

Cultivar name: **JOHANNITER**

Parents: Merzling x Freiburg 986-60

Breeder: Johannes Zimmermann

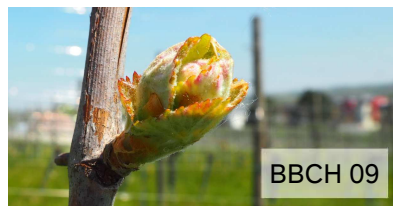
Resistance genes:

versus powdery mildew- Ren3, Ren9

versus downy mildew- Rpv3.1

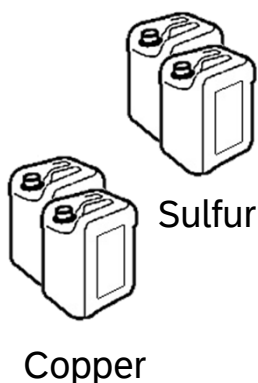
Planting year at the Institut Viti- vinicole: 2011

Powdery mildew and downy mildew are the two most destructive fungal diseases in viticulture. The cultivation of traditional grape varieties therefore requires extensive crop protection measures. Newly bred grape varieties, so-called PIWIs (fungus-resistant, abbreviation of the German term pilzwiderstandsfähig), exhibit greater resistance to the pathogens. As part of the [PIWI<sup>3</sup>](#) project funded by the Ministry of Agriculture, Food and Viticulture, the PIWI cultivars planted on the experimental plots of the Institut Viti-vinicole are examined in three dimensions: (1) agronomic, (2) economic, and (3) concerning their environmental impact. The well-known traditional varieties Pinot noir (for red varieties) and Rivaner (for white varieties) serve as comparisons.

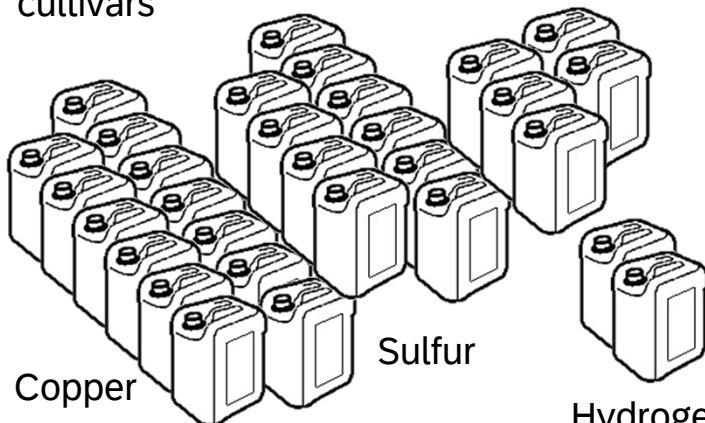


Expenses for crop protection (2023-2025, average)

PIWIs



Traditional cultivars



Phosphonate

Difference  $\approx$  720€ per ha and season



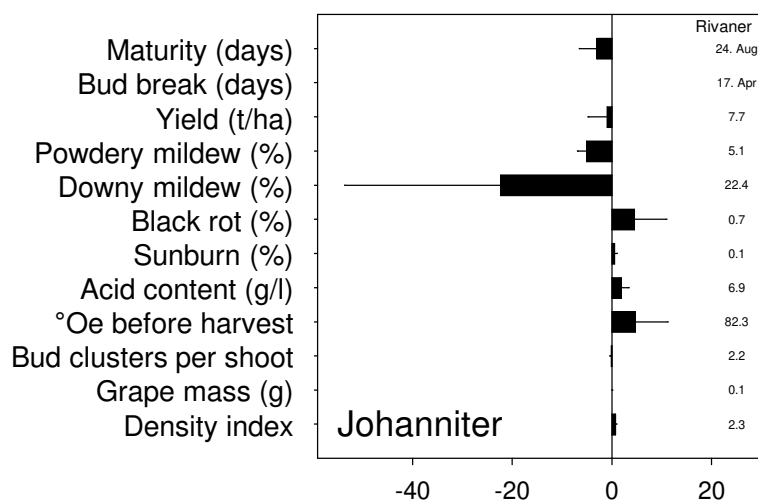
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DU GRAND-DUCHÉ DE LUXEMBOURG  
Ministère de l'Agriculture,  
de l'Alimentation et de la Viticulture  
Institut viti-vinicole

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AND TECHNOLOGY



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## Agronomic comparison with traditional cultivar Rivaner (2023-25)



Average difference compared with cultivar Rivaner over the period 2023-2025

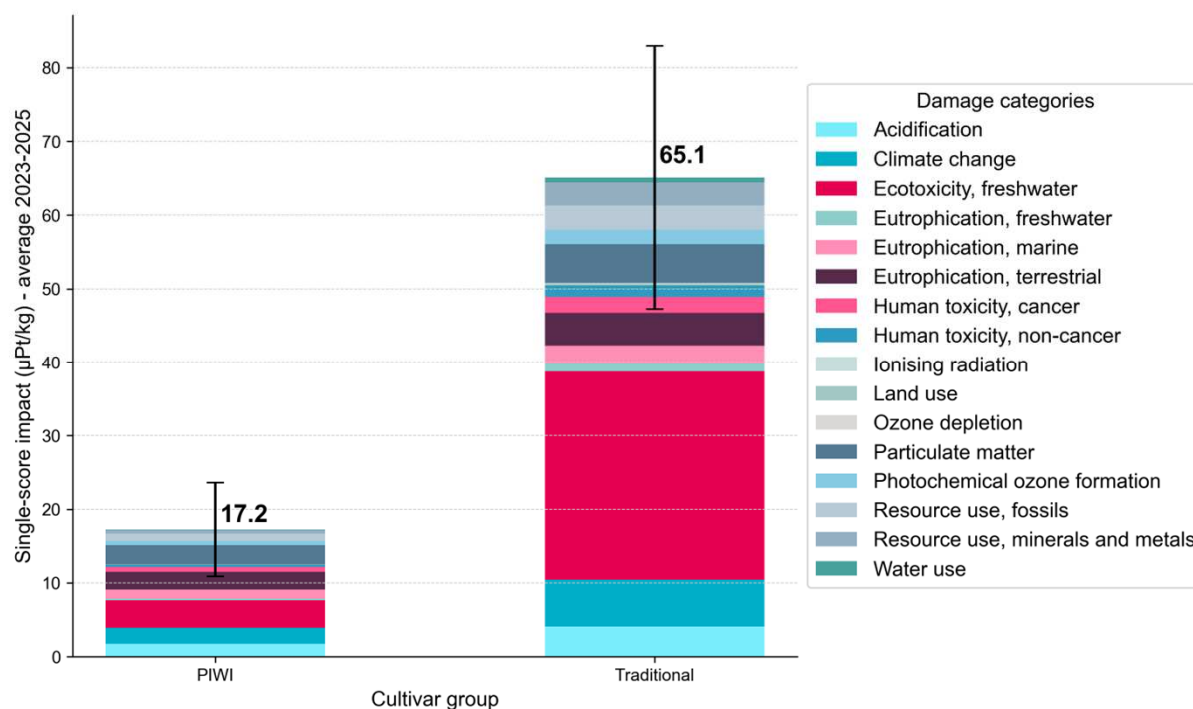
### Chances:

- Very low susceptibility towards
  - Downy mildew and
  - Powdery mildew
 allows significant savings in crop protection

### Risks:

- Susceptible towards black rot
- Relatively low yield during the test period 2023-2025
- Tendency towards high sugar contents

## Environmental impacts (2023-25)



Where can I taste wines made from PIWIs? → [info@ivv.public.lu](mailto:info@ivv.public.lu)

This fact sheet was compiled within the project "Crop protection requirements, costs, and performance of fungus-resistant (PIWI) grape varieties under the growing conditions of Luxembourg (PIWI<sup>3</sup>). The project was funded by the Ministry of Agriculture, Food and Viticulture.



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