



## Correlation between agronomic performance and resistance gene in PIWI varieties in the field

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Today's viticulture faces a considerable challenge dealing with fungal diseases and limitations on the use of plant protection products (PPP) have increased the pressure to find more sustainable alternatives. One strategy may be the development and cultivation of disease-resistant grapevine varieties (PIWI) that could maintain crop productivity and quality while reducing dependence on PPP. In this work a set of 9 PIWI varieties (5 white and 4 red) deploying genes for resistance to powdery and downy mildew were evaluated in two consecutive years in Valdegón, La Rioja, with Tempranillo and Viura as controls. The objective was to correlate agronomic performance and disease incidence with the presence of disease resistance genes in two different seasons: with (2023) and without disease pressure (2022).

Results showed that genotypes harbouring more than one resistance gene such as Soreli (Rpv3 + Rpv12), S. Rytos (Rpv 3 + Ren3) or Julius (Rpv12 + Ren3), are more resilient to both diseases, regardless of whether both are against the same disease, suggesting a synergistic effect. Moreover, cultivars more resilient to both mildews did not show any reduction in yield, compared to C. Volos that showed a 42,5% reduction, S. Kretos about 50% or controls Viura (62,3%) and Tempranillo (65,5%) in productivity during the disease-pressured season. Further research will focus on the role of rhizospheric microbiome on disease incidence.

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