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Oregon State Will Launch First West Coast Trials of Disease-Resistant Wine Grapes in 2027

Researchers will plant about 10 cultivars at each site to test whether fewer fungicide sprays preserve wine quality.

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Oregon State University plans to begin two major field trials in 2027 to test disease-resistant wine grape cultivars, a project researchers say could give growers in Oregon and across the West Coast new options to reduce fungicide use while maintaining

grape and wine quality.

The university said Monday that one trial will be planted in the Willamette Valley at OSU's Woodhall Vineyard and the other in Southern Oregon's Rogue Valley at the Southern Oregon Research and Extension Center. The multi-year effort will evaluate about 10 selected cultivars at each site, measuring vine growth, vigor, yield, and fruit composition. Researchers also plan small-scale winemaking so they can assess how the grapes perform in the finished product, not only in the field.

According to OSU, the trials will be the first of their kind on the U.S. West Coast. The work is being led by Dr. Patty Skinkis and Dr. Alec Levin, with funding from the Oregon Wine Research Institute and plant material donated by nurseries.

The project is aimed at a central problem in Oregon viticulture: powdery mildew. The fungal disease is a routine and costly threat in many vineyards, and growers often need 5 to 15 fungicide applications in a single season to manage it. For organic and biodynamic producers, spray programs tend to fall at the high end of that range, increasing labor, equipment use, and production costs while complicating efforts to lower chemical inputs.

That pressure has created interest in grape cultivars that carry stronger natural resistance to fungal diseases. OSU said newer releases from breeding programs in the United States and abroad have begun to show promise for modern wine markets. Even so, wine regions on the West Coast have remained heavily tied to Vitis vinifera, the traditional species behind many premium wines but one that generally lacks built-in resistance to powdery mildew and other fungal pressures.

Researchers say the new trials are designed to close a gap between breeding advances and local field data. Disease-resistant grapes may perform well in one climate and differently in another, especially in regions with distinct growing conditions such as the cool Willamette Valley and the warmer Rogue Valley. By placing trials in both areas, OSU is seeking a clearer picture of how these cultivars respond under different Oregon conditions.

The study will also test an issue that matters directly to wineries and the broader beverage sector: whether lower-spray grape varieties can reduce vineyard costs and treatment needs without undermining wine quality. If the cultivars perform well agronomically and in small-batch winemaking, the results could give producers stronger evidence for considering alternative varieties in commercial wine programs. The findings may also draw interest beyond Oregon, particularly in regions facing similar disease pressure and looking for ways to lower inputs as production costs rise.

OSU has framed the work as part of a broader shift already seen in other parts of agriculture, where crop improvement and disease resistance have long been used to reduce reliance on chemical controls. In wine grapes, that transition has moved more slowly, in part because of market preference for established vinifera varieties and concern about whether newer cultivars can meet quality expectations in the bottle.

That quality question is one reason the Oregon trials will include winemaking, not just vineyard measurements. A disease-resistant vine that produces healthy fruit but does not translate into acceptable wine would have limited value for premium wine producers. By including fruit composition and final wine evaluation, researchers are trying to generate practical information that growers and wineries can use when making planting and production decisions.

The research may be especially relevant in Oregon, where the wine industry has built a reputation around premium production and environmentally conscious farming. Those two goals can come into tension when disease control requires repeated spraying. A cultivar that needs fewer treatments could help some growers cut fuel use, labor, and material costs, and could also reduce the environmental footprint tied to repeated vineyard passes. But researchers are not presenting the trials as a quick replacement for established varieties. Instead, the work is intended to build reliable local data on performance, resilience, and product quality over time.

The university has not yet released the full list of cultivars that will be included in the trials. It said the selections were made carefully, with each site set to test roughly 10 varieties. Because the project is expected to run over multiple years, the results will likely emerge gradually as vines establish, produce fruit, and move through repeated

seasons of observation.

For growers, that timeline reflects the reality of vineyard decisions, which often carry long-term financial consequences. Replanting or adopting a new cultivar is costly, and most producers want clear evidence on yield, farming requirements, and marketability before making changes. The Oregon trials are meant to provide that kind of evidence under commercial-relevant conditions in two of the state’s most important winegrowing areas.

OSU said the research is intended to help the wine industry evaluate more sustainable and lower-input options as it looks for ways to make vineyards more resilient to disease pressure. The work begins with planting in 2027, but its larger test will be whether disease-resistant cultivars can prove themselves both in Oregon vineyards and in the wines made from them.