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THE POUR

Freshness in a Changed Climate: High Altitudes, Old Grapes

In its wineries, Familia Torres, a global producer, fights climate change by lowering emissions; in its vineyards, the company tries to adapt.



Miguel A. Torres, left, and Miguel Torres Maczassek, in their historic cellar. They have made climate change a priority for Familia Torres.

Credit Edu Bayer for The New York Times



By **Eric Asimov**

This is the third of a four-part series on winemaking and climate change.

TREMP, Spain — High in the foothills of the Pyrenees, outside this small city in northwestern Catalonia, one of the most unusual vineyards in the world can be found on a plateau and descending along stony slopes.



The Sant Miquel vineyard in the Pyrenees foothills is an effort to mitigate climate change by planting at high altitude.

Credit Edu Bayer for The New York Times

The more than 200-acre Sant Miquel vineyard, around 3,000 feet above sea level, includes the usual suspects: sauvignon blanc and chardonnay, merlot, cabernet franc and so on. It also contains two grapes so rare their names did not exist a few years ago.

They are called pirene and forcada, and they, along with Sant Miquel, are experiments aimed at finding solutions to the problems for wine posed by climate change. Sant Miquel's owner, [Familia Torres](#), a global wine powerhouse based in Catalonia, has made responding to climate change a company priority.

All over the wine-producing world, climate change is causing a [thorough reconsideration](#) of the hard-earned wisdom that in some cases has been passed down through generations.

Where to put vineyards, which grapes to choose, [how to farm](#), how to make the wine and how to sell it — these key issues for wine producers must all be rethought in the wake of climate change.

Already, vineyards are experiencing increased temperatures, earlier budding (which makes spring frosts a greater threat), surprise hailstorms and other natural disasters.

The overall effects of warmer temperatures on grapes are increased sugar content and lower acidity, creating wines that may be unbalanced, high in alcohol or otherwise changed in character.

“We’re facing stronger and more unpredictable events,” said Miguel Torres Maczassek, the general manager of Familia Torres, as we walked in the Sant Miquel vineyard in May. “We are the first generation that doesn’t know what we can plant.” He added, “The problem with wine is the least of the earth’s problems.”



Sandra Sabaté, a biologist, has helped Torres isolate ancient grapes that may be well suited for the changing climate.

Credit Edu Bayer for The New York Times

Mr. Torres and his father, [Miguel A. Torres](#), who led the company until 2012, have transformed Familia Torres from simply a top Spanish wine producer into an industry leader in the fight against climate change. This has meant both finding innovative ways to counter the effects of climate change on the wines and diminishing its own carbon emissions.

With six wineries in Spain, along with estates in Chile ([Miguel Torres Chile](#)) and in California ([Marimar Estate](#) in the Russian River Valley, run by the elder Mr. Torres's sister, Marimar Torres), this family company has the size to exert the sort of influence impossible for small farmers.

To make the case that climate change poses a dire threat to the wine industry and requires a concerted response, Torres has teamed with [Jackson Family Wines](#), another

international wine company based in California, to form [International Wineries for Climate Action](#).

The organization, which has set up a rigorous standard for admission, is set to announce additional members by the end of October, and will lobby others in the wine industry to make reducing carbon emissions a top priority.

Torres can lead by example. From 2008, when it audited its carbon emissions from the vineyard through transporting the finished product to market, the company has reduced its carbon output by almost 28 percent, with a goal of 50 percent by 2030, and 80 percent by 2045. This corresponds to goals for limiting global warming set out by the United Nations [Intergovernmental Panel on Climate Change](#).



Jordi Encinas, an enologist and researcher at the Torres winery in the Penedès, where small experimental lots of wine are being produced from ancestral Catalanian grapes.

Credit Edu Bayer for The New York Times

Torres's Pacs del Penedès winery near Vilafranca del Penedès, was opened in 2008 and is powered by solar, geothermal energy and biomass, a method of turning organic

matter into energy that the company says has reduced its natural gas consumption by 95 percent. Roofs and other surfaces are designed to collect rain, important as drought becomes more of a consideration.

It has a fleet of 125 electric and hybrid vehicles in Spain, including a little solar-powered train that ferries tourists around the grounds of its visitors center. Employees are offered subsidies for using bicycles, electric vehicles and solar power at their homes.

Among other steps, Torres has made carbon footprint part of its criteria for choosing supply and transportation companies. It has installed a biomass boiler fueled by vine cuttings, pomace and other materials that traditionally were burned, emitting plumes of carbon dioxide. It has encouraged local growers to bring their cuttings to Torres rather than burn them. The company estimates this saves 1,300 tons of carbon dioxide a year.



Red grapes fermenting after the 2019 harvest.

Credit Edu Bayer for The New York Times

Torres is also experimenting with sequestering the carbon dioxide produced by fermentation and putting it to work. One method is to feed it to microalgae, which

would eventually be used to produce energy. So far, Torres is capturing 5 to 10 percent of the fermentation byproduct.

“It’s a start,” Mr. Torres said.

The company has purchased land in Spain and in Chile and planted trees, part of a reforestation effort. And it has bought land at high elevations, that even today are too cold for wine grapes, but may be just right in 25 years.

“This is a very long-term project,” Mr. Torres said. “I’m not sure I’ll see the results myself.”

From a wine lover’s view, perhaps Torres’s most interesting effort to adapt to climate change has been the experimental high-altitude vineyards it has planted, including Sant Miquel; another, even higher vineyard at almost 4,000 feet in the Aragon Pyrenees; as well as a vineyard around 750 meters, or 2,500 feet, high in Priorat.