Study

The micro-oxygenation rate

Vin & Terre commissioned a study to characterise gas exchange through its jars.

The study began on 18/06/2021 at the experimental winery of the **CHAMBRE D'AGRICULTURE DE LA GIRONDE** in a climate chamber regulated at 16°C with a hygrometry rate of 70%.

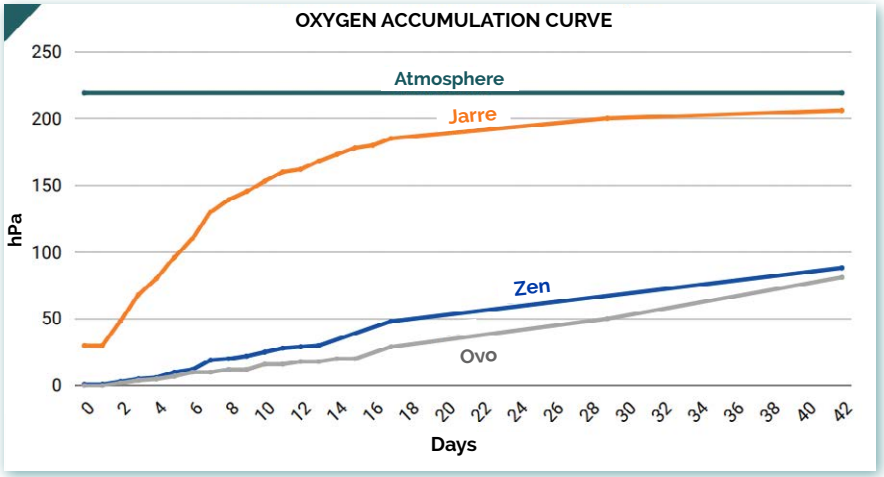
The first part of the test is carried out under nitrogen, the inside of the jars is cleaned of oxygen and then sealed. We wait for the return to equilibrium by taking measurements via probes placed in each container.

The second part of the test, lasting 7 months, consists of filling the jars with wine and monitoring its evolution.

The aim is to measure the precise micro-oxygenation rate of each material (stoneware and terracotta).

When the jar is empty, the pores in the wall fill with oxygen which can then be released into the wine. This is called micro-oxygenation.

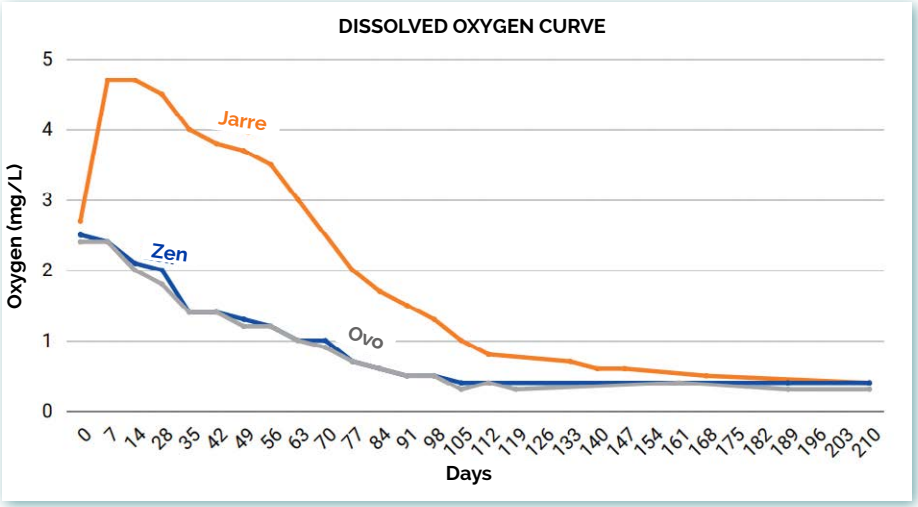
Results on nitrogen matrix



TERRACOTTA desorbs a lot of oxygen during the first 15 days (about 15 mg/L/month) and then stabilizes with an average rate of 1.5 mg/L/month. In the case of a wine that is going to consume this oxygen, we risk staying at a rate higher than 1.5 mg/L/month.

STONEWARE hardly desorbs oxygen and its oxygen transfer rate is stable at around 2.5 mg/L/month. This value is very close to the average value for a new barrel (1.8 to 2.3 mg/L/month).

Results on wine matrix



Conclusion

The study carried out with the Chamber of Agriculture has shown the behaviour of our materials with regard to their micro-oxygenating capacity.

TERRACOTTA is therefore significantly porous and allows the wines to open up and soften quickly. Consequently, its use requires close monitoring of the wines and adjustment of the ageing period for optimum results.

STONEWARE is a perfect complement because it desorbs little oxygen and micro-oxygenation remains diffuse and constant over time. The most fragile wines can be aged without the risk of premature maturation. The ageing periods can therefore extend from a few months to several years.

Despite the sometimes significant micro-oxygenating properties, it is very interesting to note that, in both cases, overprotection of the wines by increasing the SO2 doses is not necessary.