

TO CORK OR NOT TO CORK

Most drinkers think little about the closure that keeps the liquid in the bottle. All they really want is a good glass of wine. Cork taints, however, unleashed a debate that now has repercussions throughout the industry - and beyond. Dr. Jamie Goode takes a look at various alternative closures.

Bottled wine is a relatively recent phenomenon, and for almost all of its history, cork has been the universal closure solution. It is only recently, over the last decade, that things have changed - and with startling rapidity. Just 10 years ago, almost all of the 14 billion bottles sold each year were sealed with natural cork. Since then, the market for bottled wine has grown to around 20 billion, with cork holding its ground at 16 billion. The remaining 4 billion bottles are sealed with alternatives: mainly plastic corks (2.5 billion), but also screwcaps (1.5 billion), which have achieved high penetration in some markets. However, this picture is not a static one. From here, things are likely to change, and fast. In New Zealand, for example, screwcaps have now cornered over 70% of the market in the last six years, and estimates are that Oeneo's Diam closure now seals 15% of New Zealand's wines only a year after its commercial launch. It's an exciting time for the closures market.

Of interest is Skalli & Rein's recently published Global Wine Closure Report, based on 1,000 completed surveys from different branches of the wine trade, covering more than 50 countries. Unsurprisingly, this shows that attitudes to closures vary in different markets, with the traditional wine-producing countries perceiving less of a problem with cork taint.

The report makes strategic recommendations for closure suppliers. For cork manufacturers, it suggests that the traditional image of cork is no longer sufficient: unless cork producers respond adequately to taint issues they will see their market restricted to high-end wines. Synthetic cork manu-

facturers are urged to produce softer closures that require less off-cork-screw force and which can be reinserted easily. The report considers that screwcap manufacturers are sure to become market leaders if they can improve their liners and rid themselves of their low-rent image in the eyes of consumer. Alternative closures are seen as expensive and a bit of an unknown in terms of performance, and bag-in-box is an outsider that continues to gain popularity in many markets for less expensive wines.

The future of cork

Three potential scenarios for the future are outlined. First, that the natural cork industry will regain some of the market share it has lost, presumably through successful attempts to eradicate taint and variable performance. The second is that natural cork will die almost completely, with the various alternatives taking its place. The third scenario is that there will be a new balance of powers, with a range of different closures each gaining a segment of the wine industry.

The current popular take on closures in the wine trade typically frames the closures debate in terms of a battle between cork and screwcap, with strong advocacy for both closure types resulting in a heated debate where people either take sides or run for cover. However, there are three important recent developments in the science of closures that mean that such a simple bimodal view is outmoded.

First, there is the realization that some oxygen transmission is a basic requirement of successful closures, and that the exact level of this transmission will affect how wines develop. Until recently, those championing

screwcaps maintained that wine development is solely a reductive process, occurring best in the absence of oxygen transmission by the closure. According to this reasoning, the ideal closure would therefore be a hermetic seal, and screwcaps with a tin liner - the form used in Australia and New Zealand - are close to delivering this. This viewpoint has now been shown to be wrong, because at least some oxygen transmission is needed for successful wine ageing, even if it is just to avoid 'reduction' problems.

Even if very little oxygen transmission is needed for successful wine development, varying the amount will change the trajectory of this process. 'The point we've been making for a few years now', says the Australian Wine Research Institute's Peter Godden, 'is that it is possible to use different levels of oxygen-introduced into the wine either at bottling or post-bottling-in a creative way, to manage the development of the wine so it is at its optimum when it is consumed. I don't think zero permeation is ideal for many, if any wines.' he adds. 'But this is perhaps missing the point: variable levels of oxygen ingress will create different wines. This is the key point from our closure trial: we took one wine and bottled it with 14 closures. You get different wines, and they look different after as little as three to six months. They are not all heading towards the same endpoint: they are going off in different tangents.'

Second, there are now several different closures on the market that offer taint-free seals and consistent performance. It is possible to avoid the taint issue without having to use tin-lined screwcaps. And if we are able to get

good information about the gas transmission rates of these closures, then informed decisions about matching particular closures to particular wine types becomes a possibility.

Thirdly, there has been an increased awareness of post-bottling wine chemistry, and in particular the role of sulphur-containing compounds in producing 'reductive' characters in wines. The various studies that have examined closure performance have found problems with reductive characters in wines sealed with tin-lined screwcaps. In brief, the various sulphur-containing compounds in wine can change their form after bottling depending on the presence or absence of a certain level of oxygen ingress after bottling. Most importantly, disulphides - less smelly - can be changed to mercaptans - more smelly - so that a wine that was clean at bottling can develop characteristics known as 'reduction'. This is currently a hot topic in wine science, and it isn't yet clear whether it is a significant real world problem for wines sealed with screwcaps.

What are the options?

So what are the various options available to producers besides cork and tin-lined screwcaps? First, there are variations on these themes. While it's too soon to say for sure whether attempts by cork companies to reduce taint by novel washing procedures and

improved quality control will significantly reduce taint levels, those wishing to stick with natural cork can avoid taint by the use of barrier methods such as ProCork, Bacchus and Cortex. Of these three, ProCork have the lead and their five-layer membrane which attaches to each end of a chamfered natural cork has already proven popular in Australia. It is now being launched in Europe.

Another success story is Oeneo's Diam, a technical cork made up of cork granules that have been rendered taint-free by washing with supercritical carbon dioxide combined with synthetic microspheres. Through extensive independent testing Oeneo have demonstrated rigorously that their closure contains no TCA, and it is available in two different oxygen permeability levels.

Pechiney, manufacturer of the Stelvin screwcap, offer in addition to the wadding with a tin layer, a liner made of just Saranex, which allows more oxygen transmission. This is being used quite widely in Europe, and I have spoken to some Australian winemakers who are planning to trial it. Pechiney are also developing a liner with oxygen transmission levels that are intermediate between the two: such a product would be of great interest.

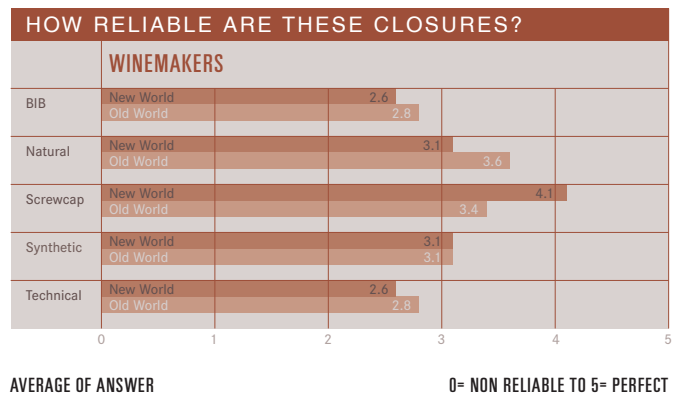
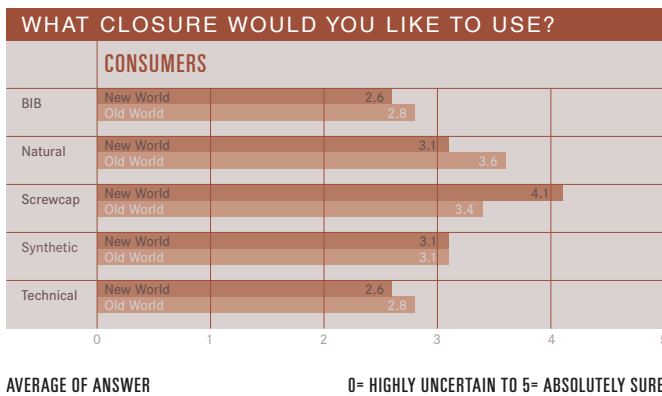
Despite reports to the contrary, synthetic corks aren't dead yet, with both Nomacorc and Supremecorq

recently announcing new products with improved oxygen transmission properties. Of course, winemakers need to be careful to investigate all claims about oxygen transmission levels carefully, and if possible independent data should be sought.

Vino-Lok, Alcoa's glass based closure which is covered by a metal cap, has recently become popular in Austria and Germany. It's quite expensive, but it has a sophisticated image. Once again, independent data on its oxygen transmission properties are needed; the seal itself is provided by a plastic 'O' ring.

Zork is another novel closure solution which has been talked about a lot, but hasn't yet made much impact, and crown caps are being used with some success for some sparkling wines, but have yet to be adopted widely elsewhere.

Which ever way the closures market develops over the next few years, winemakers are now faced with a choice of different closure types and relatively little impartial information about their physical properties and suitability for different wine styles. As well as good independent data on closure performance, there is a need for a better understanding of post-bottling wine chemistry, and effective communication of this scientific research to winemakers in a way that empowers them to make informed decisions about closure choice. ■



SOURCE: SKALLI & REIN - GLOBAL WINE CLOSURE REPORT 2006