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Bordeaux Estate Plants 300 Trees and Reduces Vines by 15% in Bid to Future-Proof Vineyards

Wineries in France and California embrace agroforestry, risking up to 50,000 lost bottles annually to combat climate change impacts.

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In recent years, several wineries in both Europe and the United States have begun planting trees directly among their grapevines, a practice that marks a significant shift in vineyard management. Traditionally, vineyards have been kept clear of shade to

maximize sunlight for grape ripening. Now, faced with the challenges of climate change, producers are rethinking these long-held methods and turning to agroforestry and agroecology as part of broader efforts to create healthier, more resilient vineyards.

At Château Larrivet Haut-Brion in Bordeaux's Pessac-Léognan region, the initiative is called the Vineyard of the Future project. The estate's general manager, Charlotte Mignon, has overseen the transformation of a 12-hectare plot known as Lagrange. After acquiring the land, the winery uprooted all existing vines and left the soil to rest—a process that will continue for another two years before new vines are planted. In the meantime, 300 trees representing 20 species have been planted in rows throughout the vineyard, along with 10,000 square meters of hedgerows and 2,000 square meters of flowering strips. The trees include fruit varieties and pawlonias, which provide shade with their large leaves and help regulate humidity. According to Mignon, these trees also sequester carbon and access deeper water sources than vines, reducing competition for water.

The project at Larrivet Haut-Brion is part of a broader ecological strategy that has been underway for 15 years. However, this specific approach—integrating trees and hedges within the vineyard—is new for the estate. The goal is not only to improve soil health but also to create corridors for wildlife by connecting food, water, and shelter sources. Water access remains a key concern; ponds and streams on the property play an important role in supporting biodiversity.

Mignon is also seeking regulatory approval to plant vines at a lower density than currently allowed by local appellation rules. The legal minimum in Pessac-Léognan is 6,500 vines per hectare; she has requested permission to plant at 5,500 vines per hectare. If approved, this would represent a significant change for both vineyard workers and wine production volumes. Mignon points out that when many Bordeaux vineyards were first planted, climate change was not a consideration. Now, she looks to Spain's low-density vineyards as examples of how adaptation can lead to high-quality wines under hotter conditions.

Across the Atlantic in California’s Napa Valley, Joseph Phelps Vineyards is pursuing a similar experiment under the guidance of chairman David Pearson. The project covers an 11-acre parcel where existing vines have been removed and cover crops sown. Trees are being planted both around the perimeter (“bio-barriers”) and in lines through the vineyard (“spines”). The aim is to bring healthy soil conditions into the heart of the vineyard rather than just its edges.

Pearson describes the effort as highly experimental due to limited available data on best practices for tree species selection, planting density, and long-term impacts on vine health and wine quality. In some areas of the parcel, different tree densities are being tested side by side. Rather than purchasing mature trees for faster results, Phelps is planting young saplings that will be allowed to establish themselves before new vine rootstocks are introduced. Fruit trees will be spaced every four to five feet along these lines.

Both Larrivet Haut-Brion and Joseph Phelps are closely monitoring soil microbial activity as part of their projects. Pearson notes that measuring carbon dioxide emissions from soil bacteria provides an indirect way to assess microbial health—a key factor in regenerative agriculture. The structure of vine roots is also under scrutiny; deep taproots with lateral branches are preferred over shallow root systems.

The integration of trees means future grapevines will grow under partial shade—an unusual scenario for most modern vineyards. Decisions about how much shade to allow and how high to prune tree canopies remain open questions as both estates gather data from their ongoing trials.

Financially, these projects require significant investment and patience. Both Mignon and Pearson declined to specify exact costs but acknowledged that reduced wine production during replanting periods represents a major expense. Mignon estimates Larrivet Haut-Brion could lose between 30,000 and 50,000 bottles annually while new systems are established.

Water management strategies differ between regions: Pearson plans to irrigate new vines at Phelps while Mignon opposes irrigation in Bordeaux due to water scarcity concerns and installation costs.

The long-term effects on terroir—the unique combination of soil, climate, and tradition that shapes wine character—remain uncertain. While improved soil health is expected, there is debate about whether such changes alter or enhance terroir itself. At Cheval Blanc in Bordeaux, another estate experimenting with tree planting (and sharing ownership with Phelps), managers insist they are not changing their terroir despite adopting similar ecological practices.

These projects reflect a broader movement away from monoculture toward more integrated agricultural systems that balance productivity with environmental stewardship. By attracting beneficial insects and other “vineyard auxiliaries,” growers hope to reduce reliance on chemical interventions while fostering natural resilience.

It may take nearly a decade before wines from these newly designed vineyards reach consumers’ tables. For now, these pioneering efforts serve as large-scale experiments whose lessons could shape viticulture for years to come—especially as climate pressures continue to mount across traditional wine regions worldwide.