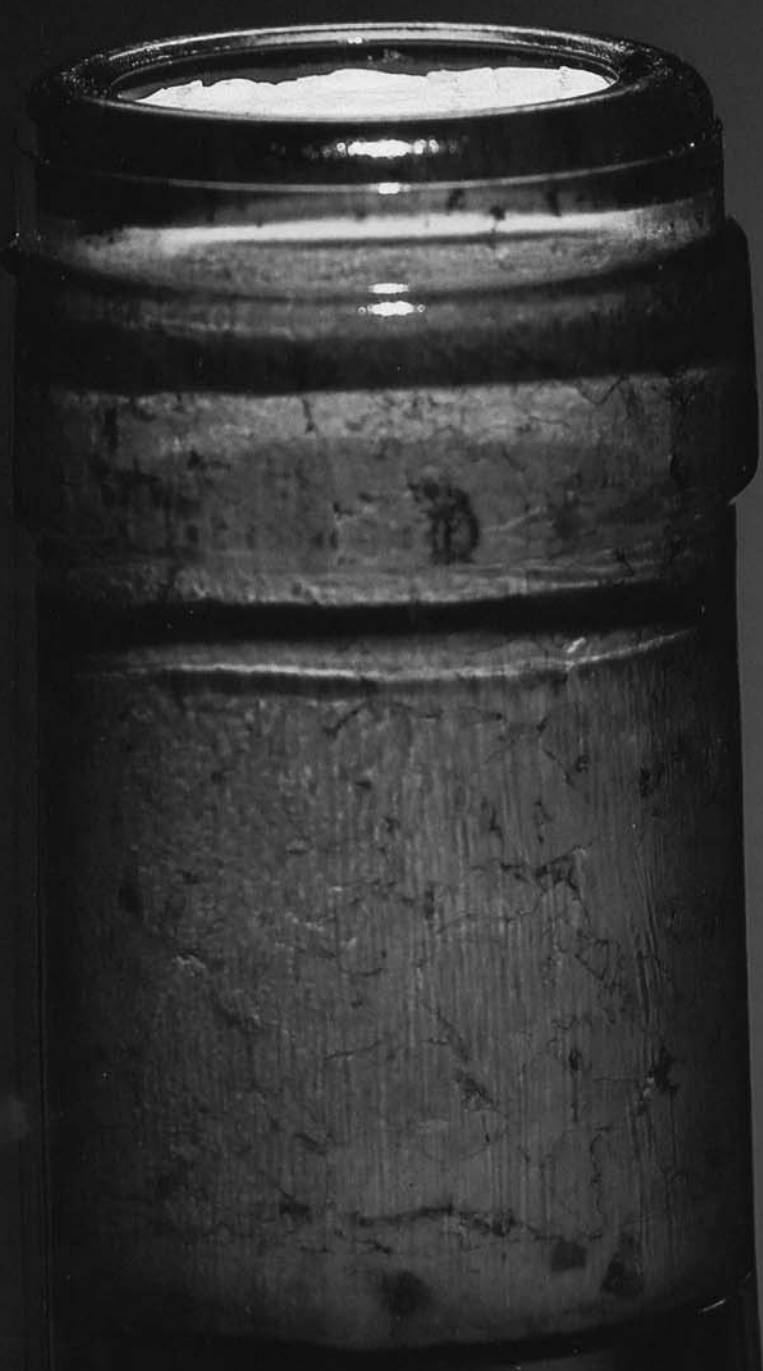


Performing Seals

Reporting from his experiences in



DO SCREWCAPS have an Achilles heel? Taking a look at test results coming from New Zealand, plus my own personal experiences with that country's wines, increasingly, it looks like they may not be any more perfect as wine closures than the corks they replaced. In a paradoxical twist of the cap, producers who have opted for screwcaps may have simply swapped one set of problems for another.

As part of ongoing reviews for *Australian Gourmet Traveller WINE* and Wellington's *Dominion Post*, I've blind tasted hundreds of wines throughout the past two years. During that time, I've encountered enough problems with screwcapped wines to suggest they can deliver faulty wine just as readily as cork-sealed wines.

One example appeared during a blind tasting of the second pair of three sets of 2001 Jackson Estate Sauvignon Blanc, bottled under both cork and screwcap. Ironically, this was part of an ongoing trial sent to journalists by the New Zealand Screwcap Initiative in September 2001 to demonstrate that screwcaps were superior to corks. After sampling these with two other professionally qualified judges, contrary to all expectations, the wine under screwcap showed signs of oxidation and excessive forward development, whereas the cork-sealed wine was deemed to be young, fresh and relatively underdeveloped. Rather worryingly, where in the past I have seen instances of dented or creased screwcaps, in this case there was no visible sign of leakage.

Equally troubling, at a blind-tasting survey of 30 bottles of 2002 New Zealand gewürztraminer a couple of months ago, judged with two other professionally qualified judges, it was

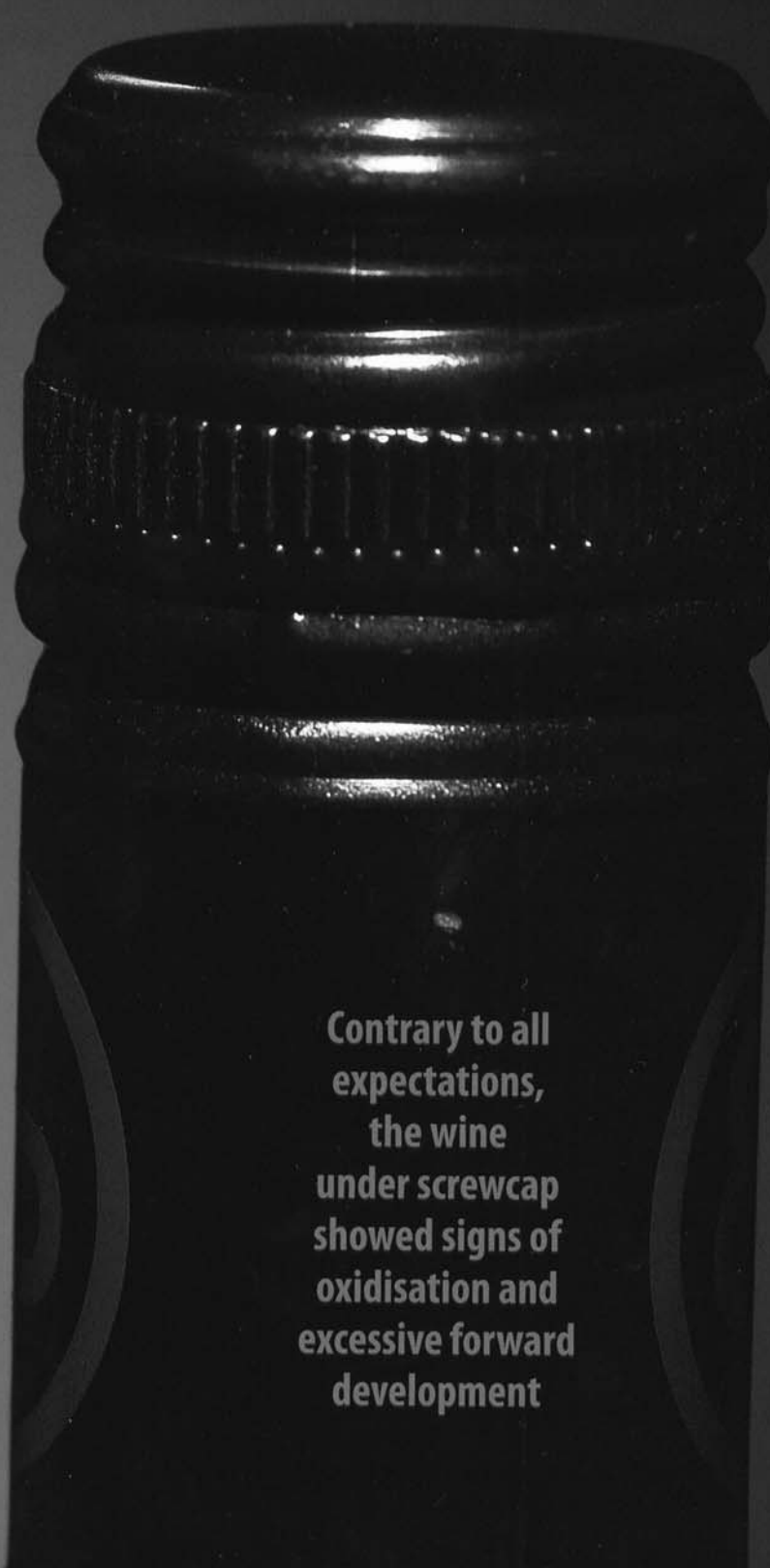
New Zealand, Paul White concludes that screwcaps may not be the perfect wine closure after all

revealed that four out of the eight screwcap-sealed wines were faulty. These were tossed out of contention for being seriously malodorous: two from a large producer showed unacceptable degrees of reduction; a third had an indefinable, quasi-reduced grubbiness; while the fourth was obviously oxidised. The current three-to-five per cent cork-taint rate pales in comparison.

Shortly after alerting both winemakers and consumers to these problems through a column in the *Dominion Post*, I received an email from the New Zealand Screwcap Initiative's official chief spokesperson, Bob Campbell MW. He acknowledged, quite courageously, that his blind-tasting team had also encountered reduced wines under screwcaps in his varietal surveys for New Zealand's *Cuisine* magazine, adding, "Sulfide presence in young wines is not a good look and, as you say, it tends to build in the bottle".

The opposite of oxidation, reduction is a wine fault that permanently taints aromas and flavours with sulfurous characters akin to rubber, burnt matches, cabbage, struck flint or rotten eggs. Purposefully leaving an eye-glazingly complicated explanation of amino acids, redox potential and micro-oxygenation to professional winemakers, here's all we civilians need to know. Put simply, the reductive process revolves around a sulfur compound called hydrogen sulfide (H_2S), which is formed in the absence of oxygen by yeast during fermentation. This differs significantly from the sulfur dioxide (SO_2) winemakers add to sterilise and preserve wine.

In anaerobic (oxygen-free) environments, any hydrogen sulfide left over in wine at the time of bottling ends up permanently bound up in the wine's aromas



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and flavours. Once these reduced characters are locked in, no amount of aeration or swirling in the glass can get rid of this. The only solution is to expose the wine to copper, which bonds readily with sulfur and removes it.

A recent Australian Wine Research Institute (AWRI) clinical investigation, published in February 2003's *Technical Review No. 142*, strongly supports emerging evidence from the coalface. After testing screwcapped semillons at 18 and 36 months scientifically, this study found that "wine bottled with the ROTE [screwcap] closure was rated significantly higher in a character that was defined as 'reduced' or 'rubber'," than all other enclosures, including natural corks. This was "due to chemical reactions of sulfur compounds in the relatively anaerobic environment of the ROTE seal".

A related study, focusing on rieslings, "all from relatively small wineries, and all from relatively cool viticultural regions", found 25 per cent of those under screwcaps also showed reduced characters.

The implications are profound here, given that undetectable levels of sulfide can easily go unnoticed at the time of bottling. Institute tasters have increasingly concluded that "after a period in the bottle, some commercial wines can develop this [reduced] aroma, and it seems most common in wines bottled under screwcap closures". This suggests screwcaps' air tightness may be a primary factor in the emergence of reduced characters over time. At the very least, it exacerbates the

problem more than other closures.

If ongoing studies continue to unravel such findings, cellared screwcapped wines could turn into little time bombs waiting to go off years into the future. Where previously, an old case of say, shiraz may have suffered a corked wine or two down the track, the uniformity of product promised by screwcaps could just as easily result in an entire case of well-aged, undrinkably stinky red.

Frankly, any incidence of oxidation or reduction is just as unacceptable as cork taint, and yet, during the original launch of the New Zealand Screwcap Initiative in September 2001, dozens of New Zealand journalists were told that the special design of screwcaps eliminated the possibility of oxidation. Similarly, the reduction issue then raised was sloughed off as a manageable teething problem and that we could all be rest assured that it wouldn't present any problems in the future. Lo and behold, two years on, guess what's cropping up?

It's hard to blame the New Zealand Screwcap Initiative for

putting its case forward. Like any industrial lobby, that's its job.

Dr Alan Limmer, the winemaker at New Zealand's Stonecroft Winery, and whose degree is in chemistry, has taken a more cautious approach to screwcaps. "I've been warning my customers for the last few years of possible reductivity problems with screwcaps. These warnings were based on an understanding of the redox science and possible implications for wines under airtight seals. It also transpires from conversations I have had with others from the wine science fraternity that this was a problem with these closures some 30 years ago. These issues are probably not insurmountable, but need further investigation and understanding regarding the post-bottling chemistry to make these seals more 'wine friendly'," Limmer said.

Sadly, in the course of demonising corks, some writers have elevated screwcaps to god-like perfection. In creating such a high degree of false expectations, they have lulled consumers into believing wine contained in



screwcaps can't be faulty. So, where once consumers had no qualms about returning a bad bottle of cork-stoppered wine, they dare not do so now with screwcaps.

This overselling of screwcaps means reduction may be coming back to haunt producers who have ignored it. While a better understanding of the complicated chemistry surrounding redox potential and micro-oxygenation could lead some winemakers to lower or eliminate the risk of reduction, not all producers are up to it, suggesting we will be seeing plenty of reduced wines under screwcaps.

The issue could even require a fundamental shift in winemaking

styles. For the past 30 years, Australasian wines have purposefully opted for a reductive process, because it produces a crisper, more fruit-forward style. Ultimately, producers may have to lose this signature fruitiness and shift toward more traditional, oxidative, Old World techniques.

As for other wine faults? It could be that someday screwcaps may be universally free from the risk of oxidation. They aren't now. Unfortunately, whatever goes into screwcaps comes out the other side, warts and all. Just as unfortunately, not all winemakers are created equal and more than enough bottled wine continues to suffer from brettanomyces, bacteriological taint and refermentation. Screwcaps are no more immune to this than other enclosures, so ultimately, all this may boil down to trusting individual producers at best.

The most honest advice I can give consumers is to assume that screwcaps appear to be as prone to faultiness as wine under cork. For that reason, they should not feel inhibited about taking back a screwcapped wine for exchange or

refund. Where the AWRI study reckons reduced aromas are unlikely to be a significant issue in "screwcap closures for white wines intended for early consumption where all stocks of the wine would be sold and consumed in the year of release", the report does not endorse either short- or long-term cellaring. No comment is offered on risks involved with grape varieties, such as sauvignon blanc, shiraz and mourvèdre, which winemakers consider more prone to reduction.

I don't intend to sound pro-cork or anti-screwcap here. I only wish to restore a balance to the discussion, while also alerting both consumers and winemakers to screwcaps' potential shortcomings. Obviously no-one likes opening corked wines – it's irritating, it wastes time, and, in the case of a wine cellared for a long time, it can be profoundly disappointing, devastating even. Faultiness in screwcapped wines is no less disappointing.

The one certain thing screwcaps have done is to have given the cork industry a big fright. And if that forces cork producers to clean up their act before screwcaps take over, that also would be another great accomplishment in the world of wine.

In our next issue, AGT WINE contributing editor Huon Hooke will report on his experiences with screwcap closures.

