

A T W I S T O N T H E

# Stopper saga

The hottest topic in the Australasian wine industry at the moment is how to best stopper a bottle of wine. Many Australian and New Zealand wine producers are moving away from traditional cork to put, not only their delicate whites, but also their top reds, under screw caps. In the meantime the cork industry is working frantically to win back its market share.

REBECCA SKINNER reports.

Corks have been synonymous with wine since they were first used back in the days of the Ancient Romans. Of course the wine industry has changed dramatically since wine was first produced 7,000 years ago. We've gone from wine fermented in animal skins to high tech winemaking equipment; from wines stored in amphoras to specially moulded glass bottles.

Australia, a mere youngster on the world wine stage, has been particularly proactive in the industry's development – readily adapting to mechanisation including machine harvesting, new viticultural techniques like soil testing and innovative trellising and, of course, to computer technology. Remember, around 98% of Australian winemakers have a tertiary qualification, compared to around 2% of their French counterparts. So it comes as no surprise that Australia and New Zealand are leading the way in researching a high tech seal for wines which will, hopefully, be free of problems like taint and oxidation that can result from cork closures.

The seal that is being rapidly adopted by the Australian wine industry is the screw cap (often referred to as Stelvin, one of the proprietary brand names) which was first produced in France in 1959. This is a metal cap, spun onto the bottle neck, complete with seal and wadding to maintain pressure.

Although debates are currently running hot over screw caps versus cork, this report aims to be an unbiased attempt to highlight the background, current issues and controversy as well as predictions for the future.

Over the past few years we've seen more and more wines sealed with cork alternatives. Artificial cork has been around for many years (some brands were found not to provide a perfect seal and others were very hard to remove, amongst other developmental problems). But artificial cork is still popular in Europe and is being constantly improved.

Former CSIRO scientist, Dr. Gregor Christie, has combined the best of both worlds with a new product, ProCork, which is being commercially released this year. The cork stopper with a membrane added to both ends has been trialled by Victoria's Mount Avoca winery and has performed well in Australian Wine Research Institute tests.

Australia first trialled the screw cap in the 1970s but the public's preference for cork was obvious. Then in 2000 a group of Clare Valley Riesling producers, confident that their 30-year-old Rieslings were tasting well under screw caps, began to push the closure and were quickly followed by a movement dubbed the New Zealand Screw Cap Wine Initiative. First delicate whites to be consumed young were bottled with screw caps. Then producers followed with reds and premium wines designed for cellaring.

Tesco, which holds 27% of the UK supermarket business, says that by 2005 half its range will be sealed with screw caps and predicts that, within a few more years, most wine consumed in the UK will come from screw capped bottles. And in the US the San Francisco Chronicle reports: "That whooshing sound up in the Napa is not the tail wind of a wine cork leaving a bottle, it's the sound of steam gathering behind the screw cap movement."

Now we can look forward to an updated version, the Stelvin II – smooth on the outside without those tell tale screw lines and a pop when you open it, just like a cork!

Winemaker, Jeffrey Grosset, is spearheading the Australian campaign in the Clare Valley. He's currently bottling 95% of his production using screw caps. And he predicts, after speaking to the main players, Pechiney (producers of Stelvin) and Auscap, around 200 million bottles of Australian wine will be sealed with screw caps this year, compared with about 200,000 in 2000 –

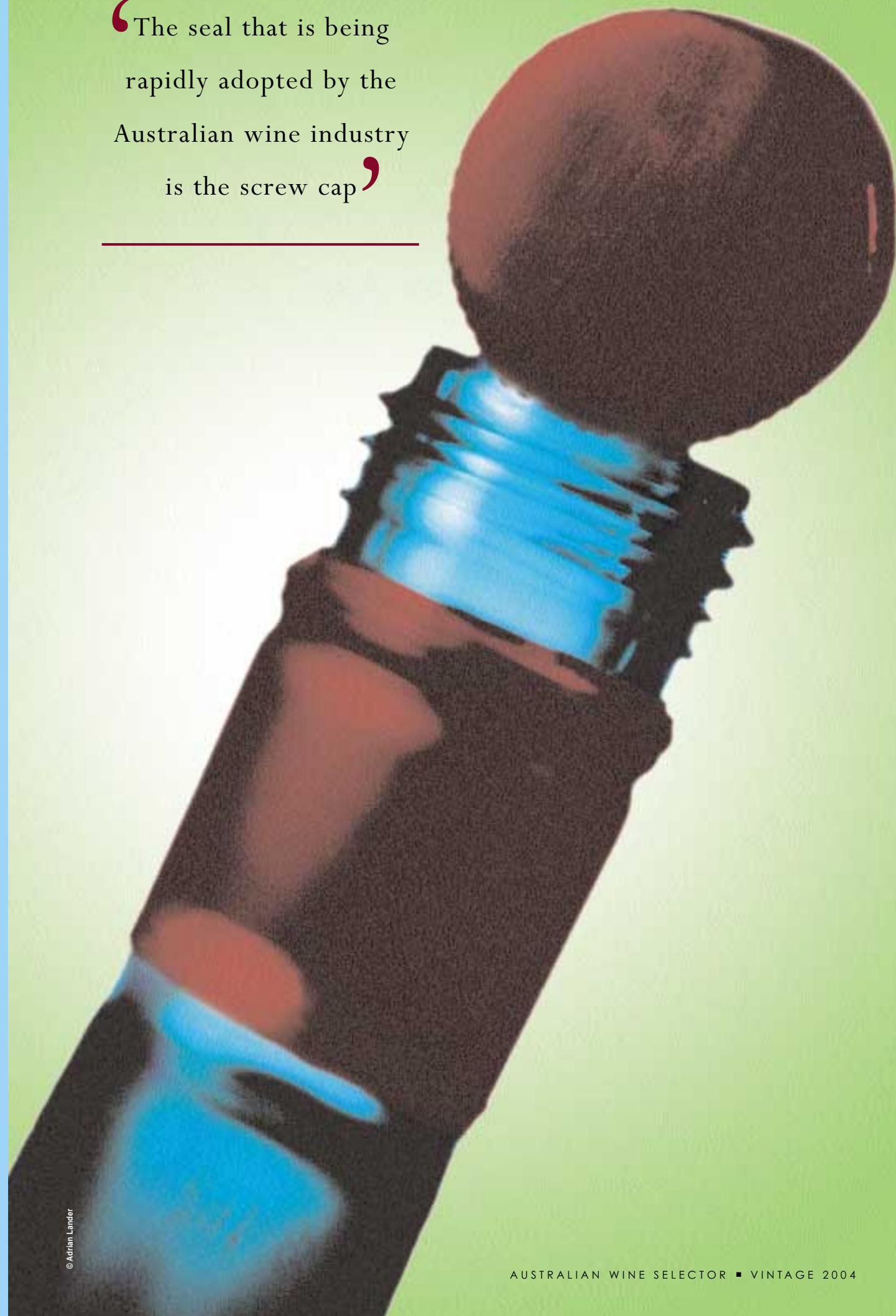
a whopping thousand fold increase in four years. So why the stampede?

It's been recognised for quite some time that cork has problems. The first, TCA or Trichloroanisole, is the name of the most common of the group of active biological contaminants which has been labelled "cork taint." Then there is random oxidation as well as reduction. However none of these are necessarily limited to cork.

TCA influence on wine can range anywhere from a reduction in fruit character to an unpleasant, musty aroma and taste. But similar mustiness has also been found in cans of soft drink, bottled mineral water and packaged food products, so it is possible that TCA could have been present during production or packaging.



‘The seal that is being rapidly adopted by the Australian wine industry is the screw cap’



Conservative figures put the incidence of TCA in wine into the 2-3% range, though some in the industry are quoting 10%. Of course, this variance could have a lot to do with personal palates, since everyone's threshold (and knowledge) when it comes to picking up chemical compounds, varies greatly. Grape variety too is important, since TCA is more easily detected in delicate whites such as Riesling and Sauvignon Blanc.

Oxidation is when a bottle isn't sealed properly, or when the wine is bottled with excessive oxidant materials and it can make a wine taste off. But remember, this can happen to wines using closures other than cork or screw cap.

Another problem is reduction. Reduction mirrors oxidation, and can affect the wine with sulphurous characters – which can be beneficial, like flintiness, or detrimental like burned matches or cabbage. It's caused by a sulphur compound, hydrogen sulphide, which is formed by yeast during wine fermentation, in the absence of particular nutrients. If it still remains at the bottling stage and is not removed by fining, it will remain in the wine.

A clinical investigation by the Australian Wine Research Institute tested screw capped Semillons at 18 and 36 months (published in Technical Review No. 142 Feb 2002) found "wine bottled with the ROTE (screw cap) closure was rated significantly higher in a character that was defined as "reduced" or "rubber" than all the other enclosures, including natural corks." However, a conclusion still could not be drawn that a greater incidence of reduced aromas was found in screw capped bottles rather than those closed with cork.

But, a small amount of this character may be beneficial for a wine. For the first time Keith Tulloch, Hunter winemaker and member of our Tasting Panel, bottled all his 2003 Hunter Valley Semillon under Stelvin. It went on to win two Trophies and two Gold medals. Though he says the wine does have some hints of flint to the nose, this may just be coincidental with the closure type. He says: "There are numerous award-winning, elegant white wines, from the Hunter and also from Clare and New Zealand that develop such flinty complexities and are bottled under cork as well as under Stelvin. It would be wrong to target Stelvin, and these characters may simply be part of the wine's allure and personality."



Above: cork is stripped before being taken to the processing plant

The issue now is how well red wines, and especially those recommended for cellaring, will age if sealed with screw caps.

But, in the meantime, the cork industry (predominantly based in Portugal) is busily cleaning up its act. There's no doubt that the dominant position cork suppliers enjoyed for so many years meant they had become complacent and slow to respond to criticism – but not any more.

The last few years in particular have seen a huge amount of work and money spent on eliminating TCA. APCOR, the Portuguese Cork Association, with members who represent around 85% of all cork exports, are so confident that they are

promising all corks being produced will have undetectable levels, if any TCA at all.

A new International Code of Cork Stoppers Manufacturing Practices is being rapidly adopted and APCOR aims to have all cork companies certified within four years.

Amorim, which supplies 25% of the cork from Portugal, has opened two new factories which boast state of the art equipment.

Simple measures like stabilising the cork at the factory rather than in the forest and separating the bark removed from the base of the tree that is more susceptible to TCA, has made a huge difference. In fact it is believed that just separating the cork that had contact with the earth has alleviated 85% of TCA.

Research is also going on into the ideal ecology of the forest floor to maintain an ideal ecosystem for cork production. It's worth remembering that cork, from the cork oak tree or *Quercus suber*, can only be used for wine stoppers from the third harvest onwards – that is after at least 30 years.

Once sorted, the cork is now boiled in regularly changed, clean water for at least one hour – previous treatments at lower temperatures meant it took the bark far longer to dry out making it more susceptible to TCA. Amorim has also installed the CONVEX process that continuously removes volatile compounds from the wash waters. Tests are then done for TCA and any contaminated cork discarded. Then, a further treatment, the INOS system, gives a second washing and drying to the cork disks, used in Twin Tops and champagne corks.

Research has shown a dramatic drop in TCA contaminated wine corks since 2002 when most cork manufacturers began applying the new controls.

Amorim's ROSA system, a steam distillation process, is used after all the normal preventative measures are taken. It has now been installed in four Amorim plants. Trials in the UK, Australia, France and Germany have found potential reduction of up to 85%. Any impact ROSA has on the physical properties of cork stoppers and discs can be rectified by polishing.

Some Australian producers, like Robert O'Callahan from Rockford in South Australia's Barossa Valley, believe in waiting until screw caps have proved themselves irrevocably before "joining the stampeding herd."

However many producers are totally committed to screw caps, confident that the wines remain fresher with better fruit and tannin definition. Now the main debate moves on to which of the seals is better for red wine aging, particularly with premium

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wines designed for long term cellaring. Some winemakers feel that the development of a wine is enhanced by microscopic passages of air through the cork, while others believe that the seal should be as airtight as possible. Research must continue into whether a wine may need to have a certain amount of dissolved oxygen which can chemically (and beneficially) interact during maturation.

It could be that red wines will age more slowly in screw caps. They are certainly

likely to be fresher and remain more fruit driven (as recent comparisons have shown) but will definitely be different to their counterparts under cork. And if they are different, will they evolve into wines that become as great and classic as they have throughout history?

Or, it could be that the screw caps' seal will deteriorate after a certain number of years. Only time will tell.

The one thing we do know is that all stops are out in the race to bring the public a taint-free wine.

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