

## Exploring the microbiota of resistant varieties in organic farming

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Grape varieties resistant to mildew and powdery mildew make it possible to reduce the use of phytosanitary products both in conventional and organic farming systems and as such can provide a solution to health and environmental concerns associated with fungicide use. The aim of the MicroVarioR project is to explore the microbiota of resistant grape varieties in comparison to conventional *Vitis vinifera* cultivars in various viticulture systems: conventional, organic and absence of treatment. Grapes from experimental parcels set up on two INRAE agricultural devices in Gruissan and Bordeaux, and on the Coupe Roses vineyard in Minervois, were harvested. This includes four resistant hybrid cultivars (Floréal, G5, Artaban, G14) and five traditional cultivars (Muscat, Grenache, Syrah, Carignan, Merlot). Microbiota on the surface of grape berries and at different time-points of spontaneous fermentations were analyzed with a metabarcoding approach. Relative abundance and diversity of yeast and fungal genera were compared and relative impact of different parameters were estimated. The strongest effect on microbiota diversity was linked to the geographical region, probably due to abiotic factors such as climate and soil. No statistical differences were observed between the microbiota of varieties cultivated in different viticulture systems. However, in each experimental device, cultivars were distinguishable, suggesting an influence of grape variety on the microbial community of grape berry surface. Ongoing research focuses on the effect of vintage on a broader set of resistant cultivars, and on berry composition as a determinant of microbiota variation.

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