

# Newsletter *Chêne Développement*

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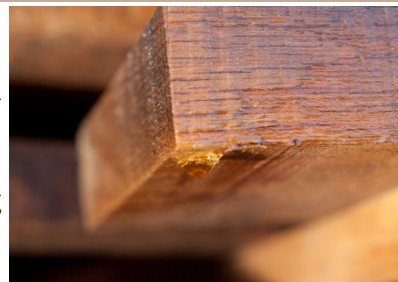
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## The *Chêne & Cie* Research and Development team

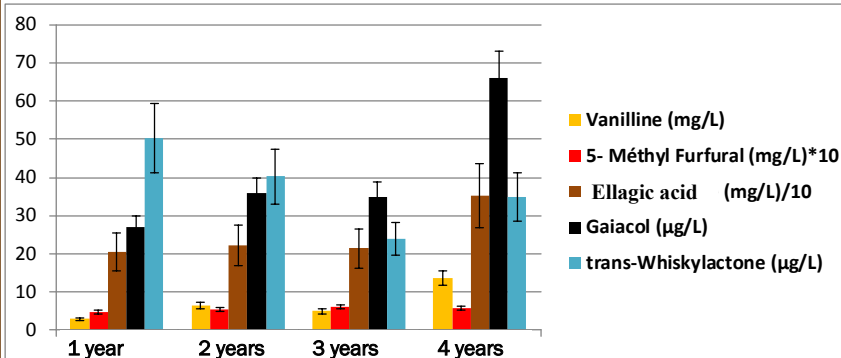
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## American oak: the benefits of extended natural ageing

The extended ageing of staves of American oak wood in a yard allows them to develop a complex range of aromas. It also promotes lignin degradation. Weather conditions contribute to the growth of microorganisms that produce the main compounds of interest in barrel-making. This process is slow and governed by the seasons. Wood that ages in this way will bring the wine more volume and sweetness. We tested this by undertaking an ageing experiment using barrels made with staves aged naturally in a yard for 1, 2, 3 and 4 years.



### Chemical markers of natural ageing

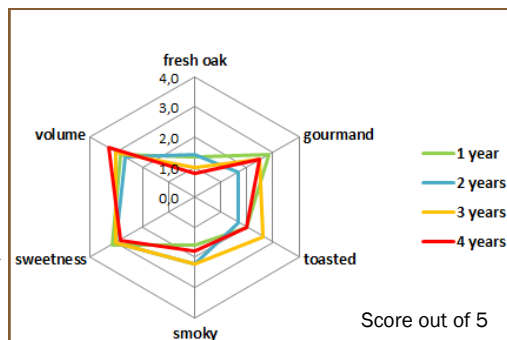


The same batch of Merlot was aged for 1 year in these barrels made with staves of different ages. A chemical analysis of the wines shows that the change in the concentration of certain compounds such as vanillin (vanilla), 5-methylfurfural (toasted almond), guaiacol (smoky) and ellagic acid (ellagitannin degradation) is correlated with the period of ageing in the stave yard. The longer this period, the higher the concentrations of these markers in the staves and in the wine. Wine aged in a barrel

whose wood spent 4 years in a stave yard has higher concentrations of vanillin, 5-methylfurfural, guaiacol and ellagic acid. On the other hand, it contains less trans-whiskylactone (cis-whiskylactone varies little with ageing). In fact, levels of this compound decrease as the staves dry in the yard. American oak wood releases its characteristic notes of "coconut" and thus becomes more refined.

### Sensory analysis: wines with more complex noses and more volume and sweetness

Wines tasted after ageing in barrels for 1 year are significantly different from one another. Wood that is aged for only 1 year in a yard gives the wine pronounced gourmand notes and notes of fresh wood. However, its tannic structure is very striking. Wood aged for 2 years in a yard brings woody as well as slightly balsamic notes in addition to sweetness that enhances the wine's fruitiness and gives it depth and length. This is due to the sweetening power of whiskylactones, which are found in high quantities in this 2-year wood. Staves aged in a yard for 3 years contribute gourmand as well as toasted and smoky notes related to higher furan levels in this wood. The wine has well-blended tannins. Wood aged in a yard for 4 years produces mellow woody notes, a harmonious wood-wine balance and greater volume. Furthermore, ellagic acid contributes to the wine's structure, as mentioned in the above paragraph.



The aromatic and gustatory potential of American oak becomes more complex throughout its natural ageing in the stave yard. Marked by aromas of fresh wood (whiskylactone) at the start of the cycle, it acquires vanilla as well as toasted (furans) and smoky (guaiacol) aromas, giving the wine sweetness and volume. The tannic structure also changes and ellagic acids, derived from the breakdown of ellagitannins, give the wine some depth and length. American oak is therefore a subtle, complex wood that ageing in a yard exalts over the years. You are invited to discover the range of barrels made with American oak wood (Vintage, Grand Cru and Grand Cru Limited Edition, which are aged for at least 2, 3 and 4 years in a yard respectively) that have been described in this article.