine-growing regions, and more difficult climatic conditions for traditional wine-growing regions,” says Hervé Quénol, leader of LIFE-ADVICLIM, a research project developing adaption strategies

for wineries. In order to adapt, growers are looking to change grape varieties, farming methods, and even locations to climates formerly too cold for planting.

But there's another side of climate change within the wine world that's often overlooked. A 2013 analysis found that the wine industry is responsible for 0.3% of global greenhouse gas emissions. That's not insignificant.

The energy-efficient architecture at Waltraud Winery / Photo courtesy of Familia Torres

The creation of Torres & Earth

It began with a movie night. In 2007, Torres and his wife, Waltraud, watched An Inconvenient Truth, the climate change documentary that featured former U.S. Vice President Al Gore. They were immediately struck by the implications.
"I remember my wife said, 'We live from the earth,' " says Torres. " 'If the vines have higher temperatures, what's going to happen?' "

The following week, Torres proposed investments in renewable energy, which were quickly accepted. But it wasn't long before his vision expanded.

"It's kind of an egotist position, to say, it's going to affect our business, so let's do something and try to maybe influence the others," says Torres.

Soon, he dreamed up an all-encompassing climate change program called "Torres & Earth." The initiative filters into all aspects of the business, with the goal to cut Bodega Torres' carbon emissions 30% by 2020.

A big focus is energy. The winery installed a biomass boiler, which converts pruned vines and other organic residue into heat and electricity. The winery's solar panel array produces 29% of energy needed for the vineyard. Geothermal installations are used to control the temperature in the winemaking facilities. Even the new office air-conditioning system was chosen with carbon balance considered as part of the cost.

Familia Torres has begun other experiments with carbon capture and storage, where carbon molecules released by the fermentation process are captured and converted back into useable energy. They also perform experiments in a designated "climate change vineyard."

According to Torres, 88.2% of emissions from each bottle of its wine come from suppliers and distributors. The bottle itself is a huge part of that. Bodegas Torres repackaged some of its wines into bottles that are 15% lighter. Bodegas Torres has achieved a total carbon emissions reduction of 25.6% to date, and Torres is confident that the company will meet its 30% goal by the end of the year. Torres will then target greater reductions.

The solar-powered train at the Pacs del Penedès visitors center / Photo courtesy of Familia Torres

Launching an international effort

The industry has become increasingly concerned about climate change. In March, more than 850 industry leaders attended the Climate Change Leadership: Solutions for the Wine Industry conference in Porto, which signified wide support and interest to address climate change.

But there's still a long way to go. Labeling for organic and sustainable wines doesn't include information on a wine's carbon impact. Torres helped create Wineries For Climate Protection, a Spanish certification program for carbon reduction. Out of 800 members of the Spanish Wine Federation, only 14 have joined WFCP. To Torres, that's not enough.

At the end of February, Bodegas Torres announced the next step in its campaign. At Vinoteca Torres, Miguel A. Torres and Katie Jackson, the second-generation proprietor of Jackson Family Wines and senior vice president of corporate and social responsibility, announced the launch of International Wineries for Climate Action. IWCA's goal is to reduce carbon emissions by 80% by 2045.

Jackson Family Wines diverts recyclable and compostable items from their waste stream. / Photo courtesy of Jackson Family Wines

Jackson Family Wine's sustainability initiatives

Jackson Family Wines began its own commitment to climate change action in 2008 with a sustainability strategy that spans 40 wineries and brands held by the company. Once they had a baseline accounting of all the areas where their business created carbon, they set a goal of reducing emissions by 25% per gallon of wine produced by 2021. They met that goal three years early.

The biggest payoff in reductions came from switching to lighter bottles. Just reducing the size of the bottom punt in Kendall-Jackson Vintner's Reserve Chardonnay bottles saved 2–3% in carbon emissions.

The soil itself plays a role, too. By experimenting with low-intensity production methods, such as no-till farming and composting, carbon dioxide stays in the ground rather than being released into the air. The company also managed to cut down on the amount of waste it sends to landfills through the years, and are now up to 98% waste diversion. The efforts not only reduced the company's carbon footprint, but saved $8 million in energy costs, according to Jackson. Those savings were re-invested in their solar portfolio.

Similar to Torres, Jackson Family Wines' idea of sustainability goes beyond the carbon footprint. The company is working towards generating 50% of its energy use to on-site, renewable energy sources in their California and Oregon vineyards. Water usage has been cut by half, and they're aiming to increase water security in vineyards that are increasingly prone to drought.

The company is committed to getting out in front of climate change, but as Jackson says, "As climate change continues, there's going to be a lot of wineries who are concerned."

L to R: Shaun Kajiwara and Katie Jackson of Jackson Family Wines with Miguel Torres of Familia Torres / Photo courtesy of Jackson Family Wines

How IWCA will affect the industry

Torres and Jackson Family Wines have charted their own course to decarbonization. But the plan is for IWCA is work together to create a roadmap for other wineries to join them. That roadmap is still evolving, but Torres and Jackson agree that it begins with a greenhouse gas emissions audit and third-party measurement of a producer's carbon footprint. From there, members will be tasked to reduce emissions across what are called the three scopes: on-site emissions, electricity purchases and emissions from suppliers and distributors.

Both operations are investing in research to help smaller wineries, which they hope to export to future members. Torres has invited other wineries to see their efforts, with a demonstration of new carbon-capture technology on the horizon. The hope is that these technologies can become more affordable and adaptable across the entire industry.

"The dream is that maybe one day we can capture the CO2, all of it," says Torres. "If everyone is doing this, we will be actively reducing greenhouse gases. It would be very small quantities compared to the total [amount of global greenhouse gases], but we will be doing something."

Vineyard drones are equipped with sensors and infrared cameras. / Photo courtesy of Jackson Family Wines

Other efforts to make wine sustainable

The IWCA isn't the only effort to help wineries adapt to a changing climate and reduce their own contributions. Scientists around the world are studying the intersection of wine and climate change from all angles, in all regions.

For example, a team of German researchers proposed a plan to reuse wine bottles, saying it could reduce each bottle's greenhouse gas emissions by almost 50%. A project called MED-GOLD, a consortium of universities and private entities funded by the European Union, is developing new climate forecasting models for vineyards. LIFE-ADVCLIM, led by Hervé Quénol at France's National Center for Scientific Research (CNRS), is testing out a new digital platform for wineries to assess the impacts of climate change in their vineyards, develop strategies to adapt, and measure their own greenhouse gases. Other researchers are studying how to market these sustainability efforts to consumers.

However it happens, Torres is anxious to see the wine industry make serious changes.

"The time is past to say temperatures are rising and it's a beautiful day outside," he says from between the bottle-lined walls of Vinoteca Torres. "It's time for action. We need to decarbonize."

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