vinetur

French review finds grapevine rootstocks shape yield more than wine chemistry

Drawing on about 60 experiments, researchers said local soil, climate and grafted variety still govern how strongly rootstocks perform

Thursday, November 12, 2026



French researchers and industry groups have completed a broad review of grapevine rootstock trials that sharpens guidance for vineyards trying to cope with drought and other climate pressures, while confirming that rootstock choice has a much stronger effect on vine vigor and yield than on acidity or alcohol levels in the finished fruit.

The work was carried out from 2023 to 2026 through the PGVigne.net project, part of France’s national vineyard sustainability plan. According to Réussir Vigne, the project brought together results from about 60 experiments covering roughly 20 rootstocks, from widely planted materials to less common or foreign-origin options. The aim was to strengthen existing knowledge on the best-known rootstocks and build a better picture of those that have been used less often.

Taran Limousin, a plant material engineer at the French Wine and Vine Institute, or IFV, said rootstock selection is an important tool for adapting vineyards to climate change, especially through the vigor it gives the vine and its tolerance to water deficit. That makes the findings relevant beyond academic research. For the wine business, planting decisions made now can shape grape supply, vineyard costs and resilience for decades, which is why more precise rootstock data could matter for growers, nurseries and advisers serving the broader beverage sector.

The analysis combined trial results from selection partners in the CTNSP, the IFV site at Espiguette, Bordeaux’s INRAE research institute and input from vine nurseries. The review confirmed known differences among rootstocks in vigor and yield, but it also underlined how strongly those outcomes still depend on local conditions such as climate, soil and the scion variety grafted on top.

Arthur Frohely of the Alsace wine interprofessional committee said the results should be read as trends rather than fixed rules because of that variability. He added that the yield increase associated with a rootstock remained moderate in the analysis, reaching a maximum of 14%. Sébastien Julliard of the Charentes vineyard conservatory said the most vigorous rootstocks are not always the ones that deliver the highest yields, a point that could complicate simple assumptions about drought adaptation and production goals.

By contrast, the project found that rootstock choice had only a very limited effect on acidity and alcohol content. That conclusion may help narrow expectations for what rootstocks can and cannot change in grape composition. For producers focused on wine style and balance, the findings suggest that rootstocks remain more important as a structural agronomic decision than as a direct lever on final alcohol or acid levels.

The review also highlighted the potential value of some lesser-known vigorous rootstocks for drier conditions, including 333 EM and 140 Ru. Researchers involved in the project said those materials may offer better adaptation to drought, but they also come with practical constraints. Julliard said producing some of the most vigorous rootstocks can be more difficult, which reduces their appeal for nurseries. He also noted that some candidates, including 197-17 Cl, are not suited to calcareous soils, limiting where they can be planted.

The project went beyond field-trial synthesis. It also included measurements of plant establishment at IFV Grau-du-Roi, where the average take rate was 63%. That outcome was influenced more by the scion than by the rootstock, according to the report. Researchers also surveyed nurseries about rootstock cultivation and grafting practices, adding a commercial and technical layer to the field data.

The main findings are due to be added to the PlantGrape website, a platform intended to help growers and advisers compare options. Limousin said the integration should support rootstock decisions in practice. A webinar presenting the main PGVigne.net results is scheduled for December 15.

At the same time, a separate effort has begun to add new rootstocks to France’s official national catalog. A group of CTNSP member organizations has started evaluating varieties both in mother-vine blocks and for the traits they pass on under northern, southern and oceanic conditions, with trial zones in Champagne, Aude and Charentes. Since 2026, lighter protocols have also been introduced in other regions to expand the assessment of the strongest candidates.

Julliard said that by 2028, the group expects to be able to say whether some already registered varieties, including BC 2, 1447 Paulsen and 34 EM, should be multiplied more widely. He said new registrations could also be considered for materials such as

Ramsey and 107 Vidal.

The updated data arrive as French vineyards, like many wine regions elsewhere, face more frequent heat and water stress. Rootstock decisions are usually made long before a vineyard reaches full production, and growers cannot easily reverse them once vines are planted. In that context, a larger evidence base on vigor, yield, drought tolerance and nursery performance could shape future vineyard renewal and, over time, influence the stability of grape supplies used across the wine trade.