

EFFECT OF PROCORK BARRIER MEMBRANE ON WINES AFTER 18 MONTHS CELLARING

AWRI SECOND COMMERCIAL CLOSURE TRIAL

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1. Background

A new innovative closure, ProCork Membrane Cork, is a natural cork with a barrier membrane that reduces random taint, oxidation, and flavour modification, thereby allowing true bottle derived wine character.

ProCork – What is it?

- ProCork is a new generation of closures
- Natural cork sealed with a membrane barrier
- The membrane has layers which regulate water, oxygen and taint transmission, and flavour scapling

What are the benefits of using ProCork?

- Reduces random variation due to cork taint and oxidation
- Minimises flavour modification and allows true bottle derived wine character

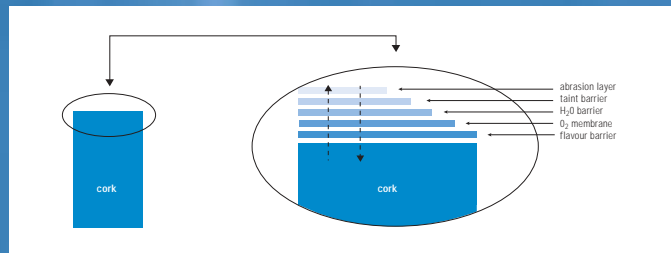


Figure 1: Layers of ProCork Membrane

ProCork submitted its product (membrane coated cork) to the AWRI second commercial closure trial to obtain independent analysis of the effect of the membrane closure on the wine character.

2. Introduction

The AWRI Second Commercial Closure Trial commenced in September 2002, designed to provide suppliers of closures with a means of evaluating their products to various reference products. Various closures were used, including reference 2 and 3 natural cork, Auscap-screw cap, and ProCork membrane cork.

Disclaimer: Any product performance indicated by ProCork is based on trial data obtained under particular bottling, wine preparation and transport/storage conditions for particular cork samples. The recipient is advised to conduct their own trial to determine the optimum effectiveness of the product for their own unique circumstances.

3. Materials and Methods

A premium Australian Semillon wine was bottled with the range of closures by Vinpac International. The bottles were stored under controlled conditions (approximately 17 degrees centigrade and 55% humidity) by AWRI. Random samples were taken over 6 month intervals to conduct chemical and sensory analysis.

Chemical Analysis

Free and total SO₂ was determined using the aspiration-titration method.

Sensory Analysis

Sensory analysis was completed by a panel of 10 AWRI staff with extensive experience in sensory evaluation. Samples were assessed using coded wine glasses under blind tasting conditions.

4. Results

The level of free sulphur dioxide in wine is considered to be a critical parameter with respect to the stability of the wine and provides protection against oxidation and therefore accelerated development of the wine. In this trial, ProCork has retained higher levels of free SO₂ than screw cap and cork, Figure 2, and the smallest increase in OD420 absorbance, Table 1.

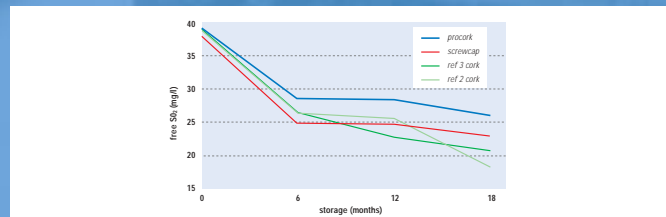


Figure 2: Free SO₂ in AWRI 2nd Closure Trial

Table 1: % Increase in OD420				
Closure	ProCork	Screw cap	Ref 2	Ref 3
Increased OD420	29.2%	31.9%	36.5%	34.6%

The sensory performance of the four closures is shown in Figure 3. It can be seen that ProCork has the highest varietal and fruit scores, both aroma and palate, equal lowest oxidation and less reduced characters than screw cap.

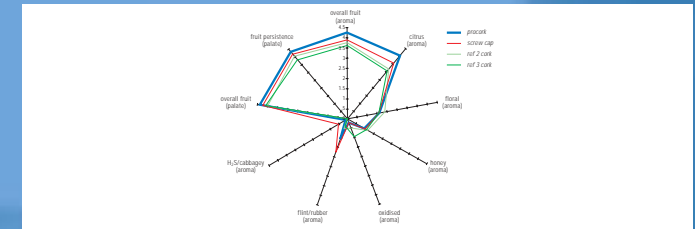


Figure 3: Sensory Analysis – AWRI 2nd Closure Trial

At 21 months, a sensory analysis on a larger sample size of 24 bottles showed that the reduced character score ranged between 0 and 0.5 (mean of 0.2). It is notable that these AWRI results show that although ProCork had a higher free SO₂ than screw cap it had a lower reduced character, indicating that there is not necessarily a direct link between SO₂ and reduced character.

5. Conclusion

The results from this independent trial conducted by AWRI indicate that wine sealed under ProCork has:

- higher retained SO₂ than screw cap and cork
- higher varietal sensory attributes than screw cap and cork
- less reduced characters than screw cap
- less increase in OD420 than screw cap and cork

Eichinger, P. (2004) Commercial Closure Trial – 18 Month Progress Report, Performance Testing of ProCork's Membrane Cork Closures. Australian Wine Research Institute. Eichinger, P. (2004) Sensory analysis of Wine Report number FE0758-FE0781. Australian Wine Research Institute.



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