

## Ugni blanc berry and wine composition impacted by thirteen rootstocks

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### Abstract (250 words)

The Cognac region is expanding, driven by the success of its renowned brandy and the demand for high grape yields to ensure a steady supply of base wine for distillation. Ugni blanc, the most widely planted grape variety, relies on rootstocks for soil and climate adaptation, providing essential nutrient supplies to the scion. Understanding the impact of rootstocks on key berry components, such as sugars and nitrogen compounds, is crucial. These compounds serve as primary precursors for the production of fermentative aroma metabolites, which, in turn, act as quality indicators for eau-de-vie. This study was conducted in 2021 in the GreffAdapt plot (55 rootstocks x 5 scions x 3 blocks) on cv. Ugni blanc (Marguerit *et al.* 2019). The effects of thirteen selected rootstocks were evaluated on various viticultural parameters as well as berry composition including detailed amino acid profiles at harvest and fermentative volatile contents of the corresponding wines, fermented under standardized conditions similar to Cognac base wine elaboration.

Among all the parameters measured, rootstock effects outweighed block effects, with significant variations in vigor observed. In 2021, low to no water deficit conditions were found. Significant differences between sugar and nitrogen compound levels in the must were observed between rootstocks with low sugar levels, typical for Cognac base wine production. Differences in amino acid concentrations and proportions were substantial leading to wine with distinct aroma profiles with 333EM and Evex13-5 having the highest concentration of higher alcohol acetate (> 3 mg/L) while RSB and Gravesac had the lowest (~ 2.8 mg/L). Although the connection between vine characteristics and wine volatiles was not apparent, aroma composition appeared linked to must composition, necessitating further investigation.

**Keywords:** Amino acids, Aroma compounds, Ugni blanc, Rootstock, Yield

**Acknowledgements:** The authors would like to thank the Experimental Viticultural Unit of Bordeaux 1442, INRAE, F- 33883 Villenave d'Ornon, for its contribution with the setting up of the GreffAdapt experimental vineyard.