

Italy's Winemakers, and Grapes, Are Adapting to Climate Change

It has been another unnerving year in the vineyards of Italy, the current world leader in wine production. The River Po has struggled to remain wet. A glacier collapsed in the Dolomites. The Italian government declared last summer that drought had produced a state of emergency in five northern regions, citing climate change as a culprit. In 2021, even as exports hit a record \$7 billion, overall production was down about 9%.

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Letizia Patane is a good example of a what a thriving wine business can do. She grew up in a small town in Sicily, and now works a few minutes away from the place where her family has lived for generations. For centuries, that might have been a recipe for severely constricted opportunity. For many people, it still is.

But Patane is the export manager for Vini Franchetti's vineyard in Passopisciaro, Sicily, which produces acclaimed wines in the shadow of Mount Etna. She speaks English and travels the world as an ambassador for products derived from the same volcanic hillsides where her grandfather once cultivated grapes. Because of Franchetti and other marquee winemakers, Mount Etna is now a destination for wine tourism, with vans of Americans, Australians and Japanese boosting the local economy.

Andrea Franchetti, who died of cancer at 72 last December, was an iconoclast. After years in the wine business, and a stint as a restaurateur in Rome, he built his own vineyard in Tuscany in the early 1990s. He planted vines in a valley where the neighbors grew cereal but no one attempted grapes for miles around. He planted in unusually high density — as many as 10,000 plants per hectare in the valley, and somewhat less in the surrounding hills.

Sangiovese, the soul of Tuscany and the grape that defines the wine that is arguably the region's most admired expression, Brunello di Montalcino, found no purchase in Franchetti's soil.

"Franchetti didn't like Sangiovese. He didn't like Brunello," says Enea Barbieri, who wears many administrative hats at Tenuta di Trinoro, Franchetti's Val D'Orcia vineyard in Tuscany. "More than dislike, I can say he hated it, really. He liked French wine. He wanted to produce French wine in Italian soil."

Franchetti's passions seem not to have led him too far astray. The 2019 vintage of Tenuta di Trinoro, which is the Tuscan vineyard's flagship wine, with about 7,000 bottles produced annually, sells for about \$350 a bottle. A New York City retailer said it's "considered one of the most iconic wines produced in Italy."

Marketing bluster aside, that's still a remarkable statement about any wine from Italy, one of the world's greatest wine-producing nations. But it's especially flattering considering that just a few decades ago, Franchetti's Tuscan vineyard was a field.

After getting his Tuscan venture up and running, Franchetti joined the early wave of vintners who moved, around the turn of the 21st century, to Mount Etna, where he combined new ways and old on a 26-hectare property, with about 10 under cultivation. Franchetti's Passopisciaro vineyard grows what Patane says is the highest-elevation chardonnay in Europe. At the same time, the vineyard cultivates a traditional local grape, nerello mascalese, on vines that range from 80 to 110 years old, all of which are trained in a traditional Sicilian vine system called alberello.

"Old vines are very important, especially now with climate change," Patane tells me. "Because old vines have bigger, deeper roots, they manage to find water more easily compared to the young vines. They produce less, but they also produce better quality."

Deep roots are a particular advantage in Etna's volcanic soil. "It takes at least 200 years for the lava flow to break down and become soil. If you dig down, there is almost no soil," Patane says. "Everything is rocks, so the water goes down very easily because the soil is very well drained."

Grass growing between vines, and trees bearing nuts, figs, olives, apples and cherries, add to the vineyard's biodiversity. Much of Passopisciaro is on the site of a previous vineyard that was abandoned after an eruption in 1947.

Etna has been active for more than 2 million years. I ask Patane when the volcano's most recent eruption was. "Last week," she says.

Even at 1,000 meters of elevation, where Passopisciaro's highest vines reside, Sicily is hot by day and cool at night. It's getting hotter. Like other flora and fauna creeping up a mountainside in search of cooler temperatures, it's possible that Passopisciaro's vines will have to move up the sides of Etna in the future.

For now, the vineyard is grappling with the same problems that preoccupy so many other Italian winemakers: too much heat and not enough water, as well as periods of extreme weather. Carmelo Cutrufello, the winemaker at Passopisciaro, describes the trend on Etna as "drier and drier."

Except when it's not. In 2018, after a historically hot and dry 2017, the vineyard was so wet that workers applied a hydrophobic treatment to grapes and cut the vine leaves to expose the grapes to more air, the better to fend off mold. It rained so much that the water pooled in the vineyard, unable to drain. "It never stopped," Cutrufello says. "It was very hard."

Extreme and unpredictable weather increases costs, of course. Twice in recent years, a late spring frost at Franchetti's vineyard in Tuscany required an emergency response. On such nights, vineyard staff monitor a series of temperature gauges. When the temperature dips into the danger zone, crews deploy giant candles to keep the air around the vines from freezing.

"In one hour or less, we have to light up everything," says Enea Barbieri.

At 10 euros per candle, and 300 candles per hectare, the math is daunting. The candles are generally good for two uses (unless the winds are high), and are usually deployed only in the valley, where the coldest air settles. Barbieri calculates that a single unseasonably cold night typically costs 16,000 euro or more in candles and labor.

Water strategies are also costly. Franchetti's Tuscan vineyard, which has no access to public water, built a cistern in 2017, and spent more than 150,000 euros on a temperature control system for its stainless-steel vats, to keep temperatures from rising too much during fermentation. A new irrigation system, drawing on the vineyard's local water sources, is planned.

In Sicily, where the hills are steep and the pyroclastic soil takes the form of lumpy volcanic leftovers, delivering water to plants is logistically complicated. "When it's a very hot vintage and we don't want the grapes to stop ripening, we send people up with water on their backs," Patane says. "They spray a little mist on the leaves."

All of these efforts, repeated at vineyards across the great wine-growing regions of the Mediterranean, have one goal: to give winemakers the best harvest. Of course, even amid the uncertainty of climate change, nature sometimes delivers the goods unforced. The 2016 vintage in Tuscany, for example, is widely considered to have provided all that vintners could desire: There was plenty of sun and timely rains, followed by glowing reviews from wine critics.

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