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Título artículo: Effect of fermentation temperature on volatile compounds of Petit Verdot red wines from the Spanish region of La Mancha (central-southeastern Spain)

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RESUMEN:

The aim of this work was to research the relationship between volatile composition of Petit Verdot red wines and the fermentation temperature. Winemaking process was carried out at 17 °C, 21 °C, and 25 °C temperatures. Solid-phase extraction (SPE) and gas chromatography–mass spectrometry (GC–MS) were used to analyse volatile compounds. The odour activity values (OAVs) from the different compounds were classified into seven odorant series that describe the aroma profile (fruity, floral, green/fresh, sweet, spicy, fatty, and other odours). The value of each aromatic series was obtained by adding the OAVs of the volatile compounds to each series. The volatile composition was significantly affected by the temperature of the fermentation. In general, the increase in the fermentation temperature of La Mancha Petit Verdot red wines from 17 to 25 °C produced an increase in the concentration of volatile aroma compounds. The highest aroma contributions to Petit Verdot wine were fruity, sweet and floral series, followed by fatty and spicy series, regardless of fermentation temperature. The highest values of aromatic series were found in wines fermented at 21 °C. The results of this work show that changes in the fermentation temperature of wines can have a significant impact on their volatile compound profile.

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