

Robert Mondavi Changed Wine. His Grandson Aims to Change Farming.

By Eric Asimov in The New York Times

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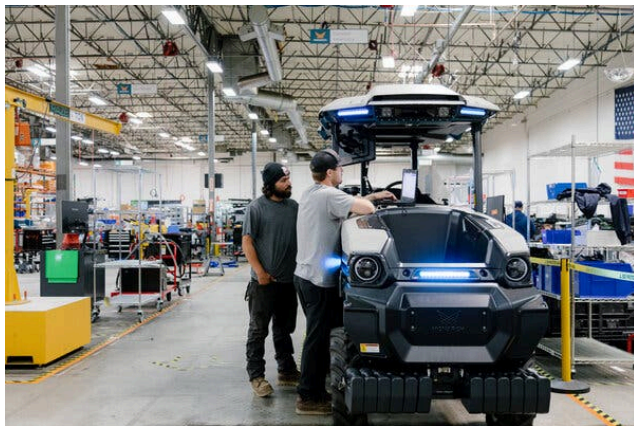
Robert Mondavi paved the way for Napa Valley to take a place among the leading wine regions of the world and raised the bar for all American producers.

By the force of his charismatic personality, Mr. Mondavi, a hard-driving visionary who established the Robert Mondavi Winery after being forced out of the family business, practically willed Napa to strive for greatness.

Now, Carlo Mondavi, a grandson of Robert, is taking on a similar role, pushing the California wine industry in a new direction born not of 20th-century aspirations but of the existential threat of the 21st-century: climate change.

Mr. Mondavi, 43, envisions something of an agricultural revolution that would rein in farming's carbon footprint, estimated at roughly a quarter of the greenhouse emissions each year. It requires a combination of regenerative agriculture, increased biodiversity and what he calls renewable farming, which is no longer dependent on the fossil fuel industry, but instead relies on renewable sources of energy.

Mr. Mondavi, a farmer and winemaker — on the Sonoma Coast, not, like his grandfather and father, in Napa — is far from the only person in wine who has tried to encourage the industry to consider agriculture as a tool for combating climate change. Plenty of farmers recognize the importance of maintaining diverse ecosystems and avoiding the use of chemical fertilizers, herbicides and pesticides.



But Mr. Mondavi, with whom I spent a day in Northern California in early May, has taken a concrete step toward helping more farmers achieve these goals by spearheading the development of the [Monarch tractor](#). This smart electric vehicle can work autonomously while serving as a sort of farm research hub that will provide growers with data about

The Monarch electric tractor can operate autonomously.
Credit...Jason Henry for The New York Times

crop health that they need to better understand their operations and make them more efficient.

“I think we can get to a place of climate stability,” he said, speaking with the elder Mondavi’s characteristic optimism and evangelical fervor, his words flowing in torrents of facts and statistics. “We can have a huge reduction in carbons and fossil fuels, but we are at the worst place now in the planet’s history.”

Tractors may seem rather prosaic elements on which to build a revolution. But they are essential agricultural tools, selling several million annually worldwide with a market expected to hit almost \$70 billion by 2027.

The problem: Most tractors are powered by diesel. They are expensive to operate and spew pollutants, especially older diesel models.

“Tractors are far worse than ordinary cars,” Mr. Mondavi said.

Enter the Monarch, a compact tractor specifically aimed at small fruit and vegetable farms, including vineyards. It relies on electric vehicle technology, robotics and artificial intelligence that Mr. Mondavi sees as a solution to the obstacles that many conventional farmers say prevent them from transitioning to organic or other more sustainable methods.

“This is technology that helps our planet,” Mr. Mondavi said. “It changes the economic dynamic, helping to make it cheaper to farm organically or regeneratively than to farm conventionally.”

Steve Matthiasson, a farmer, winemaker and vineyard consultant in Napa Valley, has two Monarchs on order and is an enthusiastic proponent.

Image



Carlo Mondavi with Praveen Penmetsa, Monarch's chief executive, at the Monarch offices in Livermore, Calif. Credit...Jason Henry for The New York Times

“The argument against organic farming, from a climate perspective, was the use of diesel to do more tractor operations rather than using synthetic chemicals to get work done,” he said. “This negates that argument. Now we can farm organically without diesel, using renewable energy.”

The tractor has the capacity to drive itself, though, as with self-driving cars, the notion can make people nervous. Still, driving a tractor is a dangerous job, particularly with vineyards on slopes. Around the world, farmers die every year in tractor accidents. Self-driving offers an additional bonus.

“It allows us to provide more opportunity for vineyard workers to be able to manage multiple tractors and more complexity, rather than one person, one tractor, which is how we currently do things,” Mr. Matthiasson said. “More responsibility, more pay, more opportunity.”

In addition, the tractor comes with a full array of cameras and sensors, controlled by proprietary software, which not only enables autonomous driving but also the gathering of a vast array of data about a vineyard, like crop health, yield estimation, insect life and moisture.

“By being able to have a better sense of exactly what is happening in different parts of the vineyard we can be more targeted with our agricultural inputs, allowing us to save

considerably, which helps the bottom line but also the environment,” Mr. Matthiasson said.

Not everybody sees the Monarch as offering revolutionary potential. Mimi Casteel, a farmer and grape grower in the Willamette Valley of Oregon and a proponent of local, regenerative agriculture, acknowledges the impact a vehicle like the Monarch can have. But she said a green tractor does little to address underlying issues in our food system, like global supply chains and farms that are vast industrialized monocultures rather than diverse ecosystems.



RAEN does not till its Sonoma Coast vineyards and aims to increase biodiversity. Credit...Jason Henry for The New York Times

“I love that he’s focusing on making change, and I think that what he’s doing can certainly be part of a future that’s more regional and sustainable,” she said. “But when I think of General Mills pouring millions of dollars into regenerative monoculture to continue making Cheerios, we’re avoiding the root causes.

“Even under clean energy, it will still be prohibitively extractive — solar panels, batteries, all these things take huge amounts of energy to build, and the materials have to come from somewhere. The effort involved in getting people to come around to regional food systems, that would be progress in my mind.”

If wine was not exactly his destiny, Mr. Mondavi was certain early in life that was what he would do.

“I always knew, from age 7, that I wanted to do whatever my grandfather did,” he recalled. “It was his passion, and my father’s.”

When Robert Mondavi Winery was sold to Constellation Brands in 2004, after years of overreaching ambition and family conflict, Carlo’s father, Tim Mondavi, Robert Mondavi’s younger son who had long played a leading role there, founded his own Napa Valley winery, Continuum. It was small and focused specifically on one wine, a cabernet sauvignon-based blend.

Carlo attended college in Aix-en-Provence, France, wanting to learn the language and the culture, but left before graduating to become, for a time, a professional snowboarder. He then worked in wineries in France and Italy. In the process, he fell in love with pinot noir.

“To join my family business was not automatic,” Mr. Mondavi said. “Continuum was a start-up and too small. I had to work outside the family. It was the opposite of being told, ‘You’re going to do this.’”

He teamed up with his younger brother, Dante, to make pinot noir, but it took them 10 years, he said, to get the blessing of his father. Finally, in 2013, they established RAEN, Research in Agriculture and Enology Naturally, which makes small lots of pinot noir on the Sonoma Coast.

“Dad didn’t want us to overextend,” he said. “He had to be convinced. Now he is supersupportive.”

The RAEN wines, from several coastal sites, are exquisite, delicate in texture, subtle in aroma and flavor, and wonderful with food, all attributes long touted by the Mondavi family.

Mr. Mondavi had long been alarmed by the changing climate, but it was the decline of the monarch butterfly that he said galvanized him to activism. Populations of the butterflies, important cogs in the food chain and crucial pollinators, have declined drastically over the last 50 years because of habitat loss and widespread use of herbicides like glyphosate. They are now classified as endangered.

Image

RAEN’s pinot noirs are delicate and subtle. It bottles a rosé annually to finance a campaign to raise environmental awareness. Credit...Jason Henry for The New York Times

He saw this happening with other pollinators, like honeybees, and became a fierce supporter of the Xerces Society, which is dedicated to conserving invertebrates. He also initiated the Monarch Challenge, a movement that encourages organic farming in Northern California by raising awareness of the dangers of chemical agriculture.

“I have friends who farm conventionally,” he said. “No one wants to harm Mother Earth.”

But he found education was not enough. The primary objections, he said, were that organic farming cost more and required far more tractor use, which caused a different set of environmental problems.

While the challenge failed, he said, it was the genesis of a new idea.

He wondered whether an electric tractor could overcome the objections. He began talking to people in the tech industry and teamed up with three like-minded veterans of the electric car and artificial intelligence industries to found Monarch in 2019.

Mr. Mondavi’s role in the development was to offer the farmer’s point of view, assessing each design idea for its practical appeal. With headquarters in Livermore, Calif., and a manufacturing arrangement with Foxconn in Lordstown, Ohio, the first tractor was delivered in late 2022 to Constellation Brands, the corporation that now owns Robert Mondavi. This year, Monarch hopes to build 1,000 tractors and to scale up to 25,000 by 2026.

With the design phase complete, Mr. Mondavi now acts as a sort of roving ambassador for Monarch, trumpeting its virtues to all who will listen, while continuing with his brother at RAEN, and spending time in Italy at Sorì della Sorba, a project with his wife, Giovanna Bagnasco, whose family produces Brandini Barolo.

“This is the hardest work I’ve ever done — seven days a week, day and night,” he said.

He described the frequent air travel as both “one of my greatest pleasures and greatest guilts.”

Yet he is driven. Like his grandfather, whose mission was to advance Napa Valley into the forefront of wine regions, Mr. Mondavi has found his own urgent calling.

“When you look at all the data, it’s terrifying,” he said of climate change. “But I believe we can rebound. I’m more optimistic now than ever when you see what can be done.”