Advanced post-bottling chemistry research to improve winemaker control

Nomacorc, a leading producer of alternative closures, has assembled a team of internal experts who are partnering with three wine research institutions to determine how oxygen transfer through closures influences wine evolution after bottling.

Under Nomacorc sponsorship, researchers at the University of California (Davis), The Australian Wine Research Institute, and the Institut National de la Recherche Agronomique (France), together with Nomacorc wine scientists, have initiated a three-year project focused on understanding changes in wine chemistry under different oxygen exposure conditions.

To ensure that oxygen through the closure is consistent and predictable, uniquely designed ageing vessels (created to alter the oxygen environment under which the wines are stored, hence broadening the range of OTRs under study) will be sealed with Nomacorc closures selected based on oxygen transfer rates (OTR).

White, rosé and red wines will be studied, with each academic institution focusing on wines common to its specific region. Winemaking will be performed using many techniques with each wine aged under predetermined and highly-controlled oxygen conditions.

Ultimately, for every grape pressing, up to 16 different wines will be produced. Using distinct chemical markers, researchers will map the impact of oxygen on wine chemistry development and the corresponding influence on sensory attributes governing aroma, taste, mouth feel, and color.

Preliminary research results may be published in the latter part of 2008. With this knowledge, Nomacorc will be able to translate winemakers' desired sensory attributes into optimum closure design based on required OTR. Winemakers will benefit from improved closure performance, and can integrate closure design into their winemaking techniques.

Although this research utilizes Nomacorc closures exclusively, the findings relate in broader terms to OTR-impact on wines, and will have direct relevance to other closure designs.

The desired result is to improve winemaker control of wine development after bottling, and enhance wine quality.