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Oregon State will plant new research vineyard blocks in 2027 to test mildew-resistant wine grapes

Researchers at Woodhall Vineyard will evaluate whether newer red and white varieties can cut fungicide use without sacrificing wine quality.

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Oregon State University plans to begin planting new wine grape research blocks in spring 2027 at its Woodhall Vineyard in Monroe, Ore., as researchers test whether newer varieties bred for powdery mildew resistance can also meet growers' standards for wine quality.

The new plantings, described during a Sept. 1 open house at the vineyard and detailed by the OSU Extension Service this week, are expected to include both red and white grapes. Additional plant material is scheduled to arrive in 2028. The work will be led by Patty Skinkis, a professor and OSU Extension viticulture specialist in the College of Agricultural Sciences and a core faculty member of the Oregon Wine Research Institute.

According to OSU, the trial will focus on improved wine grape varieties, meaning grapes developed through breeding to combine traits tied to wine quality with resistance to disease or environmental stress. At Woodhall, the main disease target is powdery mildew, a common vineyard problem that can require repeated fungicide applications.

Skinkis said interest in these varieties has been building for several years as Oregon growers asked more often about grapes with stronger disease resistance. She said she contacted researchers in other parts of the country to identify selections that showed promise both in the glass and in the field. That produced a list of about 40 varieties, which she then narrowed using Oregon's climate, nursery supply and quarantine rules.

The Woodhall research will add to long-running vineyard studies already underway there and to related improved-variety trials at the Southern Oregon Research and Extension Center in Jackson County. OSU said the new blocks are intended to help answer a practical question for growers: whether grapes bred for resistance can lower production demands without giving up the wine quality Oregon producers expect.

That question carries weight beyond the vineyard. If the varieties perform well, wineries could eventually have more options to reduce fungicide use and other inputs while maintaining fruit quality, a potential benefit for producers trying to control costs, adapt to climate pressure and serve organic, biodynamic or other lower-input wine programs.

“We want the ones that have good wine quality but have more disease resistance,” Skinkis said, according to OSU. “If it doesn’t have good disease resistance, we can just grow Pinot noir and Chardonnay.”

The Sept. 1 open house was built around more than the coming plantings. It also gave growers and vineyard managers a close look at existing work on rootstocks, irrigation limits, vine growth and pruning, all of which shape fruit yield and chemistry. Industry members walked the blocks and asked how different vine combinations might perform under Oregon conditions, including in sites with little or no irrigation.

Much of the event centered on a Pinot noir rootstock trial planted at Woodhall in 1997. A rootstock is the lower part of the grapevine, including the roots, onto which a fruiting variety is grafted. Different rootstocks can affect vigor, water use, nutrient uptake and yield. The Woodhall project compares Pinot noir vines grafted onto multiple rootstocks with vines growing on their own roots.

OSU said the vineyard has now been dry-farmed for at least 19 years, giving researchers a rare chance to study how mature vines perform without regular irrigation. Although the site continued to be managed over the years, intensive data collection had stopped after the original researcher left the university. Skinkis restarted that work after Oregon wine grape growers identified rootstocks as a research priority in 2018. Data collection resumed in 2019 and expanded in 2020.

Researchers are measuring pruning weights, canopy growth, yield, cluster number and weight, berry number, fruit chemistry and nitrogen in both vines and fruit. Skinkis said the team is also examining how rootstocks influence potassium, acidity, pH and nitrogen, factors that can affect winemaking decisions and wine style.

At the open house, she pointed to clear differences among rootstocks. Vines on 5BB and 1103 rootstocks produced some of the largest canopies while showing relatively low water stress, a result that challenges the idea that bigger canopies automatically mean higher stress. Skinkis said those vines are able to support larger growth partly because they are not under the same level of strain. But more vigor is not always an advantage. She said 5BB can become so vigorous that fruit set suffers in some conditions.

By contrast, Riparia Gloire produced smaller vines at Woodhall while still showing substantial water stress. Another rootstock, 4453, has remained among the lower-vigor choices in the trial. OSU said 125AA has been near the higher end for pruning weight, vine size and yield.

Skinkis told visitors that the goal is not to label a rootstock simply as high vigor or low vigor, but to match a rootstock to a vineyard site in a way that reduces the need for extra irrigation or other inputs. That approach may become more important as growers weigh how to manage sites under drier conditions or tighter budgets.

The open house also included a separate Pinot noir pruning trial that grew out of questions from growers about how vines respond to different pruning levels. The study compares conventional cane pruning with long spurs, short one-bud spurs and minimal or no pruning. It also includes two vine spacings so researchers can see how spacing and pruning interact.

Skinkis established those treatments on March 19, near bud break. She said she had expected the unpruned vines to break bud later, but the opposite happened. Vines that were not pruned started pushing buds sooner.

As the season continued, the minimally pruned vines developed dense canopies and heavier crop loads. They also began yellowing and stopped shoot-tip growth earlier, which Skinkis said may reflect the heavier demand that a large crop places on the vine’s resources.

OSU said the vineyard kept its normal spray program during the trial, but other management was reduced where possible. Shoot thinning was skipped except in the conventionally cane-pruned treatment, and limited shoot positioning and hedging were used to keep the vines manageable.

One issue remains unsettled for next season. Skinkis is considering whether to return the minimally pruned vines to conventional management in 2027 to see how easily they can be retrained, or to continue the treatment for another year. The broader question, she said, is whether minimal pruning mainly creates a disorderly vineyard or whether it also has longer-term effects on vine performance.

The open house drew people who work directly in Oregon vineyards, including Becky Schiefelbein, a viticulturist with Ackley Brands. As she walked the rows with Skinkis, Schiefelbein asked about irrigation, rootstock and cultivar combinations, and how rootstock decisions could hold up under future growing conditions. She told OSU that she follows Extension meetings and field events as part of continuing her viticulture education.

That exchange reflects part of the university’s strategy. Rather than limiting research to data tables or conference talks, OSU is using field days to let growers stand inside the trials, compare vine responses and connect the findings to commercial vineyards. The coming improved-variety blocks are expected to extend that same model into another set of decisions that matters to the wine business: whether disease-resistant grapes can support both marketable wine and lower vineyard costs once the vines mature enough to produce fruit for winemaking and tasting.