

Cover crops make vineyards more sustainable, and strategy can be marketing tool

December 6 2021, by Jeff Mulhollem

Under-vine groundcover



Under-vine herbicide strip



Under-vine fescue

Excessive precipitation events have greatly increased in frequency and severity in some grape-growing regions, including the U.S. Northeast. The researchers demonstrated that either natural or seeded “under-vine vegetation” can help mitigate many of the problems associated with excessive

precipitation. Credit: Michela Centinari/Penn State / Penn State

Growing cover crops under grapevines in vineyards can reduce erosion, enhance soil health, reduce herbicide use and improve water quality, according to a team of Penn State researchers, who suggest that growers can promote improved sustainability in production as part of a marketing strategy that may result in consumers being willing to pay more for wine.

"With so many wineries not only in Pennsylvania but throughout the country vying for consumer dollars, emphasizing [sustainability](#) is one way to differentiate themselves from competitors," said researcher Kathy Kelley, professor of horticultural marketing and business management. "We know that Gen Z and millennial consumers, especially, have a profound interest in sustainability and are very environmentally conscious."

A large percentage of both groups—and many older consumers, too—will respond favorably to winery marketing that emphasizes the sustainability of their operations, she added.

"But in today's world, sustainability can mean almost anything, and we're seeing a consumer group that wants to be educated and wants to know exactly what is going on with sustainable wine production," Kelley said. "So, being descriptive about what it actually means to include [cover crops](#) in a [vineyard](#) is a way to be attractive to them."

Cover [crops](#) in vineyards are increasingly relevant, contends another member of the wine and grape team in the College of Agricultural Sciences, Michela Centinari, associate professor of viticulture. She pointed out that excessive precipitation events have greatly increased in frequency and severity in some grape-growing regions, including the

U.S. Northeast, due to climate change.



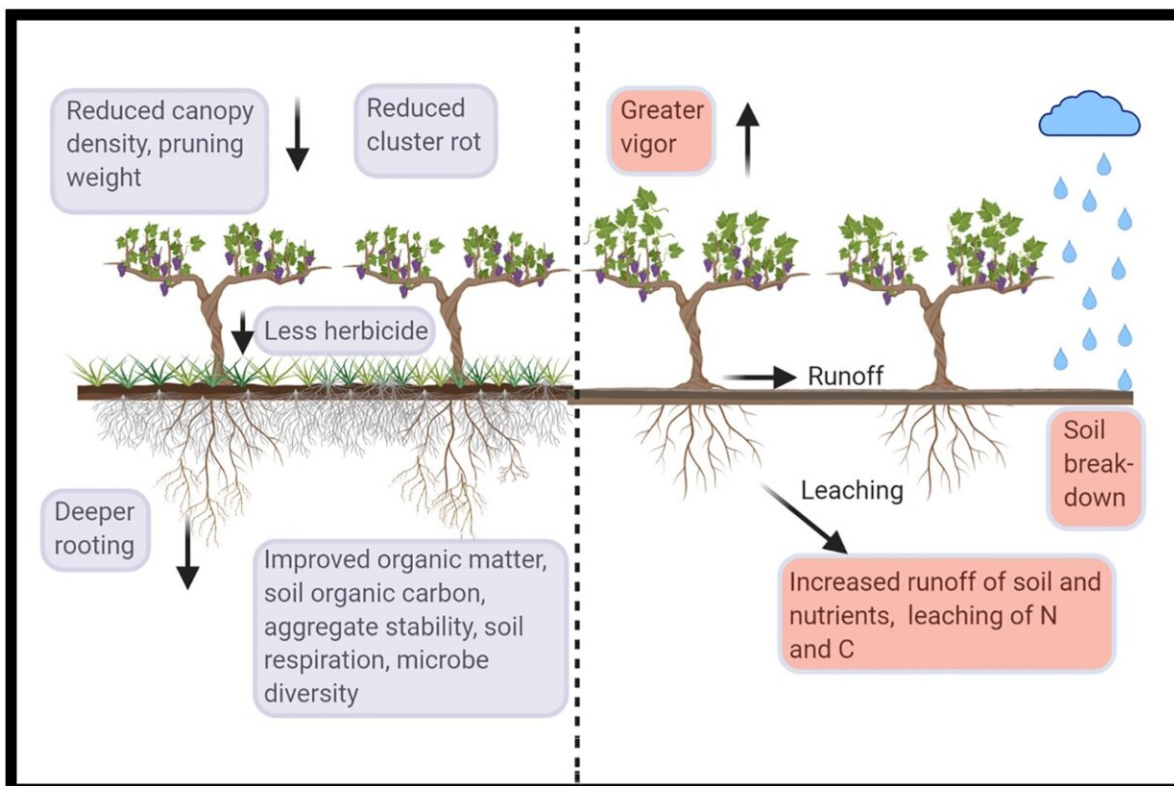
The results of this study should motivate grape growers in Pennsylvania and beyond to consider implementing this marketing sustainability strategy to align their brand with environmentally friendly practices, the researchers said. Credit: Michela Centinari/Penn State

"These heavy downpours result in myriad problems in vineyards, including erosion and soil runoff, nutrient leaching, excessive vine vegetative growth, and diseased fruit," she said. "The negative impacts of excessive precipitation events on vineyards are made worse by the

maintenance of bare soil under the vines."

Centinari co-authored a study to determine whether vegetation growing under and around vines could solve these problems, and it turns out it can. In findings recently published in *Frontiers in Plant Science*, Centinari and Justine Vanden Heuvel, a plant scientist at Cornell University, demonstrated that either natural or seeded "under-vine vegetation" can help mitigate many of the problems associated with excessive precipitation.

The cost of seeding and mowing under-vine vegetation—or cover crops—can be far greater than applying herbicides, Kelley noted, but she suspected that many consumers are willing to pay more for a wine they know is produced more sustainably. To find out, she conducted a study to characterize several wine consumer groups that were "likely" to sample—taste before purchasing—wine from vineyards using cover crops.



This diagram shows the impact of soil management utilizing under-vine vegetation vs. bare soil, on grapevines and soil. The violet boxes represent ecosystem services in vineyards with high-vigor potential; red boxes represent ecosystem disservices. Credit: Michela Centinari/Penn State

Kelley and colleagues recently reported in *International Journal of Wine Business Research* that 72% of 956 wine consumers from the mid-Atlantic region surveyed were willing to pay \$18.99 for a 750-ml bottle of wine, which included a \$1 surcharge to cover associated sustainable production costs, including cover crops. Additionally, of that group, 26%—195 wine consumers—indicated that they would be willing to pay \$20.99 for that same bottle of [wine](#).

"Our results should motivate [grape growers](#) in Pennsylvania and beyond to consider implementing this marketing sustainability strategy to align their brand with environmentally friendly practices," Kelley said.

"Growers often need to be convinced that [consumers](#) are willing to pay for tactics like using cover crops in vineyards."

More information: Justine Vanden Heuvel et al, Under-Vine Vegetation Mitigates the Impacts of Excessive Precipitation in Vineyards, *Frontiers in Plant Science* (2021). [DOI: 10.3389/fpls.2021.713135](#)

Provided by Pennsylvania State University

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