

# What's new in closures?

*We put out an invitation to Australia's cork and closure suppliers to tell us about their latest innovations.*

By Sonya Logan

The Australian wine industry's acceptance of screwcaps seems more akin to a near-capitulation based on the shelves of your average bottleshop. Spotting a cork could almost be a game like parents play with young kids to help pass time on long car trips, like eye spy or 'Spotto', a competition a friend of mine plays with her daughter when they're in the car to be the first to spot a yellow vehicle.

But, as we know, other parts of the world aren't quite so captivated by the screwcap, and there are still certain Australian products for which their producers still favour closures over screwcaps. Meanwhile, the cork and alternative closure companies are continuing to innovate to retain and win back their customers. Three of them are Cork Supply, Vinocor and Nomacorc, who responded to our invitation to the nation's closure suppliers to bring their latest developments to the attention of our readers.

## CORK SUPPLY GROUP

The Cork Supply Group (CSG) of companies is pioneering what it has described as an "evolution in the natural cork industry". CSG is "well under way" with the development of an automated system to detect sensorial and physical defects in natural corks. The system forms part of the next stage of its DS100 program (Dry Soak 100% inspection) which the companies launched in 2011 – an inspection process in which every cork is reviewed individually and, if necessary, rejected for TCA and other sensory flaws.

"As the DS100 is a labour intensive and expensive process, the next stage in this DS process is to automate the process to increase volume availability of 100% inspected corks for sensory neutrality," explained Jochen Michalski, president of the CSG.

The automated, non-destructive process, DS100+, is due for commissioning in the fourth quarter of 2014.



**In the latter half of this year, the Cork Supply Group of companies is aiming to commission an automated inspection process in which every cork will be reviewed individually and, if necessary, rejected for TCA and other sensory flaws.**

"This is a game changer for the cork industry and positions the Cork Supply Group well in advance of the rest of the cork industry" Michalski said.

"We have a team of in-house research scientists that have been working on the development of this automated process for many years and we are in the final stages of this research, allowing for the machine build.

"We are very proud of our team's achievements in this ground-breaking technology," Michalski said.

Antonio Ferreira, product development director at CSG, explained that a laboratory prototype of the DS100+ currently existed, but it had a low throughput. With the assistance of partner companies that

specialise in analytics and robotics, the company was planning to unveil an industrial-level application by the end of the year, he said.

CSG is also further developing the DS100+ technology to physically analyse (DSX100) corks.

Ana Cristina Lopes Cardoso, CSG's head of research and development in Porto, Portugal, said DSX100 used non-invasive analysis to provide information about the internal structure of the cork. By using the system, Cork Supply aims to be able to classify corks based on their external and internal structures. Data gleaned from the method is being run through a computer system to establish sorting parameters.

"What we are finding is that each

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*the search  
has ended*



**The Diam 30 is the first cork closure to guarantee sensorial and seal integrity for 30 years.**

cork has its own distinct structure or 'fingerprint' and there can be relevant variation between corks made from the same production lot of cork bark. The complex classification system is an attempt to take this variation, which has always been a challenge for the cork industry, to categorise it and make sense of it," Lopes Cardoso said.

She added the new system could enable CSG to offer wineries natural corks with the same uniform structure and consistent oxygen transfer rates (OTR) as alternative closures.

"The ultimate goal is to develop cork screening technology that provides the most consistent closure that will surpass rival closure technologies," Lopes Cardoso said.

The patent pending system will "harness, qualify and categorically sort the variety Mother Nature already makes available", she said.

"As the computing and technology advances tremendously, it is our task to tailor-make the new technologies to the cork industry," Lopes Cardoso said. CSG will offer more details about how the technology will be implemented in the near future. One possible application is that the company could pinpoint which type of cork would fit a specific wine.

"Our vision is to do individual cork testing, and to assure bottle by bottle, because every bottle has to be assured for our customers," she said.

Lopes Cardoso has been studying cork production since 1998. She said it was an exciting time to be in the industry, when new technology could dramatically improve how corks are produced.

"It's very exciting and very stressful at the same time, because no-one has tried to do this individual analysis, and we produce hundreds of millions of corks a year," she said.

"We are working beyond the state-of-the-art technology for the sensory, for the visual and for the structural analysis."

#### DIAM

Describing it as "one of the most exciting developments in our industry", Diam Bouchage, France, has released the Diam 30 - the first cork closure to guarantee sensorial and seal integrity for 30 years.

The release of the Diam 30 follows many years of investment in research and quantitative testing by the team of scientists at Diam Bouchage France. The company says the Diam 30 offers low yet controlled permeability rates unrivalled by any other closure on the market, guaranteeing controlled OTR's and a neutral sensory impact for every cork, every bottle, and every glass.

"The manufacturing process assures absolute consistency,

giving controlled, consistent ageing throughout the wine's entire cellaring period," said Dominique Tourneix, chief executive of Diam Bouchage.

"This innovation will help wineries avoid delicate, risky re-corking procedures after 20 years of cellaring.

"In addition, the patented Diamant® process guarantees every Diam closure will be free of TCA plus more than 150 other undesirable molecules known to cause off aromas and flavour modification."

Tourneix said the Diamant process and development of the Diam 30 represented an investment of greater than AUD\$80 million.

"All of this adds even further peace of mind for the winemaker, marketer, distributor and consumer knowing that when choosing a wine with a Diam they are assured consistency, without exception.

"In my 25 years of dedicated wine cork supply business, I had all but conceded the perfect wine seal wouldn't eventuate in my life time. The Diam range is, however, that wine seal. Diam is truly the next generation in the sealing of wine having been developed and still today managed by a team of food and beverage scientists dedicated solely to the wine industry.

"Now with literally thousands of winemakers globally confirming Diam's long-term faultless performance, the search has ended."

Diam is distributed in Australia by Vinocor.

#### NOMACORC

Alternative wine bottle closure producer Nomacorc has become the first to create a plant-based closure, Select® Bio, using Braskem's I'm green™ polyethylene (PE).

Braskem is the largest producer of thermoplastic resins in the Americas and a leading biopolymers producer, manufacturing 'green' PE from sugarcane-based ethanol, a 100 percent renewable material.

I'm green PE not only removes CO<sub>2</sub> from the atmosphere due to its renewable feedstock but also contributes to reducing the use of fossil fuel. For each tonne produced, green PE sequesters more than two tons of CO<sub>2</sub>, a significant gain compared with traditional polyethylene.

Nomacorc says its Select Bio closures are 100% recyclable and mirror the company's current Select Series portfolio in oxygen management performance.

Dr Olav Aagaard, Nomacorc's

principal scientist, said that as with other Select Series products, Select Bio minimised the environmental impact of wines by preventing spoilage and waste from wine faults such as oxidation and reduction.

"By consistently delivering the right amount of oxygen into the bottle using a carbon neutral closure, sustainability-minded wineries will now be able to deliver their wines just as they intend," Aagaard said.

"Braskem is a strong organisation with a history of creating reliable, sustainable polymer materials for leading manufacturers around the world," he said. "By using Braskem's sugar-cane based green polyethylene, we can confidently offer to our customers a carbon neutral wine closure that will not only be consistent and optimal for their wines, but also now allows them to create a more sustainable packaging solution."

Select Bio was awarded the Innovation Challenge 'New Technology' award at SIMEI-ENOVITIS in Italy late last year.

"As an industry focused around farming and ecology, we recognise the importance of developing our closures in a smart and sustainable



**Select Bio is 100 percent recyclable, made using renewable, plant-based biopolymers derived from sugar cane and mirror Nomacorc's current Select Series portfolio in oxygen management performance.**

way," said Lars von Kantzow, president and chief executive of Nomacorc.

"We are extremely proud to be cited for our hard work in developing the

world's first zero carbon footprint wine closure, Select Bio, and our achievements in innovation and sustainability."

WVJ

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MC600	50-60 tonne/hr
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