

## Exploring the influence of grapevine rootstock on yield components

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### Abstract (250 words)

Yield is an agronomic trait that is critical to the sustained success and profitability of the wine industry. In the context of global warming, overall yield tends to decrease. Rootstock has been identified as a relevant lever for adaptation to changing environmental conditions. The aims of this study are; i) to finely identify the components of the yield influenced by rootstock; ii) to characterise the rootstock × scion interaction; iii) to understand the trade-off between vigour and yield. This study was conducted in 2022 and 2023 in the GreffAdapt experimental vineyard on 2 scions grafted onto 6 rootstock genotypes.

Yield was divided into several components: bud fertility, number of flower caps, bunches and seeds, bunch and 100-berry weight, and rachis architecture. We aim to determine which mechanisms such as variation of wood to bud connectivity at budburst and canopy porosity underlie rootstock effects on yield.

Rootstock had a significant effect on all yield components except fruit set in 2023. Rootstock explained between 7 and 23% of the variance of the traits measured. The 100-berry weight was the parameter most influenced by rootstock. Furthermore, in this study we were able to show a strong rootstock × scion interaction. The dominant factor for yield appears to be the number of berries per bunch, followed by the number of bunches.

The outcomes of this work are improved understanding of the influence of the rootstock on yield components and a classification of rootstocks based on conferred fertility.

**Keywords:** Rootstock × scion interaction, *Vitis*, trade-off, bunch characteristics, inflorescence primordia