FOREST4EU

ITHub 4 – Non-Wood Forest Products

FOREST4EU partner: BOSCAT

OG: OTR

OG's country: Spain

Type of Innovation: Product

Evolution of oxygen transfer in the various cork stopper manufacturing conditions. Effect of this parameter on still and sparkling wine

Introduction

One of the most significant variables that affect the evolution of wine in the bottle is the supply of oxygen through its stopper: the oxygen transfer rate). Cork stoppers are known to have an advantage over their synthetic alternatives in this respect due to their vegetal matrix. Corks enable the progressive ingress of oxygen into the bottle over time, preventing the oxidation and reduction processes that are characteristic of certain alternative stoppers. The project consisted in determining the variables in the cork stopper production process that affect oxygen transfer and obtaining information to modify the production procedure to adjust the oxygen transfer rate of the corks in accordance with the consensus values for each type of wine

Objectives

1. Assessment of oxygen transfer throughout the production process.
2. Application of control measures based on the values obtained in point 1.
3. Assessment of the effect of the oxygen transfer rate on the wine.
4. Preparation of a catalogue of cork stoppers with different transfer rates and their effects on the evolution of the wine.
5. Foster relations between the cork sector and the winemaking industry.

Lessons learned

- The oxygen permeability of the stopper in still and sparkling wines affects their chemical and sensory development.
- Different types of cork stoppers (natural one-piece, granular and cork discs) have different oxygen permeability characteristics.
- For each type of cork, there are factors in the production process that have key impact on the oxygen transfer ratio of different batches of corks.

- Use of stoppers with higher or lower oxygen permeability depends on the oxidative capacity of each wine, which in turn depends mainly on the grape variety.
- Determining the type of cork to be used is a key factor for wineries that want to control how their wines age and the oxygen transfer values of the corks should be known so as to favour the desired ageing.
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Figure 1: "Elaboration of wine (1)"

Figure 2: "Elaboration of wine (2)"

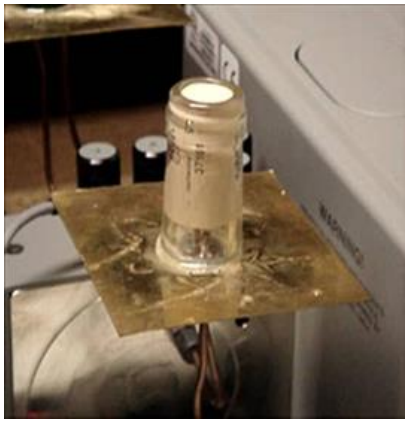
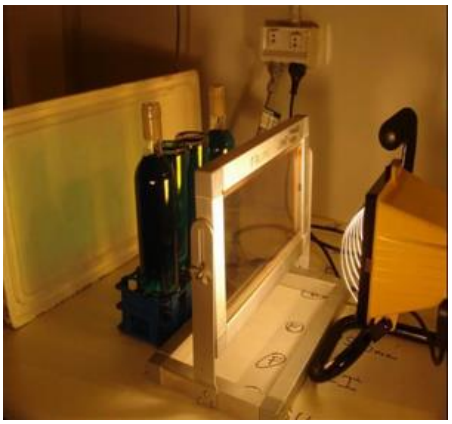


Figure 3: "Elaboration of wine (3)"



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Further information

https://www.icsuro.com/projectes/determinacio-de-levolucio-de-la-permeabilitat-a-loxigen/

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