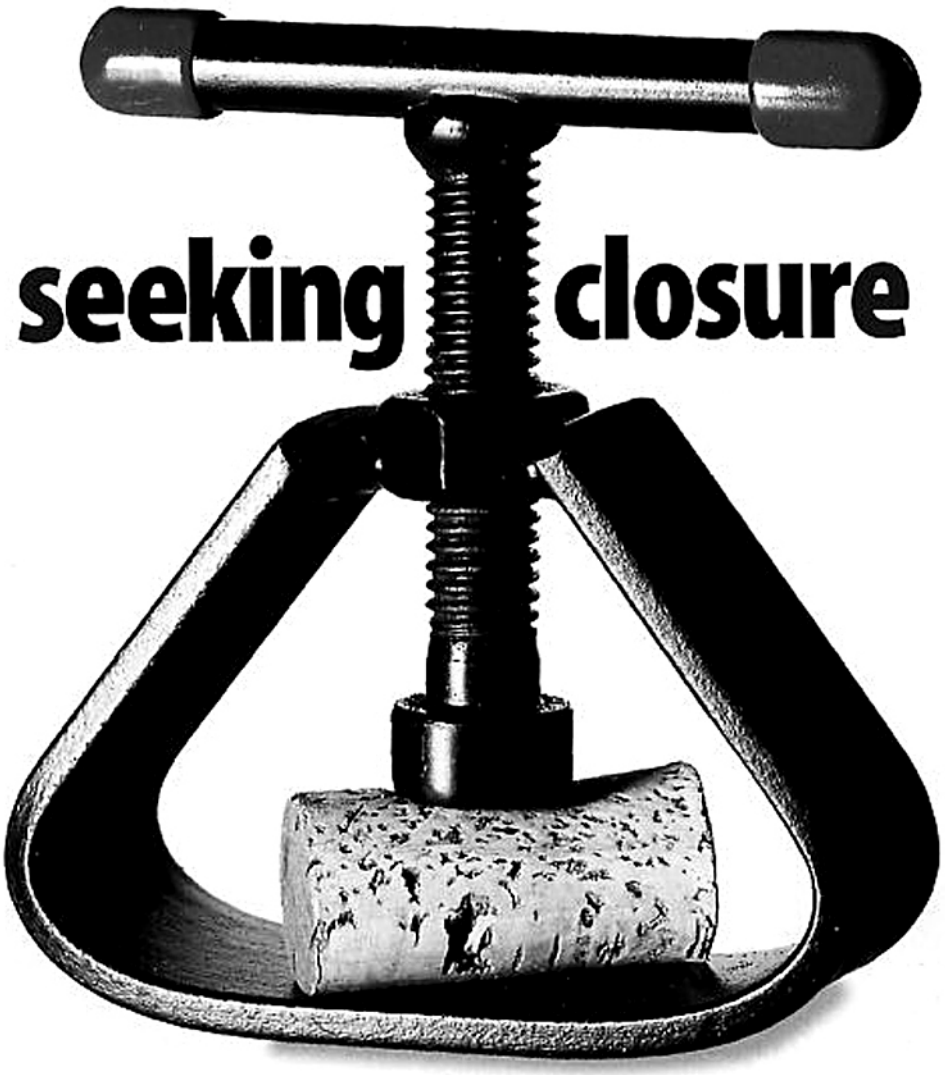
seeking closure



The argument over which are the best wine bottle stoppers continues

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THERE'S SOMETHING A LITTLE EXCITING, dare we say romantic, about wine corks. Nothing compares to the anticipation as you plunge in the corkscrew and wait for that magical "pop" of the cork – certainly not the dull twist it takes to open a screwcapped wine. Of course, nothing also compares to the disappointment that comes with opening what promised to be a fine wine only to find it tainted by bad cork. The ongoing argument over which closure is preferable is set to continue, especially as new players enter the fray.

Problems with oxidation and reduction continue to dog screwcaps. In its 2003 annual report, the Australian Wine Research Institute (AWRI) noted a number of quality-control issues surrounding bottling practices which have led to the development of oxidation, bacteriological contamination and volatile acidity (VA) faultiness in screwcapped wine.

Following on from problems uncovered in a *WINE* article last year (see "Performing Seals", October/November 2003 issue), I encountered similar faults while judging at the Australian Alternative Varietals Wine Show in November 2003. As with all previously discussed incidents, wine faults were discovered while blind tasting with a panel of professionally qualified, Australasian show circuit judges. After the show, discussions surrounding wine faultiness were cross-referenced to closure types.

Of the 18 pinot gris sealed with screwcaps, six were faulty. Three of these suffered from oxidation or reduction, while three others had faults related to VA and bacteria. Overall, pinot gris in screwcaps failed anywhere from 16 to 33 per cent. Screwcaps also failed at rates up to 50 per cent in other classes, off admittedly smaller samplings.

An article on screwcaps by the staff at Charles Sturt University in *Australian & New Zealand Grapegrower & Winemaker* (March 2004) highlights the ongoing debate within academic circles over reds bottled under screwcap. Where CSU's winery placed its whites in screwcaps, after heated discussion its reds were sealed under cork. Concerns raised there dealt with reduction, the need for oxygen ingress for development and whether well-matured red wine should end up tasting newly bottled.

In the UK, Tim Atkins MW, of *The Observer* newspaper, waded into the debate last April, quoting Brian Croser's experience with screwcapped reds made between 1978 and 1982: "The wines are developed, but they're tinny and flat; like stale jam. The best wines sealed with a natural cork are better than all the screwcap wines."

In fairness, the quality of seals in screwcaps has improved over time, so this may or may not correspond to the present situation.

One of the major issues here is whether wine ages oxidatively or not. This determines how wine is treated before going into bottle. On one side, screwcap enthusiasts follow legendary oenologist Emile Peynaud's view that optimal bottle maturation is essentially anaerobic (oxygen free) in nature. Contrary to this, the anti-screwcap lobby adhere to Roger Boulton's (Professor of Enology at the University of Davis) view that wine maturation is dependent on small amounts of oxygen seeping through the cork into the wine at rates similar to those found during barrel maturation. To date, no definitive scientific studies have determined the truth.

A closure alternative is offered in the form of Zork – a clever hybrid design incorporating a screwcap's ease of opening with the "pop" consumer's have come to expect from a cork being pulled. It also aims to reduce 2, 4, 6-trichloroanisole (TCA) taint, the most common cause of wine contamination. Pending further scientific verification from the AWRI, this system could offer several serious advantages over both screwcaps and real cork.

Firstly, it fits over any normal wine bottle, so doesn't suffer from the dreary one-size-fits-all dilemma of screwcapped bottles. Secondly, the shrink-wrapped, plastic capsule is clearly more shock-resistant than the relatively thin-walled, metal screwcap it would most logically replace. This robustness should reduce problems seen in the post-bottling transport and storage of screwcaps (which may account for incidents of oxidation).

Thirdly, and perhaps most importantly, it has the potential to satisfy the bottle-ageing requirements of both cork and screwcap advocates. (Zork, a Melbourne firm, is working with the wine industry to develop an internal filter that can be customised to either halt or facilitate oxygen transference into the wine.)

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So, what's the state of play with real corks? Well, they are in comeback mode, offering serious advances on three fronts.

Another Australian company, Procork, has taken a prophylactic approach to TCA, slipping a condom-like device, albeit an intentionally leaky one, over both ends of a cork. This multi-layered, perforated membrane blocks TCA molecules from entering wine while allowing wine to soak back into the cork to keep it moist.

Three months into an ongoing AWRI trial, no TCA taint has leaked through, while Victoria's Mount Avoca winery has trialled Procork stoppers for a year without problems. After blind-tasting several Mount Avoca wines, I encountered no off aromas, no TCA taint and a remarkable consistency between multiple samples. Ramping up to produce commercial quantities in the near future, the Procork system should provide a viable interim solution toward eliminating TCA taint in full-sized, real cork.

The word's second-largest cork supplier, Sabaté, is attempting to eliminate TCA taint with its new cork-processing method, Diamond. Employing fancy chemistry previously used by the perfume industry to extract plant material without losing delicate aromatics, CO_2 is driven into a supercritical state where it penetrates like a gas and cleanses like a liquid. The process cannot yet penetrate full-sized corks, so is applied to cork granules which are later reconstituted into a range of cork forms, graded by their oxygen permeability.

Preliminary AWRI studies of the Diamond process report "no evidence for trace levels of TCA" and better performance than screwcaps in terms of reduced characters. One of the cork industry's staunchest critics, Tim White, appears won over by the technology. After blind-tasting samples, he wrote in *Australian & NZ Grapegrower & Winemaker* (March 2004): "The wines opened up identically and without a trace of taint or oxidation ... my tastings have shown it to be an incredibly consistent performer."

What's interesting about this and Zork is that both point to a future where TCA is a thing of the past. These "next phase" closures also focus on bottle consistency and wine maturation. "The advantage of the individually moulded cork is that we also control density and uniformity," says Sabaté's Dean Banister, "and through this can control oxygen permeability." This provides options for either anaerobic or oxygen-driven bottle age.

Portugal's largest cork producer, Amorim, has also been busy cleaning up its act over the past few years. In a sense, Amorim represents the best part of a Portuguese industry that has been slowly modernising over the past decade. Vertical integration from growers through all stages of manufacturing has allowed Amorim to pinpoint where TCA potentially enters production and then systematically address these problem areas with scientific solutions. Massively improved storage and pre-washes, along with the identification and disposal of contaminated bark, have greatly reduced the total background incidence of TCA taint in pre-manufactured cork.

Backing this up, Amorim has developed a curative wash called ROSA, which extracts 69-80 per cent of any remaining residual TCA spotting, and invested heavily in special gas chromatography testing machines that sniff out bad cork batches. The net effect of all this has seen a reduction in the incidence of TCA-infected bottles and fewer returns reported by wineries, especially with the company's Twin Tops. With independent verification still pending, it's difficult to estimate a residual rate of TCA taint. Whether it's nearing undetectable levels, or below the targeted one per cent, remains to be proven.

What's clear from all this is that there's unlikely to be any dominant closure in future. The great thing that screwcaps and synthetic corks have done is to open the field up to competition and force cork producers to lift their game. No manufacturer can rest on its laurels – all must strive to perfect their designs.

It's likely that the future will find us choosing from a variety of stoppers, each of which will offer exactly the sort of bottle-conditioned characters we want out of any given wine. !