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Aromatic complexity in Verdicchio wines.

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The evolution of analytical tools is leading to the production of data of increasing size, with more than 1000 volatiles frequently observed within a single complete gas chromatography run coupled to mass spectrometry. The interpretation of such a rich data set requires focusing on the much smaller number of key odorants and their possible synergies. This study was aimed at the recognition and identification of odorous molecules in the white variety Verdicchio, considering the wines produced in more years by some of the best Cru Marche, in the area of Castelli di Jesi Classico. Selected wines were analyzed with GCXGC-ToF-MS, GC-MS-MS and GC-O, after Solid Phase Extraction or Solid Phase Microextraction. The comprehensive profile with more than 1000 compounds allowed to separate well the different type of product. By GC-O analysis 28 main odorants were found. This survey led to the identification of 3-methyl-2,3-nonanedione (3-MND) as a possible key odorant characteristic in Verdicchio, in fact this wine from the best production areas develops a typical, positive note, described as anise. The systematic characterization of several wines, and comparison with true standard of the candidate compounds having anise among the putative descriptors (*trans*-anethole, *cis*-anethole, estragole, 3-MND, and carvone) lead us to suggest that the presence at low concentration of 3-MND is likely to explain the anise flavor in Verdicchio wines. From previous studies [1] we had discovered that this grape variety seems very rich in methyl salicylate both in the free and in the bound form. A possible contribution of methyl salicylate with minty, balsamic note as well as its possible synergic effect with 3-MND was investigated.

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References

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