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Título artículo: Influence of supplementing red wine with oak staves of various ellagitannin release potentials and different micro-oxygenation doses on wine colour and phenolic and volatile composition

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RESUMEN:
Aim: The aim of the study was to evaluate the effect on wine colour and phenolic and volatile composition of supplementing a red wine with different oak staves - selected using a non-invasive measurement method based on infrared spectrometry (Oakscan system) - during a micro-oxygenation treatment.
Methods and results: Aliquots of 165 liters of a Merlot wine were micro-oxygenated at two doses of oxygen (2.5 and 5.0 mg of O2/L.month) in the presence or not of oak staves of different potential ellagitannin release (PER) for three months. Micro-oxygenation generally increased colour intensity and stability, probably because it favours the formation of new pigments. The presence of staves increased the total phenolic index and the ellagitannin concentration and encouraged the combination of anthocyanins with flavanols. The greater the PER of the staves, the greater this effect was. Finally, the micro-oxygenation dose only affected the concentration of total furanic compounds, whereas the PER of the staves seemed to determine the concentrations of furanic compounds, volatile phenols and β-methyl-γ-octalactones. To be specific, the lower the PER of the staves, the higher the concentration of β-methyl-γ-octalactones (coconut notes) and the lower the concentration of furanic compounds (toasted nut notes) and volatile phenols (smoked notes). A sensory analysis of the wines confirmed this trend.
Conclusions: The main conclusion is that it is possible to use a non-invasive measurement method based on infrared spectrometry oak staves for their potential release of ellagitannins, as well as different volatile substances.
Significance and impact of the study: These results indicate that by choosing the staves winemakers can modulate both the structure and the aromatic profile of their wines.

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