Even in same vineyard, different microbes may create variations in wine grapes

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Choosing the perfect wine may soon involve more than just knowing the perfect vintage and chateau. Differences in the microbes present on grapes even in different parts of the same vineyard may contribute to flavor fluctuations in samples of grapes from different tanks, according to research published December 26 in the open access journal *PLOS ONE* by Mathabatha Setati and colleagues from Stellenbosch University, South Africa.

"In the wine industry, the fungal communities on grapes are especially important. The microbial species present on the berry may contribute to the fermentation process, and therefore the aromatic properties of the resulting wine", the authors explain. For this study, the researchers sampled grapes from different vines in three well-established commercial vineyards, each of which used a different farming system - organic, traditional or biodynamic- to cultivate the grapes.

Across the three cultivation practices, they found that the same yeast species dominated in all vineyards, but the least treated vineyard had more variety of fungal species than the other two. They also found that within a single vineyard, small differences between vines, such as in temperature or sun exposure, could significantly alter the composition of the fungal community on grape surfaces. Setati adds, "Our findings could help viticulturalists and winemakers plan microharvest better, and implement better wine blending strategies to ensure consistency."

More information: Setati ME, Jacobson D, Andong U-C, Bauer F

(2012) The Vineyard Yeast Microbiome, a Mixed Model Microbial Map. *PLoS ONE* 7(12): e52609.doi:10.1371/journal.pone.0052609