

Chemical and Physical Implications of the Use of Alternative Vessels to Oak Barrels during the Production of White Wines

- Gil I Cortiella, M.
 - Ubeda, C.
 - Covarrubias, J.I.
 - Laurie, V.F.
- Peña-Neira, Á.

Abstract

Recently, the use of alternative vessels to oak barrels during winemaking has become increasingly popular, but little is known about their impact on the chemical composition of the resulting wines. To address this issue, a Sauvignon Blanc wine was elaborated from the same grape juice by using cylindrical stainless-steel tanks, oval-shaped concrete vessels, oval-shaped polyethylene vessels, and clay jars in triplicate. Each vessel was used for alcoholic fermentation and the aging of wines over its own lees. Wines elaborated in concrete vessels showed the highest pH and the lowest titratable acidity, most likely related to the observed release of inorganic compounds from the concrete walls. Little effect of the vessels was seen on the wine color and phenolic composition. Wines elaborated in clay jars showed the highest turbidity and the highest content of soluble polysaccharides, while those made using cylindrical stainless-steel tanks showed the highest content of volatile compounds. Despite the observed differences, all of the vessels tested seem suitable for white wine production since every wine showed chemical features that corresponded with the quality standards of Sauvignon Blanc wines.

Author keywords

aging on lees

clay jars

concrete vessels

oval-shaped tanks

polyethylene vessels

Sauvignon Blanc

stainless-steel tanks

white wine