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di Studi Avanzati

Cabernet of Berici Hills or Merlot of the Euganean Hills: telling the difference is a matter of nose

A SISSA study shows for the first time that our olfactory system can detect whether two wines differ by *terroir*, a peculiar feature of the production area



(Immagine: Pixabay)

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Smelling wine to appreciate its aroma and peculiarities is a common practice among wine lovers and professionals. Our nose abilities are actually greater than we expected. In fact, **our olfactory system allows us to distinguish two wines differing for grape variety and, even, for production geographical area, a feature defined *terroir* by experts**. This is the evidence emerged from a new research, published in the journal *Food quality and preference*, carried out at SISSA by Francesco Foroni, now at the Australian Catholic University, together with other scientists led by SISSA neuroscientist Raffaella Rumiati and the collaboration of the University of Padua.

«**This is the first study on the ability to distinguish two wines only by their scent**» says professor Rumiati. «The research involved 32 volunteers including experts (wine producers,



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connoisseurs and sommeliers) and lay people. We investigated wine olfactory discrimination ability using a computer-controlled olfactometer. Participants had to smell the scents of Doc wines (Denominazione di origine controllata meaning Controlled designation of origin) produced in 5 different vineyards located in the Berici and Euganean hills, in Veneto, Italy».

The test consisted of 96 trials where the volunteers were asked to decide whether the two scents belonged to two different wines or by the same wine. The wines differences could be in grape varieties (for example a Cabernet and a Merlot), in different *terroirs* or in both the elements. **«The results highlight the complexity and sophistication of the human olfactory abilities» explains Francesco Foroni. «Volunteers did very well in recognizing the differences between two wines that diverged both for variety and *terroir*. Moreover, both experts and lay people were able to pick up the differences due only to *terroir*».** The *terroir* is a sort of “wine signature” that is a unique combination of physical and chemical factors that are peculiar of a specific area. This research is part of a larger multidisciplinary project called “VeneTerroir” attempting to describe *terroir* as an interactive combination of soil chemistry and biological elements.

Raffaella Rumiati concludes: **«This study demonstrates that we can “Smell the *terroir*!”**. It is an important result that gives us more information about wine perception and appreciation. Moreover it opens new interesting scenario in order to improve the quality of these products and guarantee an even greater pleasure in drinking».

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