

‘It’s the only way we’ll have Cabernet Sauvignon in 50 years’ — Disease-resistant gene-edited ‘SuperGrapes’ can help farmers control pernicious powdery mildew that’s destroying vine crops

Powdery mildew comes from a fungus called *Erysiphe necator* that’s native to eastern North America. While America’s native grape species have developed some resistance, *Vitis vinifera* have not. Particularly vulnerable are some of the world’s most popular varieties, including Chardonnay, Riesling, Cabernet Sauvignon, and Sauvignon Blanc.

The disease’s impact on the grape industry, both [financially and environmentally](#), is significant; it’s the reason for the majority of its pesticide use. As a result, the industry has invested considerable resources into finding more effective ways to combat it. Now, new research is offering a ray of hope for mildew-fighters everywhere. The [VitisGen research collaboration](#), a grape breeding project now in its third iteration, is working on a disease-resistant ‘[SuperGrape](#).’

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After creating genetic maps for more than 20 *Vitis* families during the *VitisGen2* project, researchers working on *VitisGen3* are now using the data to choose and test candidate genes that are responsible for mildew resistance. Using gene-editing technologies like CRISPR, the researchers will remove those candidate genes and insert them into other grapevines, and then test them against powdery mildew to see how they respond. The goal is to better understand the genes’ functions, similarities, and differences, which will allow them to isolate favorable characteristics—and possibly lead to a super-resistant SuperGrape.

[This is an excerpt. Read the original post here](#)