

2017 Closure Survey Report

Natural Cork Remains Favored Closure Type at Small Wineries

Winemakers feel consumer acceptance of screw caps is increasing

Curtis Phillips



Curtis Phillips, an editor for *Wine Business Monthly* since 2000, is a graduate of UC Davis, and has been a winemaker since 1984 and an agricultural consultant since 1979.

AS IN PREVIOUS YEARS, natural cork continues to be the most popular and most frequently used closure type, according to *Wine Business Monthly's* 2017 Closure Survey Report. More than a third (36 percent) of the wineries surveyed are using screw caps to close at least some of the bottles they produce.

Other highlights from the 2017 Closure Survey Report include:

- Most wineries are using more than one closure type.
- Winemakers think that consumer acceptance of screw caps is increasing.
- Winemakers from large and mid-sized wineries are much more likely to use technical cork closures than those from small wineries.

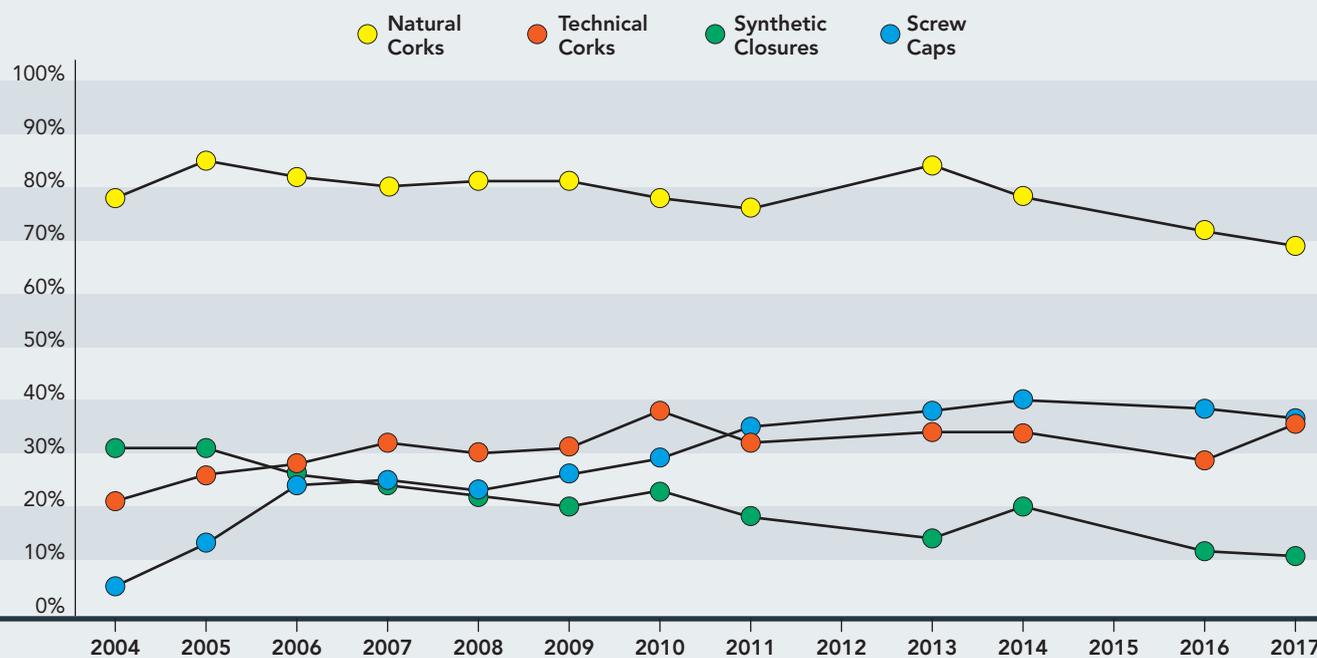
Size Matters: A Tale of Two Wine Industries

WBM has been asking winemakers about closures since 2004. One of the advantages of having that much historical data is that it's pretty easy to see if a suspected trend is real or is merely an artifact of a given year's survey. One of the more noticeable pieces of information we see in the accumulated surveys has less to do with the actual questions asked than the difference between the responses given by winemakers according to the size of the winery for which they are working. Size matters. No matter the survey we take, winemakers from large wineries usually tend to answer differently than those from small wineries.

As one might suspect, the boundary between large and small wineries is fairly fuzzy, and the respondents from mid-sized wineries form a spectrum between the two extremes.

CHART 1

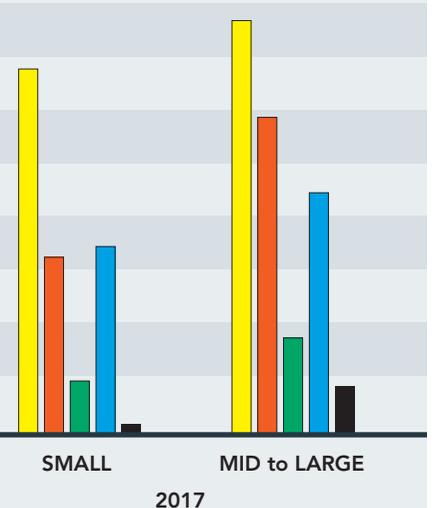
Please indicate what type of closures your winery currently uses on 750 ml bottles.



SOURCE: 2017 WBM Closure Survey

CHART 2

By Winery Size



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Closure Usage

The responses for overall closure usage for wineries that produce fewer than 50,000 cases per year are shown in **CHART 1**. The responses from larger wineries are included in these data, but they are obscured by the much larger number of small wineries, both in the United States wine industry and participating in the 2017 *WBM* Closure Survey.

Except for technical corks, it appears that the usage of all other closure types has dropped. Mostly, this is an artifact of the way this survey measures usage. Respondents are asked which closures they use and to include all closure types in use at their facility. As one can see from the chart, the sum of the categories is well over 100 percent. Any decrease in a given closure type

is most likely to be indicative of a trend toward the use of fewer different closure types among smaller wineries.

CHART 2 shows the 2017 data, but with the responses from small wineries, those wineries that produce fewer than 50,000 cases of wine per year, separated from mid-sized and large wineries. We see that across the board, the larger wineries are more likely to be using any particular closure type. Just over three-quarters (77 percent) of the respondents from mid-sized and large wineries indicated they are using natural cork closures while more than half (68 percent) are using screw caps. Sixty-eight percent of small wineries are also using natural cork closures, but only a third (35 percent) stated that they are using screw caps. Technical and synthetic closures show similar differences between

small wineries and wineries that produce more than 50,000 cases per year, with technical corks having the most extreme differential. Mid-sized and large wineries are almost twice as likely to use technical corks as small wineries.



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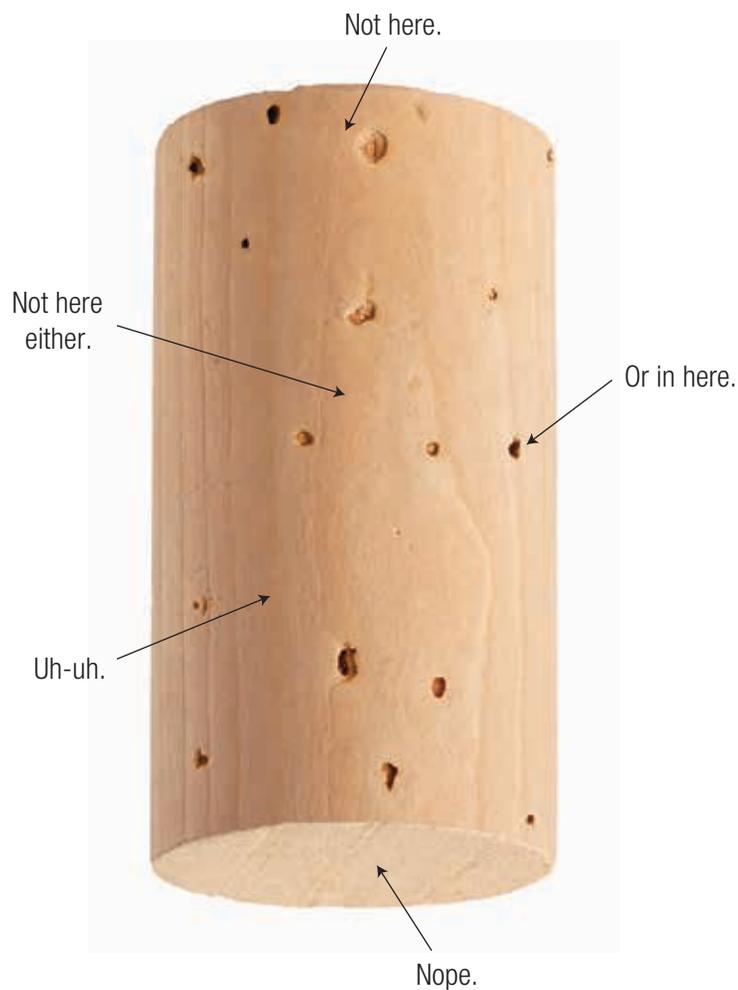
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NATURAL	TECHNICAL
	
SYNTHETIC	SCREW CAP
	
<p>For descriptions of each closure type, see page 24.</p>	

Readers should also note that the results of the 2017 *WBM* Closure Survey are not weighted by the number of bottles closed by a given closure. This means that if a winery sells 100 cases closed by screw caps, 1,000 closed by technical corks, 100,000 closed by synthetic closures and 1 million closed with natural cork, the winery should have checked each closure type for their response.

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* The fine print: releasable TCA content below the 0.5 ng/L quantification limit

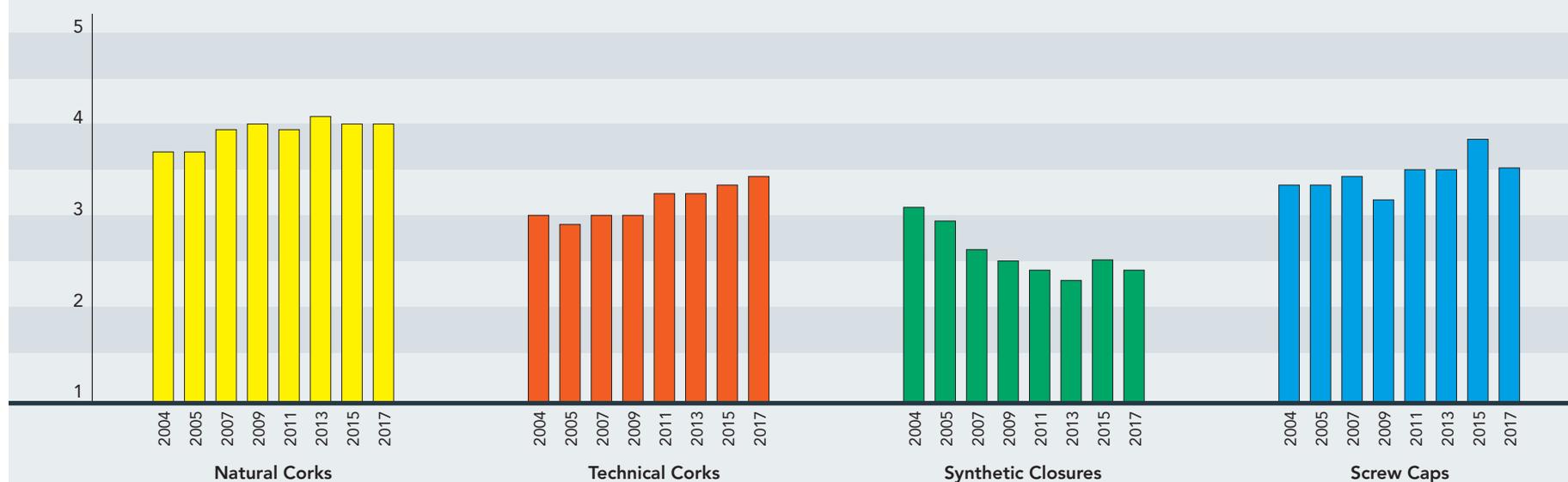


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CHART 3

Please provide an overall rating for each of the closures listed. (1-Very Negative and 5-Very Positive)



SOURCE: 2017 WBM Closure Survey

Overall Ratings

The overall ratings for closures are shown in **CHART 3**. Natural corks, technical corks and screw caps have all seen slight increases in their overall ratings over the past 13 years. The winemaker overall ratings for synthetic closures have been more or less flat since 2007.

Although not captured by this chart, and with the exception of natural corks, which were given a uniformly high rating, winemakers from mid-sized and large wineries rated all closure types slightly more highly than their counterparts from smaller wineries.

WINE CLOSURES

Natural cork is the most frequently used closure by winemakers due to its ability to compress and expand to form a tight seal, as well as allow the wine to breathe over long periods. Natural cork is regarded as environmentally friendly since corks are easy to recycle and cork is sustainably produced (the same trees are stripped about every nine years). Historically, the main drawback of natural cork is the possibility of wine developing cork taint ("corked") brought on by TCA (2,4,6-trichloroanisole) in the wine, which in most cases is said to be imparted by the cork itself due to natural occurrences in the cork or to how it is processed. Over the past couple decades, the cork industry has changed or improved their production processes to the point where there is much less of a chance of TCA contamination. Several vendors now are also guaranteeing their closures have below the detection-threshold levels of TCA.

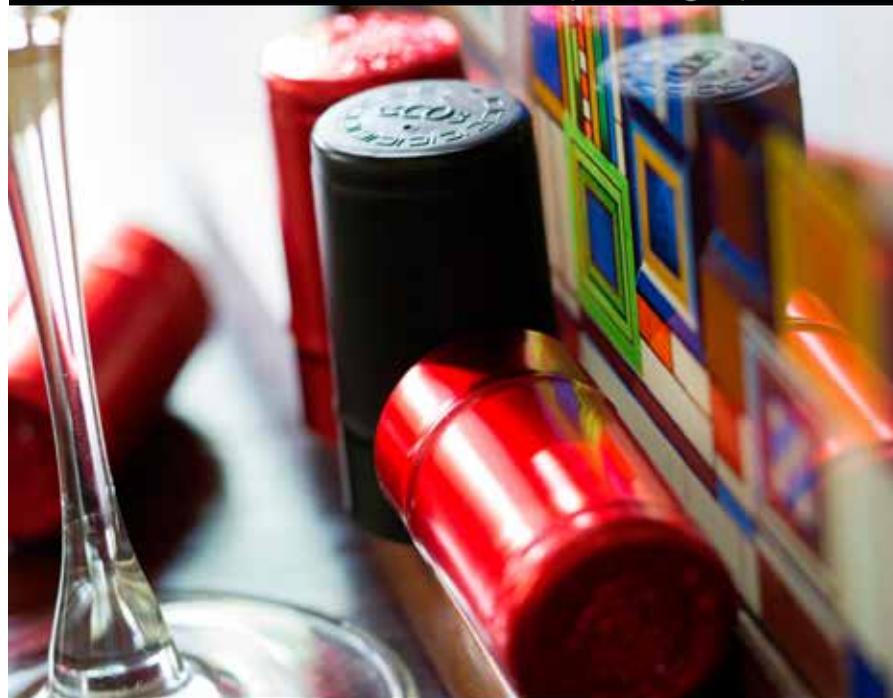
Technical corks include any closure made from cork granules. Often they are made to resemble natural corks and are manufactured using a combination of agglomerated natural cork granules, a binding agent, with other optional parts. For our purposes, this category includes highly-engineered closures like the DIAM that include non-cork 'microspheres' as well as cork granules and binding agents.

Sometimes with natural cork disks glued to the ends (in contact with the wine). These types of corks are also known as "1+1" corks (there are also 2+0: two disks on one end, and 2+2: two disks on each end) and have a low incidence of cork taint compared to natural corks. Technical corks are efficient at preserving sulfur dioxide concentrations within the bottle, and are most commonly used with wines that are meant to be consumed within the short-term (two to three years). The "Twin Top" is the most well-known technical cork developed.

Synthetic closures mimic natural cork closures in how they look and function, for the most part, but are made of plastic (injection-molded or extruded), thus do not present the risk of TCA contamination. The most commonly cited drawbacks of synthetic closures include: difficult to remove from the wine bottle (as well as re-seal) and higher risks of oxygen permeation than natural cork, although this latter aspect has seen improvement. Historically, synthetic closures had a drawback that has created some opposition to synthetics is their environmental impact, as they are oil-based and are not biodegradable like a natural cork. However, some synthetic closures on the market are made from plant-derived ethanol rather than petroleum.

Screw caps, also known as "Stelvin caps," ROTE caps (Roll On Tamper Evident), or ROPP caps (Roll On Pilfer Proof), are made from aluminum and seal onto a wine bottle's neck in a threaded fashion, as opposed to being pushed into the bottle's opening like a natural cork closure. Screw caps are said to offer a tighter seal, thereby protecting against cork taint and keeping unwanted oxygen at bay, serving to preserve aromas and improve a wine's overall quality. Conversely, some have accused screw caps of suppressing wine aroma and quality too much (reduction). Screw caps, the predominant closure choice in New Zealand, continue to rise in usage by U.S. wineries as U.S. consumers become more comfortable with them.

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CHART 4

Please rate each of the closures in terms of consumer acceptance/perception. (1-Very Negative and 5-Very Positive)



SOURCE: 2017 WBM Closure Survey

Perceived Consumer Acceptance

CHART 4 captures winemakers' perception of the consumer preference since 2003. As such, this chart does not capture actual consumer preference but rather what winemakers *think* the consumer prefers.

This chart is interesting in a number of ways. Perhaps most notable is that natural corks have been held at a uniformly high level of perceived acceptance since WBM started asking this question. Similarly, technical corks have been given a uniformly high rating although they have not been as highly rated as natural corks. The only significant movement we see has been for synthetic closures and screw caps.

When CHART 3 and CHART 4 are compared with one another, we see that winemakers think that the consumer view of a given closure type more or less follows their own with the exception that winemakers are a bit less favorably disposed toward natural corks than consumers themselves are. The respondents to the survey took the opposite tack with screw caps and noted that they liked screw caps more than they thought the consumer did.



Bottling Line Performance

CHART 5 shows the average bottling line performance ratings given for the major closure types over a span of 14 years. The ratings for natural and technical corks have not changed significantly and probably indicate that these closure types are known quantities against which the bottling line performance of any other closure is judged.

For the most part, while winemakers are in agreement as to the bottling line performance for most closure types, the respondents from large wineries rated technical corks more favorably than did their counterparts from smaller wineries.

CHART 5

Please rate each of the closures in terms of bottling line performance. (1-Very Negative and 5-Very Positive)



SOURCE: 2017 WBM Closure Survey

The Wine Industry is in the Eye of the Beholder

The *WBM* Closure Survey Report for 2017 shows that when it comes to closures, winemakers in the U.S. wine industry respond differently, according to the size of their wineries. Respondents from large wineries are more likely to use any given closure type. While most wineries are using multiple closure types, respondents from large wineries are more likely to be using three or more than are the respondents from small wineries. Respondents from large and mid-sized wineries are nearly twice as likely to be using technical corks and synthetic closures than their counterparts from smaller facilities. [WBM](#)

Caveats and Clarifications

The *WBM* Closure Survey tracks the *number* of wineries that use a particular closure and does not track relative amounts or total cases bottled under a particular closure. Neither does the *WBM* Closure Survey capture closure usage in terms of numbers of units sold.

In terms of the total volume of wine produced, and therefore the total number of bottles produced, the U.S. wine industry is heavily weighted toward a very small handful of companies that produce about 80 percent of the wine bottled in the U.S. Their closure choices dictate which closures are in most of the bottles of wine consumed.

The total number of a particular closure type used on the high-speed bottling lines in Fresno, Modesto, Stockton and Madera is a nice point of trivia and is certainly important to the companies that supply the packaging materials used on these bottling lines, but it isn't really relevant to the particular closure choices that a small or mid-sized winery on the Niagara Escarpment, the Michigan Upper Peninsula, Upstate New York, Washington, Oregon or even Napa Valley may use. The *WBM* Closure Survey should be interpreted as giving insight into the closure choices of individual wineries, not as a measure of which wine closure types have the largest shelf presence in U.S. grocery stores.

The *WBM* Closure Survey reflects the U.S. wine industry as a whole. The largest half-dozen wine companies account for more than 80 percent of domestic wine sold in the U.S. market. By contrast, the wine produced by more than 8,000 wineries makes up that remaining 20 or so percent. The survey is focused on individual winery operations and doesn't capture closure usage in terms of numbers of units sold.

Synthetic closures are a good illustration of this phenomenon; for several years now the *WBM* survey has been showing a slight but steady decrease in the *number of wineries* that use synthetic closures. At the same time, it appears that more wines are bottled under synthetics than ever. We may be well past the point where more than half the wine bottles in the U.S. are closed by synthetic closures but only 10 percent of wineries use them.

Methodology

This year's Closure Survey received a total of 276 responses from across North America.

Eighty-two percent of survey respondents reported their job as being in wine-making, 62 percent as president/owner/GM, 44 percent in cellaring/production, 41 percent in sales/marketing and 39 percent in purchasing/finance (respondents were able to choose more than one function).

The purpose of the survey was to determine trends in wine bottle closure usage and perceptions within the U.S. wine industry. Please note that the findings of this survey are meant to offer a general look at trends and practices; it is not a scientific study and should be used only as a tool and a point of reference for further inquiry.

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Winemaker Trials

Comparing Composite Alternatives to Natural Cork Closures

Scot Covington, like most winemakers, wondered just what sensory and aging comparisons would be found in 2014 Russian River Chardonnay bottles topped with natural and composite corks opened after a year in the bottle.

Michael S. Lasky

Michael S. Lasky is the former editor of *AppellationAmerica.com* and is the author of hundreds of articles for national magazines and newspapers.

EACH MONTH, WBM FEATURES a more in-depth examination of a winemaker's trial poured at a recent **Innovation + Quality (IQ)** conference, examining what led to the creation of the experiment and the knowledge the winemakers took away from the end results. For more information on IQ and the trials poured at the event, visit www.winebusinessiq.com.

Winery: Trione Vineyards & Winery

Winemaker: Scot Covington

Trial Objective: To evaluate the differences in using composite cork versus natural cork after one year in bottle, looking particularly at mechanic properties of the closures and the organoleptic comparisons.

Summary: After one year in the bottle, slight, if any, differences were found in sensory comparisons by professionals and consumers.

How the trial was conducted: We bottled 2014 Russian River Chardonnay on a standard mobile bottling line using a total of 1,000 corks distributed in varying quantities of natural corks, **Diam 5** closures and **Ganau UNIQ** closures. When we were running the bottling line, I would stop the line and put a bag of one lot's corks on and keep those separate. Then I ran the other corks, again keeping them separate, and continued the process the same way with the third lot.

Lot 1: **Xiberta** I-cork Flor 49mm x 24mm (Natural)

Lot 2: Diam 5 47mm x 23.5mm

Lot 3: Ganau UNIQ 49mm x 24 mm

After one year in bottle, the trial set of three lots were opened, and we performed a sensory analysis in-house and in an informal test with attendees at *Wine Business Monthly's* 2017 Innovation + Quality trials tasting.

Conclusion: I didn't think consumers were going to detect differences among the lots, and IQ attendees were all over the map. Some thought one lot was a little bit more open while others thought the same lot was a little tighter. As a winemaker, this did not change my position. I think the technical corks have a part in the overall wine production. Natural cork has its part too. I think there are going to be winemakers who will use both of them in their wine production. Price is going to drive which cork is ultimately chosen. That's going to be competitive. There's going to be people that still love a natural cork and will pay more for them. If we were just going by cost, I wouldn't use natural cork. As a winemaker in the business for a long time, I like natural cork in its practice, in the way people perceive it. There will always be a place for it but, in the end, it's going to be driven by price.

ANALYSIS NAME	LOT 1	LOT 2	LOT 3	UNITS
total sulfur dioxide	77	85	81	mg/L
titratable acidity	6.2	6.2	6.2	g/L
pH	3.4	3.4	3.41	
molecular sulfur dioxide	0.33	0.45	0.37	mg/L
free sulfur dioxide	13	18	15	mg/L
ethanol at 60° F	14.38	14.38	14.37	% vol
ethanol at 20° C	14.43	14.43	14.42	% vol
volatile acidity(acetic)	0.45	0.45	0.45	g/L

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Winemaker's Postmortem:

Why this trial?

I have been using a couple of different manufacturers of natural cork since I first started as winemaker at Trione in 2005. But previous to Trione, I did a lot of work with natural cork at other wineries. It's always a thing that's on your mind as a winemaker. I like natural cork myself and am familiar with the creation of the **Cork Quality Council** but still have always looked at natural cork alternatives. I have used Diam, Versa and Ganau for different wines, but when Ganau came to me and said, "Hey, we've got this alternative, a technical cork that is similar to Diam," I said, "Okay. I'll try it," and that led to this trial.

What were the sensory results after each lot was one year in bottle?

There was a slight difference, with the natural cork being a little bit more open in both instances. But I don't think consumers are going to even notice.

From the results, what have you learned and how will you use this knowledge in future wine blending?

I'm going to use the Ganau technical cork more going forward. I like their technical cork, and at its price point it's going to fit my budget. Of course, I like natural cork too, and it serves a purpose, particularly with our higher-end wines. For me, it comes down to the price point of the cork I will use for most of my bottling. So, let me phrase this not as any sort of brand promotion but as my experience and preference as a winemaker: My experience with Ganau corks has been good. Corks are a competitive business; so if I am satisfied with their performance, my choice comes down to price point. The Ganau corks don't perform any better than Diam's.

What, if anything, would you do differently after this trial?

I wouldn't change my winemaking regimen. I did open my eyes a little bit to the perception of natural cork with consumers. It's such a small characteristic that I think I would use natural cork for our top-tier wine, and I would use technical cork for anything else. I have confidence that it would age properly, or it would maintain the varietal characteristics after it has left the winery moving forward.

The trial was also duplicated simultaneously with 2014 Russian River Valley Pinot Noir opened after one year of bottle-aging. Sensory results are, so far, the same with the three Pinot lots as they were with the Chardonnay. **WBM**


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Closure News:

SINCE THE BEGINNING OF the year, a number of closure companies have released new products or announced changes to their processes. What follows is a review of some of the developments from these suppliers.

Nomacorc Switching Global Production to Plant-based Polymers

NO LONGER A “PETROLEUM-BASED” PRODUCT

Nomacorc, which first introduced closures made with biopolymers derived from sugarcane as a line extension back in 2013, is in the process of switching all of its production of synthetic closures to plant-based polymers and expects to complete the switch-over in about a year.



The closures are still made from a polyethylene but are now derived from alcohol that is fermented from sugar cane. The bio-based polymer has a lower carbon footprint. The Green Line is produced using renewable energy and is fully recyclable. The manufacturing process hasn't changed much but the raw material has. The 'Green Line' includes chamfered edges and embossed ends that are now standard.

“We made a conscious strategic decision to convert all of our petroleum-based closures to plant-based closures derived from sugar cane,” business development manager **Mark Coleman** told *Wine Business Monthly*. “We want to change the narrative from ‘synthetic cork’ to ‘PlantCorc’. We want to change it from, ‘These are entry-level closures,’ to ‘Technology has changed and these are suited for premium wines.’”

Nomacorc sells roughly 850 million closures each year in the U.S. market and has delivered about 200 million of the new plant-based closures thus far. Coleman said 80 percent of Nomacorc's U.S. customers have already changed over, with a couple of large volume accounts still in the process of evaluating the new closures. He said Nomacorc has been upgrading key accounts cost neutrally, though the new closures cost more to produce.

Cork Supply Group Introduces VINC, a New Line of Micro-Agglomerated Corks

Cork Supply Group (CSG) launched VINC, a new line of TCA-taint free (releasable TCA less than or equal to 0.5 ng/L), micro-agglomerated corks with a range of very low oxygen transfer rates. Every VINC cork is evaluated for TCA not by lot, but on an individual basis, cork by cork.

This is a result of the VAPEX process, created by the Cork Supply research and development team. It is a batch cleaning process that reduces TCA on cork granules through effective mass and heat transfer.

VINC is the first new product line to be launched from the company's dedicated technical cork facility, **Cork Supply Portugal 4** (CSP4), which is operated by executive director, **Antonio Bastos** and production supervisor, **Manuel Antonio Ferreira**. It offers three closures with varying OTRs: VINC with granules sized 0.5 to 2 mm and an oxygen transfer rate of 0.002 cc per day; VINC + with granules sized 0.5 to 1 mm and an oxygen transfer rate of 0.0017 cc per day; and VINC Cuvée for sparkling wines with granules from 0.5 to 2 mm.



“The VINC product line is the result of the work of our focused research and development team,” says **Jochen Michalski**, CSG’s founder. “We opened CSP4 last year to be able to offer taint free, best-in-class micro-agglomerated corks produced from 100 percent of our own high quality raw cork materials. As Cork Supply integrates rigorous quality controls during harvesting and production of our natural corks, all remaining cork materials from that production are of very high quality.”



Diam Bouchage Launches Entirely Plant-based Origine

As part of its efforts to become a more sustainable company with environmentally friendly products, **Diam** launched Origine, an agglomerated cork closure made from natural cork, beeswax emulsion and 100 percent organic vegetable polyols. Rather than use a traditional polyurethane binder, the combination of bee by-product and vegetable polyols ensures that the closure is entirely plant-based. This new technology is the result of research combining permeability and natural ingredients, and it responds to the demand from premium customers to create more open permeability closures that maintain the long life needed for aging wines.

“The use of beeswax reflects our company’s commitment to green practices and products,” said **Francois Margot**, sales manager for Diam North America, Japan and China. He added, “It is also reflected in the name we chose, Origine by Diam. Pollination performed by honeybees is the basis of the biodiversity of our planet. With oxygen, it is the origin(e) of the life cycle of our cork oaks, and thus, our closures. This is why Diam Bouchage is also contributing money to support critical habitats for bees by sponsoring hives in different French wine regions to help build and sustain bee populations.”

The oxygen transmission rates and length of time closures are guaranteed for will not be affected by the new products. Origine is currently available for the Diam 10 and Diam 30 lines, though it will be extended to other products in the future. All corks are guaranteed TCA-taint free (less than the limit of quantification of 0.3 ng/l). **WBM**



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