

WINE BUSINESS MONTHLY

May 2023 \$5.95

The Industry's Leading Publication for Wineries and Growers

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THE EQUIPMENT ISSUE

A Modern Upgrade for Inglenook Winery
Innovation Highlights from Unified

Plus ~

The Changing Landscape for Vineyard Financing
Google Analytics Shift Could Leave Businesses Behind





VIN GRAND CRU ZEBRA

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Manfred Krankl

SINE QUA NON

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Banking, Winemaking, and Google Analytics

Spring has arrived and the vineyards are bustling with activity. Growers are counting clusters and attempting to size up the crop. Vineyards and the weather are top of mind as the May issue reaches mailboxes, but we haven't forgotten about the winemaking side, with an inside look at innovations introduced during the Unified Wine & Grape Symposium, and equipment upgrades at one of Napa's iconic wineries.

It sometimes feels like the "natural" wine craze is spreading like crazy; In January, Wine Business Monthly even published a Varietal Focus story on natural wines—even though the category accounts for a very small slice of total wine sales. So-called "natural" winemakers choose not to interfere and are limited in the tools at their disposal to correct winemaking glitches. On the opposite end of the spectrum are "interventionist" winemakers. This month we check in with perspectives from three such "interventionist" winemakers who prove that they are not out to manipulate a wine. Rather, they hope to guide the purest expression of the grapes using the tools at hand.

But of course, the news over the last month has not been about the vineyard or winemaking philosophies. An article in this issue covers banking, the cost of capital for vineyard and wine-related ventures, and how the challenge of rising interest rates is affecting wineries and growers. Winemaking and grape growing are unique, capital-intensive businesses and interest rates are a big consideration. Interest rates were historically low a year ago and there were more options for financing vineyards and wineries. Today, the picture is different. Interest rates have doubled within a single year.

Moreover, as we found out suddenly a few weeks ago, rising interest rates are risky for banks, too. One bank that had 400 wine industry clients even failed due to losses sparked by rapidly increasing rates. It was since acquired by another bank. Here's hoping the banking uncertainty brought on by high rates eases sooner instead of later.

On July 1, 2023, the world will change. A new version of Google Analytics, GA4, will be released with the promise of providing marketers new insights about their customers—however, it will no longer use third-party cookies to do so, a result of many of the new data privacy laws enacted worldwide. It's a major shift that will affect anyone with a website trying to understand their customers, wineries included. If your business isn't preparing for the shift, it could be left behind. Long story short, your old data won't import into GA4, nor can you access historical data through it. Google has declared "out with the old and in with the new." People, get ready.

Here's to understanding one's customers, staying up to date, and to successfully navigating the financial waters.



WINE BUSINESS MONTHLY

May 2023 • Volume XXX No. 5

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Wine Business Monthly is distributed through an audited circulation. Those interested in subscribing for \$39/year, or \$58 for 2 years, call 800-895-9463 or subscribe online at subs.winebusiness.com. You may also fill out the card in this magazine and send it in.

~ Cyril Penn



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winemaking

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Any Winery that Uses Google Analytics to Track Website Views, Purchasing or Omni-Channel KPIs Will Lose Data Come July 1, 2023

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Jane Jiang, Proprietor/Winemaker Duncan Peak Vineyards, Hopland, California.



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Ed Adams

vice president, corporate banking group for American AgCredit, "Vineyard Banking: Navigating an Uncertain Economy in the Wine Sector," page 68

"Rising interest rates, inflation, pandemic distortions in wine sales in an ambiguous economy, and the recent closure of Silicon Valley Bank are creating a challenging operating environment for both wineries and growers."

Michelle Kaufmann

vice president of communications, Stoller Wine Group, "Google Analytics 4.0 Set to Disrupt Data Collection, E-Commerce and Marketing Initiatives," page 72

"There's a storm brewing on the horizon, and it will fundamentally shift how we talk about data collection, measurement and analysis."

Clay Shannon

CEO, proprietor and owner of Shannon Family Wines and Shannon Ranch, "Viticulture Research: Grazers and Trailblazers," page 46

"These animals can provide incredible winter weed control under the vine. They can thin out suckers and leaves in the lower canopy during which time they are dropping and stamping in about five pounds of manure per animal per day."

Sam Coturri

proprietor, Winery Sixteen 600, "Industry Roundtable: Interventionist Winemaking," page 20

"At this table, we are all in the business of making terroir-driven wines that represent the place from which they come without letting philosophy or style get in the way of that. We need to apply the tools and technology that we have to make wine as good as we can for the year and the place. We owe the vineyards and the farmers that, as well as our customers."

Stephanie Honig

director of export and communications, Honig Vineyard and Winery, "Switching to Lighter Bottles: The Beneficial Domino Effect for Wineries," page 54

"The 'lightweight' bottle still has a punt and a good look and feel. We did benefit from decreased shipping costs for our retail customers due the fewer pounds per shipment."

Hayley McAfee

designer, 4Parts Design, "Small Format Sparklers By a Trio of Sisters," page 60

"From a design standpoint, the wrap-around or full panel aspect was key. Being able to design across the whole canvas of the bottle versus the usual couple of inches on a standard label panel—especially on the smaller 375ml—gave us the opportunity to express the brand in a pretty unique way."

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Top Stories from WINE BUSINESS.com – In Case You Missed It



Grape User Fee, Material, and Service Fee Rate Increase

In late March, Foundation Plant Services (FPS) increased the base user fee due on grape materials—effective for grape propagative units sold, exchanged, or retained in 2023 and after—from \$0.04/unit to \$0.08/unit. It also increased rates for grape material sold by FPS after April 1, 2023. The new price structure is based on three different sizes for cuttings and budsticks, and for graftsticks. The previous prices for testing & treatment will be honored for any requests that were initiated prior to April 1, 2023.



Pierce's Disease is Detected in Humboldt County Grapevines

The Humboldt County Administrative Office revealed that grape leaf samples taken by the county's department of agriculture tested positive for Pierce's Disease. This marks the first time the disease has been detected in Humboldt County. Three grape leaf samples were taken from domestic and wild grapevines in Humboldt County's Will Creek neighborhood. The county's department of agriculture plans to conduct more research and take additional samples after the vines wake up from their winter dormancy.



Washington Wine Reports Larger Harvest, High Quality in 2022

In 2022, 240,000 tons of winegrapes were harvested in the state of Washington, a 34 percent increase over the previous year, according to the recently released Washington State Wine Commission annual Grape Production Report. The report also revealed that both Cabernet Sauvignon and Chardonnay showed significant increases over 2021, 32 percent for Cabernet Sauvignon and 54 percent for Chardonnay. Overall, white varieties experienced a 50 percent increase, while red varieties had a 23 percent increase.



Southern Glazer's Acquires WEBB Banks, Expanding to the Caribbean, Central America, and South America

Southern Glazer's Wine & Spirits announced plans in mid-March to acquire Miami-based distributor WEBB Banks, which distributes premium wine and spirits in the Caribbean, Central America, and South America, as well as in the travel retail and cruise sector. The acquisition, anticipated to close on March 31, expands Southern Glazer's reach to the Atlantic and the travel retail sector.



WSWA Announces Commitment to Federal Legalization and Regulation of Adult-Use Cannabis

On March 23, Wine & Spirits Wholesalers of America announced its commitment to advocate for the federal legalization and regulation of adult-use cannabis by applying regulations like those used for alcohol. The organization is the first alcohol industry trade association to make such an announcement. In a letter shared in March to members of Congress, the association presented a comprehensive regulatory framework and a warning that addressing the issue in a "piecemeal manner" may result in a de facto federal legalization that doesn't address product safety, trade practices, and other factors.



Wine Growers Canada Welcomes Excise Duty Inflationary Cap of 2% in Federal Budget

In a press release Wine Growers Canada said it welcomed the March 28 announcement to implement a cap of 2 percent to the annual adjustment to the excise duty on alcohol in Canada. The annual indexation of alcohol excise duties to the Consumer Price Index would've meant a 6.3 percent rate increase this year, according to the press release, and Canadian wine growers would have been hard-pressed to absorb such a tax hike.



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TECHNICAL REVIEW

Breaking New Ground at Inglenook

Historic Property Poised for Next Century Thanks to New Production Winery

Andrew Adams

Andrew Adams is the editor of the *Wine Analytics Report* and grew up in the city of Sonoma, Calif. before graduating from the University of Oregon with a degree in journalism. In addition to working at daily newspapers for more than a decade, Adams worked in the cellar and lab at the former Starmont winery in Napa Valley before serving as a writer and editor at *Wines & Vines* magazine for nearly a decade.

JUST PAST THE BARREL WASHING station near the entrance to the cold room in the vast network of caves at Napa Valley's Inglenook estate is where the company held its last major event—and it proved to mark the end of one era and the start of another.

The rather unremarkable passageway from one cave, which houses a barrel work area, to the cave for barrel aging is where, on Feb. 13, 2020, estate owner and famed film director Francis Ford Coppola drove a small front-end loader in front of a crowd of more than 100 employees to literally break through the excavation of a new cave network into the winery's existing caves.

While the ceremony was the last major event at the winery prior to the pandemic, it could also be viewed as the start of the next era for the historic winery.

Inglenook now boasts an additional 22,000 square feet of caves thanks to an expansion to create a sophisticated production facility, which was finished in time for the 2022 harvest. It is the next step following the 2011 hire of director of winemaking, Philippe Bascaules, who worked as the estate director of Château Margaux in Bordeaux for more than a decade. The facilities at Inglenook are now comparable to the best of Bordeaux as the Coppola family continues to invest in a property that has a tradition of wine-making going back to 1879.

Handling day-to-day winemaking are senior associate winemaker Chris Phelps and associate winemaker Jonathan Tyler, who also helped manage construction and equip the new winery.

An abundance of top-of-the-line processing and fermentation equipment provides the wine-making team with an enviable level of labor efficiency and logistical flexibility to focus on each unique section of the estate vineyards while also running multiple trials each vintage to maintain and improve wine quality.

Tyler said all grapes arrive at the winery in small bins that are emptied by hand into a Bucher Vaslin Delta Densilys that separates the clusters from any MOG in a receiving hopper filled with water. Lighter debris floats to the surface

where it's collected into a waste channel.

"It's to get the fruit as clean as possible," Tyler said. "The Densilys was an option to clean dust and impurities off of the grapes to really get our pure fruit."

The Densilys feeds into a Bucher Vaslin Oscillys destemmer that empties onto a densimetric sorting table, which sorts the loose berries. The berries then run through a WECO optical sorter that feeds another elevated conveyor with rolling crushers at the top. The

equipment ensures the grapes are clean for sorting and fermentation; and while the automated sorting does reduce the number of workers needed for processing, the use of smaller picking bins (that also get washed) means it's still a relatively labor-intensive setup.

The sorted and lightly processed grapes then fall into one-ton tanks, called "cuvons," that are made by the French firm Serap Group. They feature a large, actuator-activated valve on the bottom. Once filled, the tanks are lifted above the top hatch of a fermentation tank by a forklift; and after another worker on a catwalk has ensured each tank is in position, they are connected to a compressed air outlet, and the bottom valve is opened to drain the smaller tank—it takes about 10 seconds—into the larger one.

The winery houses 120 double-walled and -insulated, stainless steel fermentation tanks used for the distinct portions of their 235 acres of certified organic estate vineyards. The gentle processing and use of gravity to transfer the must is a key part of the winemaking team's crush pad strategy.





An Abundance of Fermentation Space

Phelps said the new winery has the capacity to handle all the various growing regions of the estate individually, but the breakdown is not a rigid allotment of specific vineyard blocks to individual tanks.

The calculation, done by Tyer, was based on an average crop size, picking dates and fermentation times as well as other parameters to match the variables of yields and winemaking with a fixed amount of tank capacity. The winery generally produces between 22,000 to 25,000 cases a year from 700 to 750 tons

of estate grapes. The estate Cabernet Sauvignon accounts for 10,000 cases, with production of the Rubicon blend coming in at around 7,500 cases. A further 1,200 cases of Syrah are produced.

The fermentation tanks can be used for white and red ferments but were designed with extraction and maceration in mind.

“These are a little taller than you might expect because there’s been this sort of one-to-one golden rule, right?” Phelps explained. “By having a relatively small surface at the top of the cap, we can control exactly how we conduct a maceration. We’re more about slow and gradual and stopping it right when we think it’s a perfect time. With the bigger tanks we really noticed a faster rate of extraction.”

Phelps and his team arrive at that perfect point to press through daily sensory analysis, complemented with routine wine chemistry and tannin analysis. Each tank is equipped with its own pump-over system and remote temperature monitoring and control via a TankNet system.

According to the winery, the automated tanks required more than 30 miles of electrical and communication wiring through the cave that was constructed with more than 1,000 cubic yards of low-CO₂ concrete. Must Fabrication in St. Helena provided the pump-over pumps and all the various piping needed to equip each tank with such a system.

“With all the extra automation, we’re able to really dial in all of the details,” Tyer said. “We can get extremely precise with our pump-overs and our extractions and the introduction of air.”

The pump-over setups are also equipped with a sparging stone that is supplied with filtered air from an oil-free compressor. The system can be used to control and monitor headspace gassing, and additional tank ports can be used for probes to monitor Brix or dissolved oxygen.

According to Tyer, one safety feature is that the sparger cannot run unless the pump is running. The pumps are also used for washing, followed by Blue-Morph UV lights for sanitation.

In addition to better winemaking precision, the new technology also made the 2022 harvest much easier. When asked if there were any time and labor savings this year compared to others, Phelps and Tyer both answered with an emphatic yes.

“This year we did harvest with less people than we have in the past,” Tyer said, “and for the most part, we were running shorter days.”

Most of the fixed tanks range in size from three tons to 15 tons; the winery also has four large tanks that will be used for blending but could handle 27 tons





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for fermentation. A handful of small, portable tanks are used for small lots, white wines and trials.

Myriad tanks mean winemaking decisions are made purely based on quality rather than freeing up capacity to accommodate grapes that need to be picked.

Tyer said it's more efficient, and they're able to control every single parcel and realize the full potential of each.

At the top of the tanks, the hatches can be opened and closed with one hand, and also offer the ability to use fixed gas lines for headspace gassing and carbon dioxide evacuation. For headspace gassing, Tyer will either use argon Dewars or nitrogen from the winery's own generator. With carbon dioxide evacuation lines in place, one of the winery's long-term goals is to retain and reuse the gas produced from fermentation.

"There are some different options that in the future could be possible," Phelps said. "One is to make dry ice, which would be awesome, another is just to collect the gas and try and use that, and another would be to inject that CO₂ into the ground."

For the time being, and perhaps most importantly, the system ensures that a cave filled with hundreds of tons of fermenting must doesn't fill up with lethal carbon dioxide gas.

Phelps noted that it's a very efficient evacuation system, and there was never a trace of CO₂ in the cave this harvest.

Tyer said each tank base is fitted with CO₂ sensors that trigger a variety of alerts and alarms, and the warning system stayed quiet during the entire 2022 harvest.

Staying True to a Classic Style

While the cave doesn't require climate control, there is a chamber that does because it's used for white fermentation. The room is also where the two vertical presses and a brand-new basket press are stored. White wines ferment in a mix of 75-gallon stainless steel Mueller drums or puncheons.

Tyer said they designed the room big enough so that they can stack two high, making it easier for topping and accessing the barrels.

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Inglenook produces a Sauvignon Blanc and white Rhône blend called Blancaneaux that is comprised of about a third each of Viognier, Roussanne and Marsanne. The whites receive regular lees stirring through the winter prior to bottling in the spring.

Both the reds and whites spend time exclusively in French oak, with the estate Cabernet Sauvignon aging in roughly 75 percent new barrels, Rubicon seeing 50 percent new and the estate Syrah about 35 percent.

While the winery does have a core of about four coopers it uses each year, Tyer and the rest of the winemaking team closely evaluate all barrels every vintage.

“Every year we have all of our coopers, and we try and put the same wine lot into all of them and have those stay completely separate up until bottling to really identify if any of them are changing qualities that we like or don’t like,” he said.

The whites are bottled under Diam corks while the reds are sealed with natural corks that have undergone individual TCA testing by Portocork and Amorim.

The barrel washing area—equipped with a washing unit, steam wands and an ozone generator—is the connecting passage between the new and the 16,000-square-foot of caves dug in 2003. Following a tour of the new facility, Phelps said it was Coppola’s idea to move the new winery underground rather than at the top of the knoll, as originally planned, out of respect for the natural environment.

Although that initial planning phase of the project started in 2015, the new winery can be viewed as the final act of restoration that started when Coppola purchased the property in 1975.

Since then, the company has created a 50-year vineyard replant plan, brought in Phillippe and continued the restoration in earnest after Coppola purchased the Inglenook name in 2011.

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“The vineyard is the big thing,” Phelps said. “A new winery is fantastic, but it’s not the crucial part. But to Francis, there’s no reason we don’t deserve the latest, greatest—not fancy but hyper-practical—and still aesthetically pleasing facility. That’s the last missing element of what he sees is just the complete restoration and update for this property. He wants it to be on the level of a Bordeaux first growth, a Napa first growth.”

Phelps is quick to add that the goal is by no means to mimic Bordeaux but remain true to an estate that has produced dozens of classic vintages going

back to the ’70s and earlier. He said the wines coming off the estate in the past two decades are much closer to those classic vintages, an assessment based on extensive tannin and anthocyanin analysis, as well as tasting.

“We’re not trying to fight anything during harvest, and this harvest [2022] I think we really saw that it’s just guiding the grapes through the winery into the bottle and trying not to get in the way,” he said. “We have reason to believe that we’re much closer now to what was done in the late ’70s-early ’80s. We feel confident we’re on that track now.” **WBM**

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technical review



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VINEYARD INFORMATION

Appellation

Rutherford

Vineyard acreage

235

Varieties grown

Cabernet Sauvignon, Cabernet Franc, Merlot, Petit Verdot, Syrah, Marsanne, Roussanne, Viognier, Sauvignon Blanc and Semillon

Soil type

Well-drained volcanic and alluvial soils

Climate

Mediterranean

Total tons

450

Sustainability certification(s)

CCOF Organic (1994)

Sustainability practices (not certified)

Napa Green (in process)

BUILDING THE WINERY

Year built

2022

Size (square feet)

22,000

Architect

Matt Hollis Architects

Contractor

Nordby Construction Co.

Cave excavation

Nordby Wine Caves

Owners/Principals

Francis & Eleanor Coppola

Winemakers

Philippe Bascaules,
Director of Winemaking
Chris Phelps,
Sr. Associate Winemaker
Jonathan Tyer,
Associate Winemaker

Vineyard & Cellar Operations

Enrique Herrero

Year Bonded

1879

Winery Case Production

20,000

Average Bottle Price

\$225

WINEMAKING

Receiving hopper

Bucher Vaslin

Sorter

Delta Densilys, Bucher Vaslin, WECO optical sorter

Destemmer

Oscillys, Bucher Vaslin

Crusher

Bucher Vaslin

Tanks

120 stainless steel tanks, double-walled and ranging in capacity from 3 to 15 tons
Four large tanks (27 tons) will be used for blending

Small portable tanks are used for small lots and trials

Sumps (for processed fruit): Serap Group

Tank heating/Chilling systems

TankNet providing individual control for every connected tank

Pump-over screens, devices, pumps

Must Machining & Fabrication

Pump-over control

TankNet

Pumps

Francesca and Cazaux

Presses

Horizontal presses: Bucher Vaslin
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Interventionist Winemaking

Aaron Weinkauf

Lance Cutler

THE NATURAL WINE CRAZE is spreading like crazy: new wine bars are opening in many cities across the United States and around the world; in places as disparate as Valley Bar and Bottle in Sonoma and El Huerto Farm to Table in Cabo San Lucas, restaurants are dedicating their wine lists to nothing but natural wines.

While natural wine is trending and, anecdotally, winemakers will tell you that it's the top-selling category among Millennials—in its January issue, *Wine Business Monthly* even published a Varietal Focus story on natural wines—it still accounts for less than one percent of total wine sales.

Since the basic tenet of natural winemaking is “add nothing and remove nothing,” natural winemakers are severely limited in the steps they can take to correct glitches. They have the same shed of winemaking tools available to them but have chosen to padlock the door. As natural winemakers gain more experience and are confronted with more problems, they will have to develop regimens to deal with problems if they are to make consistently excellent wines.

On the opposite end of the winemaking spectrum, Sam Coturri of Winery Sixteen 600 recently said in an interview that he is an “interventionist” winemaker, particularly when producing his *Á Deux Têtes Grenache*. “All the attention we pay to the vineyard demands that we do the same in the winery.”

Wine Business Monthly thought it would be a good idea to have a roundtable discussion with three “interventionist” winemakers. We wanted to know their underlying philosophy of winemaking, learn how they made decisions regarding their wines and ask their thoughts on non-interventionist winemaking.

We started with Sam Coturri, whose father, Phil Coturri, has long championed organic and sustainable farming. Phil manages close to 600 acres of vineyards in Sonoma and Napa. The winery produces small-batch, single-vineyard wines. Sam runs the winery with his mother and brother.

Aron Weinkauf graduated from Fresno State University with a degree in viticulture and enology. In 2006, the Novak family brought him to Spottswoode Estate Vineyard & Winery as assistant winemaker. He took over as vineyard manager in 2009 and formally became winemaker in 2011.

Kerry Damskey has more than 30 years of winemaking experience. His Terroir Inc. provides expertise on vineyards and winemaking, along with business practices and operational development. Along with wife Daisy and son Drew, the family runs Palmeri Wines, a small, ultra-premium winery that specializes in Cabernet Sauvignon, Syrah and Chardonnay.

Is there an overriding philosophy when deciding what to do for your winemaking regimen?

Damskey: When I have a new vineyard project, it takes two or three vintages to understand it. Every once in a while, you hit it straight up on the first time, but usually, it takes at least two vintages. I make wine in Israel and India, so one question is whether to use California winemaking techniques there. By that, I mean pick ripe, use heavy extraction and, in general, be bold. I did that but found in more cases than not, it didn't work. While it might be successful in California, that style was not successful in Israel or India at all, so I had to change.

Coturri: It wasn't that the winemaking was unsuccessful; it was more that the consumers' preferences were different from what was successful here.

Damskey: Correct. In those situations, I was the lead winemaker from California, mentoring winemakers in those countries, and they didn't like the wines.

Coturri: It is a continually moving target, but you want to do the best by the vineyard as you can. At this table, we are all in the business of making terroir-driven wines that represent the place from which they come without letting philosophy or style get in the way of that. We need to apply the tools and technology that we have to make wine as good as we can for the year and the place. We owe the vineyards and the farmers that, as well as our customers. The level of intervention will change every vintage and, possibly, every vineyard. You are going to use different tools. We used different tools in 2022 than we did in 2018.

Damskey: I was giving a talk to a wine-knowledgeable group in India. The idea of adding water blew them away. They couldn't fathom that at all. They thought that if you have a target alcohol, why don't you just pick at that sugar level?

Weinkauf: That's the point. Are you targeting alcohol level or everything else that comes along with it, like the phenological aromatic components? There are lots of arguments for picking at 22° Brix instead of 19° because of how plants mature and where all the aromatic and polyphenolic components are on an upward trajectory at 19° Brix. None of them has peaked really. There is



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“What drives the success and interest in natural wines is that they don’t have that sameness. The sameness is avoidable if you are true to terroir as opposed to using all the tools every time.”

SAM COTURRI, WINERY SIXTEEN 600

a big argument for not picking too early. At the other end, most of them get on downhill trajectories. Now, we know there are also arguments for not picking too late, not pushing ripeness for the sake of extraction. It’s always a bit of give and take. I figure it all depends on what we are targeting.

I think we all have a concept of what we are trying to do, whether it is our own habit and skill set that create our limitations, or our knowledge of a new appellation, new country, new growing situation where it takes a few years to understand what is at the heart of what you are doing. You have to know where you are hoping and wanting something to go before you can get there. It’s all about picking at ripeness to express terroir because either side of ripeness will cause other things to become dominant in those wine characteristics, whether it is too ripe or not ripe enough.

Is deciding when to pick the ultimate driving force when you make the wine?

Damskey: It is also how the grapes and vines look at the time. Where is the vine heading in its declining season? Obviously, it is the flavor of the berries,



Phil Coturri (left) & Sam Coturri

which is super critical at the end. If you’re not going through each vineyard at least twice a week, those incremental changes are hard to differentiate. It’s hard to describe when it is there. It is the absence of sugar and water, and then this flavor just comes up, and it is a weight that’s there. Unless you’ve been tasting regularly, you won’t get it. It comes with years of doing it.

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Kerry Damskey

“I would want the winemaker to tell me what they were looking for in the way of aroma, taste and visual profiles. If they told me that didn’t matter, I wouldn’t want to work with them. If the focus is just being natural, that’s not enough.”

KERRY DAMSKEY, PALMERI WINES

Coturri: My dad calls it “the sparkle.” You need to have tasted the same vineyard several times in a vintage. I can convince myself I know when it’s time, but the more experience you get, the better chance you have of getting it right.

Weinkauf: I would only argue that in that context of picking things ripe, you still have these weird curves. You’ll have a “sparkle” at 21.5° Brix that makes a very different wine. Then that sparkle will return later. It comes in waves. Things come in and out, and you can appreciate the coalescence of those things that makes the sparkle, but it changes, and the finished wine changes, depending on whether it is picked at 22° or 25° Brix.

I started forming my winemaking ideologies in the late 2000s. Everyone was still trying to push ripeness and sugars higher and higher. By the 2010s, people started pulling back. Then there’s the context of the vintages: 2017 and 2022 were a whole different exercise in what type of wines you were going to get at lower sugars. In those vintages I saw vines that were collapsing and turning into raisins with sugars spiking quickly, or I found this weird stagnation where all ripening and sugar accumulation stopped. Nothing happened for a month.

Damskey: We saw that last year after the heat and after the rain.

Weinkauf: That’s why I think it has been a sort of fun experiment. I try to envision what a wine from a given area can taste like theoretically at its apex. Then you need to figure out how to get from A to B. With vintages like 2017 and 2022, you are not making those decisions. Mother Nature is forcing your hand and telling you when you are going to pick and at what Brix.

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Once you pick, what is your wine regimen?

Coturri: The availability of quick turn-around, broad-spectrum analysis in the vineyard and in the cellar is the first and last thing you are going to do. So much of what happens, once it hits the cellar floor to the end, is going to be determined by these lab reports. It's still about the way it tastes, but the ability to react to the minutiae of the chemistry within 24 hours or less changes the game as to your winemaking regimen.

This year it was about being able to react to VA levels quickly, to make acid adjustments when necessary, especially in years like this. The chemistry wasn't upside down, but it wasn't like anything I'd seen before. This year the VA came from the vineyard, especially in some Cabernet vineyard sites. We had days of 118°F followed by rain. Testing allowed us to deal with those issues from the get-go.

Damskey: There are considerations when you go into a vintage with issues. Do you do cold soak or do you rack it through? Do you press early or normally?

Weinkauf: And how quickly our envisioned plans for 2022 changed into actual plans. It was brutal.

Coturri: It all changed over a five-day period.

How would you work in the cellar with grapes from a more amenable vintage?

Coturri: In a perfect vintage, where you intervene is not with the fruit, it's with yourself. You need to extract yourself from the process. As a young winemaker, knowing when to do nothing is the hardest thing to learn. When not to do one more pump-over, to make another nutrient addition. You know, just put the formula down and step away. When you have a problem, you need to fix it. When you don't have problems, you need to extract your ego out of it.

Damskey: Let's say the wine has 45 grams of sugar and 15.4 percent alcohol. Do you press and say this puppy is done for fear of VA because it has done spontaneous malolactic? That would be my strategy. Another winemaker might wait it out. Those are two vastly different paths to dealing with a problem. You have sugar, and VA is just waiting to happen. It is not a do-nothing situation.

Weinkauf: I have similar experiences. Ideally, we want to get things dry on skins. Even with simultaneous malolactic, you know there is healthy yeast, taking the sugar down because once that sugar is gone, you are much more stable. As a wine finishes up, there are a lot of stress factors from a difficult growing season that just exist within the fruit or if it is high alcohol. All these issues feed in and help inform any decisions you are going to make, but you always have to make a decision.

Tony Soter said, "I like to think of myself as a craftsman, and I want to have as many tools as possible available to me to achieve my craft." The goal is to not do anything. Everyone has an investment in doing the least amount to that process. It's when things start to go haywire or you are dealing with difficult vintages or fermentations, that you want to have the tools, knowledge and skill set to react quickly to produce what you are setting out to do. We are all interventionists by the way, or we'd be making vinegar.

Damskey: I agree with that 100 percent.

Coturri: With all these tools we possess, there is the chance to make flawless wines, and the danger of that is sameness. What drives the success and interest in natural wines is that they don't have that sameness. The sameness is avoidable if you are true to terroir as opposed to using all the tools every time. You

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Interventionist Winemaking

can avoid sameness by having great sites and doing your best to let them express themselves. Natural winemakers also make decisions, by choosing not to apply one of their tools to a situation. Their style of philosophy is intervening in their ability to make clean, stable wine.

How do you go about making your Sauvignon Blanc?

Weinkauff: We pick from quite a few vineyards. We try to pick each when we think it is ideally ripe. We bring it in and usually whole cluster press. We settle it out in tanks 24 to 48 hours before going to fermenters. We add yeast because it is such a cold fermentation. Around 56°-58°F most native yeast won't do well and will stick. It's just the nature of the beast. I've done plenty of native yeast fermentations on whites, and they are almost always problematic, so this is a layer of security. We also know that just because you've inoculated with one yeast, it won't necessarily be the one that finishes a fermentation. Most yeasts identified within wines, during fermentation, are all known genetically as commercially available yeast.

I try to take advantage of everything. There are lots of great yeasts from across the globe that are transparent and impactful because of how the aromatic compounds of Sauvignon Blanc can go very reductive or very terpene, depending on how the fermentation is managed. It can be an awesome tool for creating complexity, texture and aromatic nuance. With all the trials we've done throughout the years, we have identified certain yeasts as our favorites. Those are the general core of what we are working with. Then on a block-by-block vintage basis, we decide where we are going to use those. We have our cabinet of yeast, and we can select from those what we want to accentuate, given how a given block is performing in a given vintage. If we have a block whose sugars and ripeness are getting a little high, we might want to accentuate

a bit more reductiveness or accentuate more herbaceousness. The cool thing is that certain yeasts can do that.

We monitor Brix every couple of days, and we ferment in a variety of containers: used wood, new wood, stainless, cement and clay. Some of the regimen is inherited. A certain style was developed before me, so there was a bit of a transition and being respectful of the path that we had been on and not changing too drastically. Now, 16 years into it, it feels a bit more like me. I have a gluttonous appreciation for learning new things. I did not have access to cement tanks when I was in school. I had no understanding of what they were doing to fermentation kinetics. Now we have fired ceramics, and they are totally different from raw cement. Just for the education and to build my working knowledge of these kinds of tools, I try them out. It's nice to know more about new things. It's also part of the winemaker's spice rack. Those different components of diversity and complexity can be incorporated to bring about a more dynamic finished product.

We sterile-filter all our wines. We work hard to get wines ready to go into bottle as high-quality product. We are never working with a sterile product, microbially or bacterially anyway. There is always stuff in there. It is our guarantee that once we get it to that stage where it is ready to be bottled, from that point forward, it's going to be what we intended.

How do you make your Á Deux Têtes Grenache?

Coturri: We are working with small lots of very expensive Grenache, so our margin for error is very narrow. I would love to ferment from different blocks, using different vessels and yeasts, with and without stems, but there are only three tons: one fermentation tank. We pick ripe, especially with Grenache.

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The first choice is whether to use whole cluster—especially in small lots, whole cluster is part of the winemaker’s spice rack concept. When the stems are in the right condition with the right amount of lignification, it can help fix pH and lends structure and spice. Ironically, it can bring elegance by lightening things up if you have some green flavors in there. The 2022 vintage was not one where we wanted to use any of the stems, so it was all destemmed. We were cautious about problems with that vintage. *Á Deux Têtes* is essentially the last wine we make, so we had already experienced stuck fermentations, weird VA issues and heard from all the winemakers and growers we work with about their problems, so we were concerned that something might go wrong.

This wine is unique among our wines. It has the longest cold soak of anything we do. After we destem and crush, we inoculate with a non-saccharomyces yeast. It pulls oxygen out so we don’t get spontaneous fermentation during the cold soak. We’ll go seven to 10 days, keeping the temperature in the low 50s or lower if we can. We’ll let the temperature come up and inoculate with the strains that we are using, along with Fermaid O. The yeast is close to what they are using in *Châteauneuf* and the Southern Rhône. We are pushing the margins of Grenache winemaking in a lot of ways, including the ripeness that we are picking it at. We have to make sure it finishes and finishes strong.

We’ll punch down until fermentation gets going and we are in the high teens Balling. Then we will do a series of four to five *délestage* sessions during primary fermentation for maximum extraction. This is the formula, style, and concept that we got from Philippe Cambie. It’s wild, you get this massive extraction, using massive intervention, because once it goes dry, we’ll do one or two more *délestage* and up to 45 days on skins with light punch downs before pressing. Malolactic usually happens naturally during the extended maceration. Then we’ll have it in tank for a week or two to make sure it finishes. From there it goes to one- and two-year-old 500L barrels. We sterile filter before bottling.

How did you make your 2021 Palmeri Semillon?

Damskey: The 2021 Monte Rosso Semillon comes from 120-year-old vines. It came in, and we started it with native yeast and fermented it in all new puncheon barrels. Then for no reason, it stuck. I’m watching the fermentation, and it started to drastically slow down around 5° Brix. I figured it was time to intervene. The first step is to find out why it is slowing. Is it alcohol, VA or something else? I put it through the ETS Scorpion to check for spoilage, but there was nothing indicated. I watched it for two to three weeks. I was patient but kept an eye on key chemistries, like VA, which were creeping up.

We took the wine out of the barrels and moved it to a tank. We chilled that down to 50°F to stop everything. This was total intervention, and then we did a reset. VA was about 7 grams. I used a combination of *Vinquiry’s* cascade method and Scott Lab’s. We used yeast hulls to suck up toxins. The alcohol wasn’t too high, so I didn’t need to worry about that. I used a yeast that lent no flavor at all, and I used the equivalent of 3 pounds per 1,000, which is a higher rate of yeast than I would normally use to start primary fermentation. I started a culture, added some sugar then slowly added stuck wine back into it in 20-percent increments.

You can’t accurately check sugars at this point with a hydrometer. You have to perform glucose/fructose analysis. Once the glu/fru has halved toward the negative side, you can add another increment of stuck wine. The outcome was good. Had I not intervened in this case, there is a good chance the wine would have been lost. I racked the wine back to the puncheons once it finished fermentation. The wine was slightly fatter than the previous vintage. We even considered blending some Chardonnay into it to increase minerality. In the end, we decided to leave it as it was. We cold-stabilized and heat-stabilized, and then sterile-filtered to prevent malolactic fermentation. I did all this because I feared losing the wine and saw this as the only way to maintain quality. I had a target for what I was shooting for in this wine. In the end, this wine didn’t veer significantly from that target.



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Given your interventionist tendencies, what would you say to natural winemakers?

Weinkauf: It's funny. The couple natural winemakers I know started down that path as an ideology; but after a couple of vintages, they were completely flooded with VA. They are no longer happy with their choices. I don't think those things happen in a vacuum, whether it is naturalists or corporate, homogenized, wanting to deliver a perfect exact product every single time. I have no suggestions. When we start down our individual paths for philosophical reasons, we must reckon with those choices, and we will realize the strengths and flaws of those decisions over time. A lot of the people I know realized it quickly and started making changes because they wanted something better.

Damskey: I would spend a lot of time getting them to discuss desired outcomes, with rational discussion and support. I would want the winemaker to tell me what they were looking for in the way of aroma, taste and visual profiles. If they told me that didn't matter, I wouldn't want to work with them. If the focus is just being natural, that's not enough.

Coturri: An inherent catch-22 with natural wine is that to excel in non-interventionist winemaking, the margin of error shrinks. One way to build the margin back is to be sure that the quality of fruit that you are purchasing is excellent. The problem is that purchasing quality fruit is expensive, and at some point, you can price yourself out of the market for the natural wine sector altogether. The trick is finding fruit quality that is good enough, along with a sanitation and cellar regimen good enough to deliver an excellent product at a price point that is financially viable. It is so daunting a challenge that I personally can't imagine building a business upon it.

EVERY WINEMAKER HAS their own approach to winemaking, and they should have an idea of what they want each wine to taste like. Low intervention and natural winemakers hope that working in the vineyards to provide the best grapes will allow them to produce wines reflective of the individual vineyards while minimizing extraneous manipulation of the winemaking process. Interventionist winemakers also dedicate themselves to creating the best fruit in the vineyards, and they hope to do as little as possible during fermentation and aging, but given a difficult vintage or a specific problem, they insist it is their responsibility to step in where needed to honor the vineyard and produce the best wine.

The more vintages a winemaker has under their belt, the more likely they are to encounter problems. Interventionist winemakers are checking things from the moment grapes arrive at the winery. They have a wide range of tests to track the wine through the process, and they have a shed full of tools to help their wines through any issues. They are ready and willing to intercede whenever the wine needs help should they deem it necessary.

Everything in winemaking is a give and take situation. Natural winemaking has already influenced many high-tech winemakers and forced them to reevaluate technological convention until they intervene only when necessary. As natural winemakers encounter more problems, they likely will intercede to protect wine quality, no matter how minimally they approach it. In the end, we all get better wine, and that's the point. **WBM**

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From Climate Tech to Data Management, Unified Shows the Latest Innovations

Richard Carey

AT THE 2023 UNIFIED WINE AND GRAPE Symposium in Sacramento, Calif. in January, there was an incredible amount of equipment, instruments, processes, and information to explore on the two days that the exhibit halls were open. Since many of the 800-plus exhibitor booths had signs posted that their company had products or processes that addressed or helped with climate issues, it's not surprising that several of the products featured in this year's "What's Cool" article reflect that concern.

For the Vineyard

ePLANT

The ePlant device taps into a more mature grapevine with wireless sensors and data systems that process the vine's growth. The sensor can monitor plant growth, biomechanics and the environment. The collected data provide actionable insights to improve vine health and performance. This can help minimize negative environmental impacts, such as drought or even physical damage.

Each device is capable of long-range data transmission that can be sent via ethernet, cell or satellite, and uploaded to the cloud.

FLORAPULSE TENSIO METER

The FloraPulse tensiometer is an embedded device that is attached to the trunk of a grapevine. The microchip is in direct contact with the xylem of the trunk and so measures the water potential in real time. Vineyard workers will be happy they won't have to lug pressure bombs around a vineyard anymore. Information will go to a smart phone, and you can find all the water data from the vineyards tagged in the vineyard.



The FloraPulse Tensiometer attaches to the trunk of a grapevine for accurate water potential measurement of woody plants.

The FloraPulse system operates as a subscription service. This includes all the real-time data, the probes, cell-powered data loggers, cellular data, visualization, warranty and probe replacements. The service provides weekly updates of the water stress level of a vineyard. The soil moisture sensor provides information about the water status of the soil around the vines. The device is estimated to save 15 to 40 percent on water usage.

LUMO IRRIGATION

Lumo is a cloud-connected smart valve that has a built-in flow meter and pressure sensors. The valves are solar powered for easy installation and follow-up control of the valve. The onboard electronics monitor the flow of water and when it is being transferred. The valve offers tamper-proof manual operation, as well as soft-close technology to minimize water hammer. The valve is ruggedly constructed with a fiber-reinforced polymer.

The Lumo valve has a system health function that can detect leaks in the entire irrigation system. Data recording is on a block-by-block basis for easy record keeping. The valve was designed for data collection in an agricultural environment and for data transfer over long distances and difficult topographies, as needed, to get data to the cloud.

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The Opti-Gro tubes act as individual growth chambers that can protect plants from wind, hail and other environmental effects. The result is that fruiting of the vines occurs more quickly, often by one to two years. It does this by allowing the root system to develop faster, with increased carbohydrate storage for the second year. The company also claims that the device increases the rate of CO₂ uptake with the same irrigation protocol. Vines grown with Opti-Gro develop lignified, mature laterals in their first season, which can enable some production in the following year.

For the Winery

FLEXCUBE WEST

There is a "new" old entry into the plastic wine tank business. The Wine Firm is now reintroducing the new Flexcube from Australia into the U.S. market. The new tank has several modifications and improvements over the older system, which include a global patent on the non-plastisol plastic used in the wine tank's construction material, complete drainage from the tank, a new screw-on manway with a flat easily-sealed gasket and an overflow mechanism to help limit over-pressuring the tank when it's filled, thus reducing any internal pressure. The frame of the tank has been modified to allow stacking up to 4.6M high.



The new version of Flexcube West's tank can be stacked to 4.6 meters high. It is available in three different oxygen transfer rates.

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The Bucher Vaslin Flavy-X 6 module crossflow filter can include their energy saving module.

Go-Ferm Sterol Flash yeast allows cool water rehydration with no loss in cell viability.

The new tanks are available in three different levels of oxygen transfer rate (OTR): Low is 6 mg/L/Year, Medium 9 mg/L/Year and High 12 mg/L/Year. This will provide a range of aging profiles so that the winery can select the type and quantity of oak treatments to store in the container and then monitor them to get the right balance of oak, wine flavors and aromas.

The company will market a 2,000L version of the tank, and is also making 100, 300 and 600L versions constructed from the same materials.

GUSMER ENTERPRISES, INC.
(DISTRIBUTOR FOR BUCHER VASLIN)

A supplier of wine filtration equipment, Bucher Vaslin continues to innovate products to meet the needs of wineries and enologists. Its **Flavy X-Wine** product line consists of filters with two to 10 modules. The modules are

designed to handle difficult wine filtration issues, and the filters have wine flow rates of 750 to 11,300 liters (200 to 3,000 gallons) per hour.

Bucher Vaslin developed the cross-flow filtration of juice lees 20 years ago. The company's **Flavy X-Tremé** product line is the result of continued development and improvement of the original design. With the Flavy X-Tremé membranes, juice recovery from lees can be up to 90 percent, with stable and high flow rates. This product is capable of processing from 11,300 to 58,700 liters (3,000 to 15,500 gallons) per day and can filter both juice lees and wine with the same set of membranes.

A new product line of low carbon footprint cross-flow filters, **Flavy FGC**, has recently been launched. The new membranes have an increased capacity, with filter flow rates of 3,400 to 32,100 L/hr. (900 to 8,500 gph), while maintaining a low loss of wine. Another benefit of this development is a significant reduction in KWH electrical consumption, which can be as much as a 95-percent reduction compared to other tangential filter systems.

LALLEMAND

Go-Ferm Sterol Flash™ is a new yeast rehydration nutrient that is fast to rehydrate without compromising on yeast viability and vitality. It improves fermentation kinetics and aroma production while allowing yeast to be rehydrated in cool water (15°C or 60°F). It also eliminates the need for acclimatization, which means yeast can be added directly to juice or must in 15 minutes. The product is derived from autolyzed yeast and provides optimized levels of micronutrients (vitamins and minerals) and extremely high levels of sterols and unsaturated fatty acids. It can also react to soften harsh tannins and increase fruit intensity and colloidal stability.

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What's New at Unified



The CloudSpec provides winemakers with data on grape color development, potential harvest dates, press fractions and aging profiles sooner.

Pure-Lees Delicacy™ is a yeast-based, highly reactive mannoprotein preparation that coats harsh tannins to soften mouthfeel, increases fruit expression and assists with colloidal stability. This yeast is primarily recommended for red wines but can be used in phenolic white and Rosé wines. It is added at the end of alcoholic fermentation or during aging, but wine should be racked prior to filtration.

Pure-Lees Elegancy™ is also a highly reactive mannoprotein preparation that can help remove aggressive tannins, improve wine texture and assist with colloidal stability. Wine balance and mouthfeel are improved, and there may be an increase in fruity notes. Similar to Delicacy, it can be added at the end of alcoholic fermentation or during aging, but wine should be racked prior to filtration.

The recommended dosages for both Delicacy and Elegancy are 200 to 400 ppm (20 to 40 grams per hectoliter or 1.7 to 3.3 pounds per 1,000 gal.).

VIVELYS WINE BY DESIGN

Vivelys has introduced Scalya up, a system that will capture the CO₂ from fermentation and store it in a tank for use in other areas of the winery. The system is comprised of tubing to capture the gas from a tank and a drying unit to take any tank vapor out of the CO₂ gas. This gas is then compressed into a storage tank as part of the system.

The company suggests that this gas can be used to control extraction of red wines and facilitate red wine removal from the fermenting vessel. Other uses include help in maceration and pressing of white and Rosé wines and possible inerting of other tanks prior to filling. By capturing and sequestering the CO₂ in a tank, the amount of CO₂ accumulation in the air and the cellar environment is lowered.

Installing a CO₂ capture system now will place a winery ahead of the curve for other new developments in the alternate uses of excess CO₂ from fermentation that are likely to be coming in the future due to climate-improving actions by the wine industry.

For the Laboratory

MARAMA LABS

For those of us who have worked during harvest and needed to make the decision concerning when the hard press should be separated from the rest of the wine, it has been a challenge to determine changes in the color because the wines are cloudy. In the past, spectrometers have not been able to determine color shifts accurately when the medium has insoluble solids that block light transmission through the solution.

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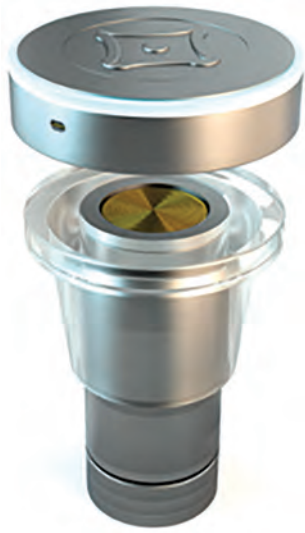
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Cogni Simple Labs wireless bung has the capability to analyze temperature, phenol/guaiacol, acetic acid, free SO₂, pH, alcohol and fill level without removing the bung.

Marama Labs has introduced **CloudSpec**, a patented spectrometer that can “see through” a cloudy matrix and provide accurate spectral analysis of phenolic compounds and color ratios for wine. This is a newly released instrument that will soon be commercially available. To date, no other instrument has been able to achieve this ability. From the color of grapes during ripening to the time of harvest, crushed grape juice and wine immediately post-fermentation, a winery will be able to look at their color profile and phenolic development more quickly. This information will provide just-in-time harvest determination that will optimize wine quality. A winery will be better able to detect when wines deviate from a desired trajectory earlier than has previously been possible.

COGNI SIMPLE LABS

For a winery’s barrel program, a winemaker is always concerned about the status of particular analytes in those barrels. A new solution is about to enter the market. Simple Labs is finalizing Cogni, which is a wireless, continuous barrel aging monitor that looks like a high precision barrel bung. Embedded in the bung are from one to many sensors, depending on how many analytes need to be monitored. The bung is wirelessly connected to the winery network and transmits the results on a regular basis. If the result falls or increases above a specified threshold, an alarm is triggered and sent via email or text message.

Once released, the bung is designed to track temperature, phenol/guaiacol, acetic acid, free SO₂, pH, alcohol and fill level.

UNIVERSAL BIOSENSORS

The handheld wine laboratory instrument **Sentia**, which was introduced by Universal Biosensor a few years ago, now has a fourth measurement added to its repertoire. In addition to the current free SO₂, malic acid and glucose, they have added fructose. The company plans to add several other analytes and make improvements to the user interface.



The “Sentia” is a handheld laboratory instrument for malic acid, free SO₂, glucose and fructose measurement.

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What's New at Unified

Antares Vision Group (formerly FT System NA) - Beverage Division

Empty Container Inspection	Fill Level Inspection	In-Line Gas Concentration Measurement	Cap Inspection
The Antares inspection systems for empty containers performs a quality and compliance check on many types of containers before arriving at the filler.	The fill level inspection system is designed to detect the correct filling level inside the bottle, eliminating containers that do not comply with parameters.	The in-line oxygen concentration inspection is designed to monitor oxygen and pressure in a bottle's headspace.	The cap inspection system is designed to ensure caps and capping quality are in compliance. There are systems to check each type of cap before and after capping.
Label and Code Inspection	Rejector	In-Line Leak Detection	Weight Control
Label inspection systems are designed to perform quality and compliance checks on many types of labels and codes.	Rejection and deviation systems eject non-compliant products from the production line.	In-line leak detection systems perform non-destructive inspection on every item in the production line and are designed for any type container.	There is a high-precision dynamic weighing process for many different package shapes, sizes and weights.
Laboratory	Robo Qcs	Monitoring	Product Handling
Non-destructive and non-invasive laboratory instruments measure pressure (total and partial), as well as vacuum and gas concentration in closed containers.	Robo Qcs is an automatic robotic system that can monitor product quality in a single pass, using non-destructive inspection techniques.	Sensors and software can analyze and process data collected to evaluate the performance of filling and capping devices and detect the causes of problems during the filling process.	Antares' inspection systems can handle products on traditional conveyor systems including sliding plate systems for complex product handling.



Crafted ERP added a sustainability module to its winery/vineyard data management program to track a wide variety of energy, waste, transportation, consumables, or production materials in one dashboard.

For Packaging

DIAM CLOSURES

At Unified, the CEO of Diam Bouchage announced improvements to the Diam Technological corks distributed by G3 Enterprises in North America. All Diam corks have defined oxygen ingress rates (OIR) and oxygen transfer rates (OTR). An ingress rate is the amount of oxygen coming from the stopper into the wine at packaging, and the transfer rate is the oxygen passing through the stopper to the wine inside.

Diam closures are now available with differing OTR, in combination with the average length of time the closure can maintain a tight seal, which varies from two to 30 years. This new flexibility allows a producer to bottle wines that are early release with a higher OTR than a second release of the same wine packaged with a lower OTR. Each of these can be coupled with the expected life of a closure.



Diam Closures has technical corks that are appropriate for wines with useful life ranges of 2 to 30 years, with multiple OTRs available for each level.

FT SYSTEM NA

FT System offers a number of analyses, solutions and services to resolve packaging issues and has developed a helpful diagram to determine which best suits the client. On the company's website, one can select the wine and spirits industry (left orange block in the Product Category) then a drop-down list of

packaging items, from kegs to pouches and everything in between (column 2, orange block, Type of Container). From that list, the user can select the testing procedure they desire to control (column 3, Control Level), and a tree of options will open for the type of test or analysis desired (column 4). If, for example, you are monitoring your glass packaging, there are choices, from empty bottle inspection, closure inspection, labels, weight and many more. Each selection includes several items that will help you focus on what you may want to analyze for your packaging needs.

For Data Management

CRAFTED ERP

This winery/vineyard data management program has added a sustainability module to their offering which will make it easier for wineries and vineyards to keep track of production actions with an eye toward sustainability. Once set up, the dashboard shows how every action that a winery and/or vineyard takes impacts the overall energy balance and carbon footprint of the operation, how sustainable the organization is currently and the direction it appears to be going.

The dashboard summarizes actions, both in terms of absolute quantity of a part of production, such as electricity or waste composting, but also adds the cost of those actions, either up or down, on a monthly basis.

AGROLOGY/PROCESS2WINE

Agrology is a predictive technology that enables growers to receive valuable insights that will help them take action to preserve their crops. When Agrology is integrated into the Process2Wine Predictive Agriculture platform, the data can provide real-time insights into management of the condition of the soil and canopy. Vineyard managers will receive work order suggestions that will allow them to track incidents through completion. The result for their vineyard is valuable data. Agrology data, combined with Process2Wine information from the vineyard, wine production and packaging, are a powerful addition to the Process2Wine platform.

The Agrology Platform has an easy-to-use link to the Process2Wine Predictive Agriculture platform that will help growers with water, irrigation, pest prevention, spraying, soil, smoke taint and extreme weather. Agrology also offers technology for soil carbon sequestration validation and greenhouse gas monitoring, based on its proprietary technology that leverages machine learning, IoT and extensive ground-truth data. [WBM](#)

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Understanding the Effect of Barrel-to-Barrel Variation on Color and Phenolic Composition of a Red Wine

Leonard Pfahl, Sofia Catarino, Natacha Fontes, António Graça and Jorge Ricardo-da-Silva

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AGING IN OAK BARRELS is a traditional and widespread practice in wine-making worldwide. Alternative containers, such as stainless steel tanks, concrete vessels, or polyethylene tanks, surpass barrels in some respects, like price, hygiene and material homogeneity. Nevertheless, barrels are still firmly established in quality wine production due to their positive influence on the organoleptic quality and complexity of wine.^{1,2}

Various phenomena related to physical and chemical characteristics of the oak are directly responsible for these effects. First, there is water and ethanol non-negligible evaporation due to the porosity of the wood,³ as well as some wine absorption by the wood (especially in new barrels).

Second, there is the transfer of extractable compounds, such as ellagitannins and volatile substances, like guaiacol, eugenol, ethyl- and vinyl-phenols, as well as oak lactones (β -methyl- γ -octalactone) and furfural (-derivates).⁴ The total amount, though, is limited and quickly reduced by the extraction process into wine.⁵ The extracted substances influence sensations, such as astringency and mouthfeel, and increase aroma intensity and complexity.

Third, moderate oxygen permeation and diffusion, through the wood, promote different reactions of oxidation, polymerization, co-pigmentation and condensation, involving anthocyanins and proanthocyanins, which stabilize the color and reduce astringency. Storage in barrels accelerates the natural sedimentation of unstable colloidal matter, thus contributing to wine stability and limpidity.²

Barrels are made from a natural product, wood. The most commonly used species are: *Quercus petraea* (sessiliflora oak), *Quercus robur* (pedunculated oak) and their hybrids, and *Quercus alba* (white American oak). Locally, alternative botanical species, other than oak, may also be used.⁶

Wood composition and the production process underlie a variation.⁷ The main influencing factors are the oak species and origin of wood,⁸ the seasoning and its location,⁹ and the toasting process in the cooperage.⁵

Barrels influence wine phenolic composition and color development during aging. For this reason, phenolic compounds are likely to be affected by barrel-to-barrel variation. This variation is widely known to winemakers, resulting in tastings and analytical control of individual barrels. Despite these facts, there is little to be found regarding barrel-to-barrel variation in the literature.

Variation of barrel influence can be problematic for analyses of barrel lots as it bears the potential of misinterpretation of results. This study aimed to shed light on the variable influence of barrels on wine color, pigments and phenolic composition of wood-aged wine. This trial stands out due to its practical background with a wine produced at winery scale. The large number of 49 barrel samples from four cooperages resulted in robust results (**FIGURE 1**).

Effect of Cooperage on Barrel-to-Barrel Variation

The Principal Component Analysis (**FIGURE 2**) revealed overlapping areas for all cooperages. It's therefore consistent that no significant differences were found between the cooperages A, C and D for almost all analyzed parameters. However, cooperage B revealed for some analytical parameters significant differences between just one or two of the other cooperages but also, in a few cases, to all other cooperages.¹ Why cooperage B showed slightly different characteristics might originate in a smaller oxygen uptake through the wood and rifts between the staves.⁹ Hence, this might be related to the cooperage's production techniques and oak wood selection. To conclude, the wine aged for 12 months in different barrels varied in its phenolic and chromatic characteristics, but the cooperage of an individual barrel could not explain these variations.

Furthermore, it was checked if the cooperage had an influence on the barrel-to-barrel variation by comparing the average coefficient of variation to the barrel-to-barrel variation of each cooperage.

The standard deviation ranged from 0.5 percent for general physical-chemical parameters, over 1.2 percent for most phenolic parameters, to 3.1 percent for pigments and 7.9 percent for anthocyanin-related parameters.¹ Due to the small standard deviations, it can be concluded that the cooperages do not differentiate from each other with practical relevance in their internal variation for most parameters analyzed in this trial, with the exception of pigments and especially anthocyanin-related parameters.

Effect of Barrel on Barrel-to-Barrel Variation

Chemical characteristics analyzed in this experiment showed individual barrel-to-barrel variation with a range from 0.01 percent to 37.2 percent. General

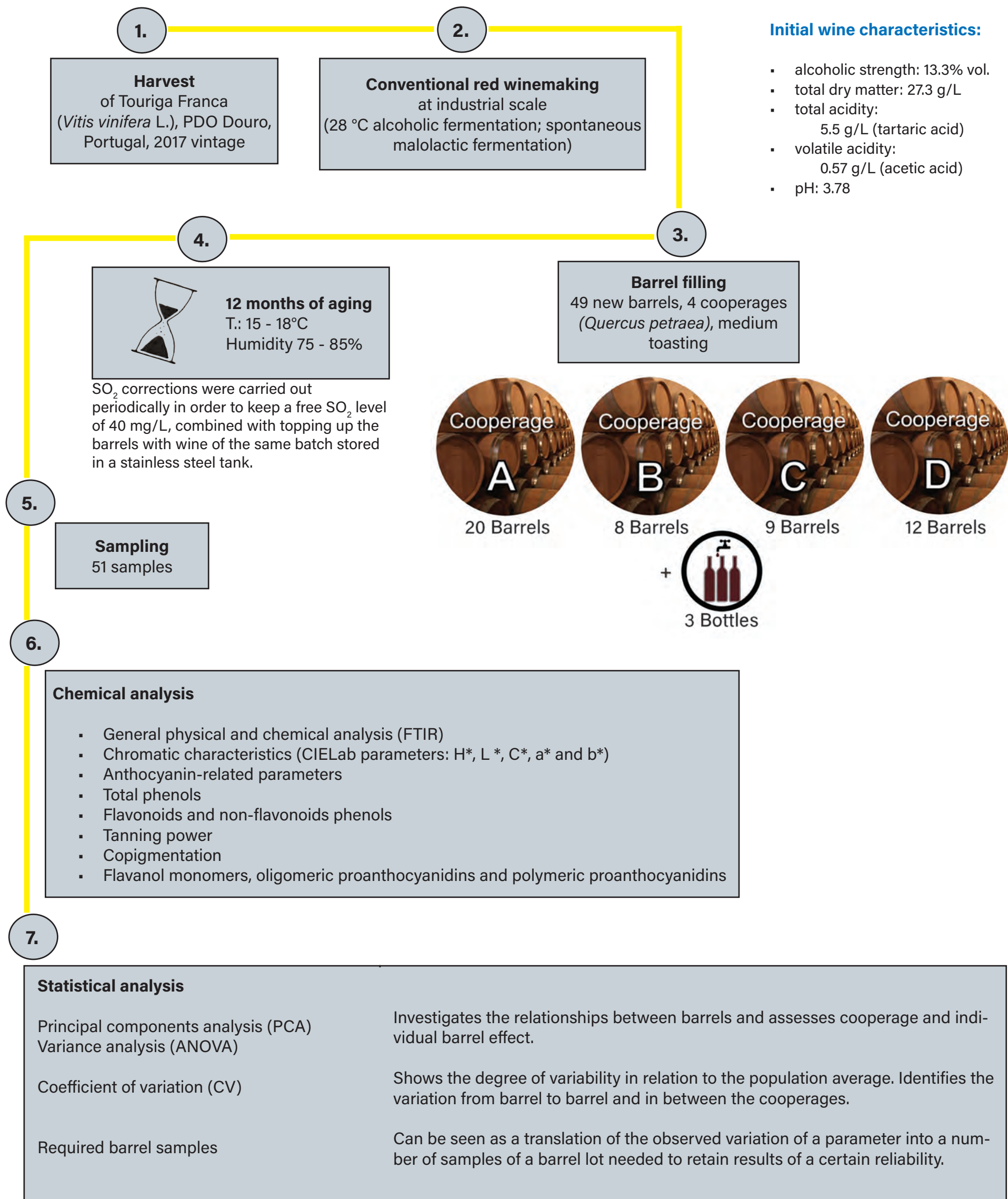
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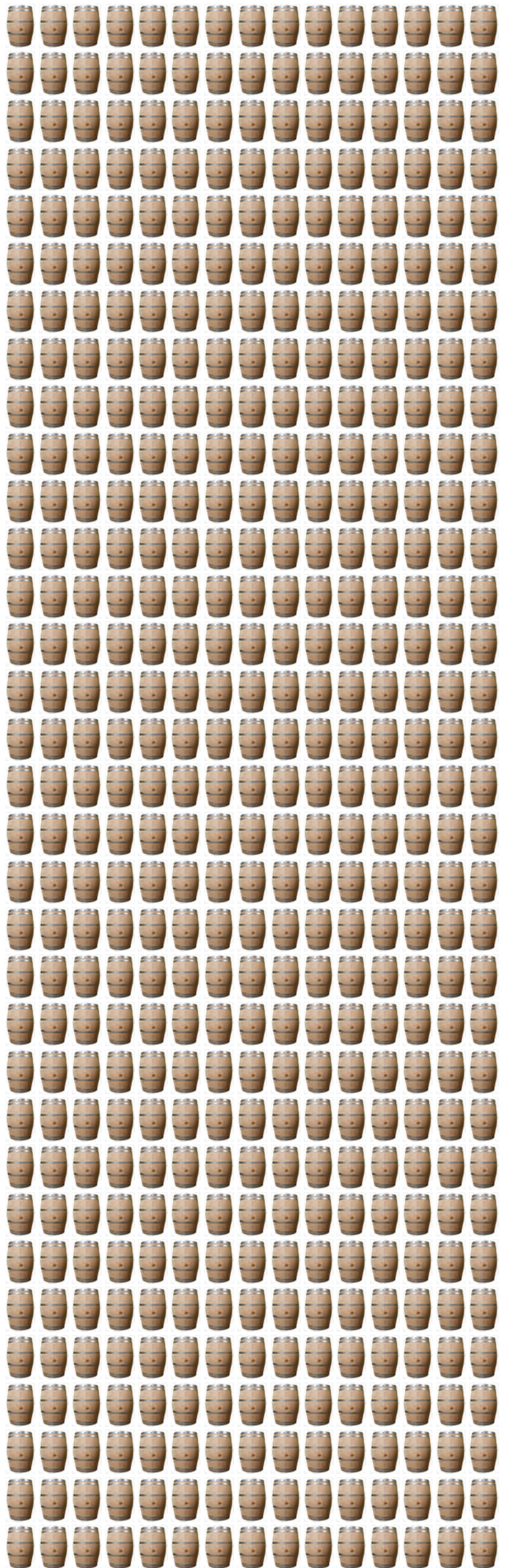
Understanding the Effect of Barrel-to-Barrel Variation on Color and Phenolic Composition of a Red Wine

FIGURE 1: Schematic Representation of the Aging Assay¹





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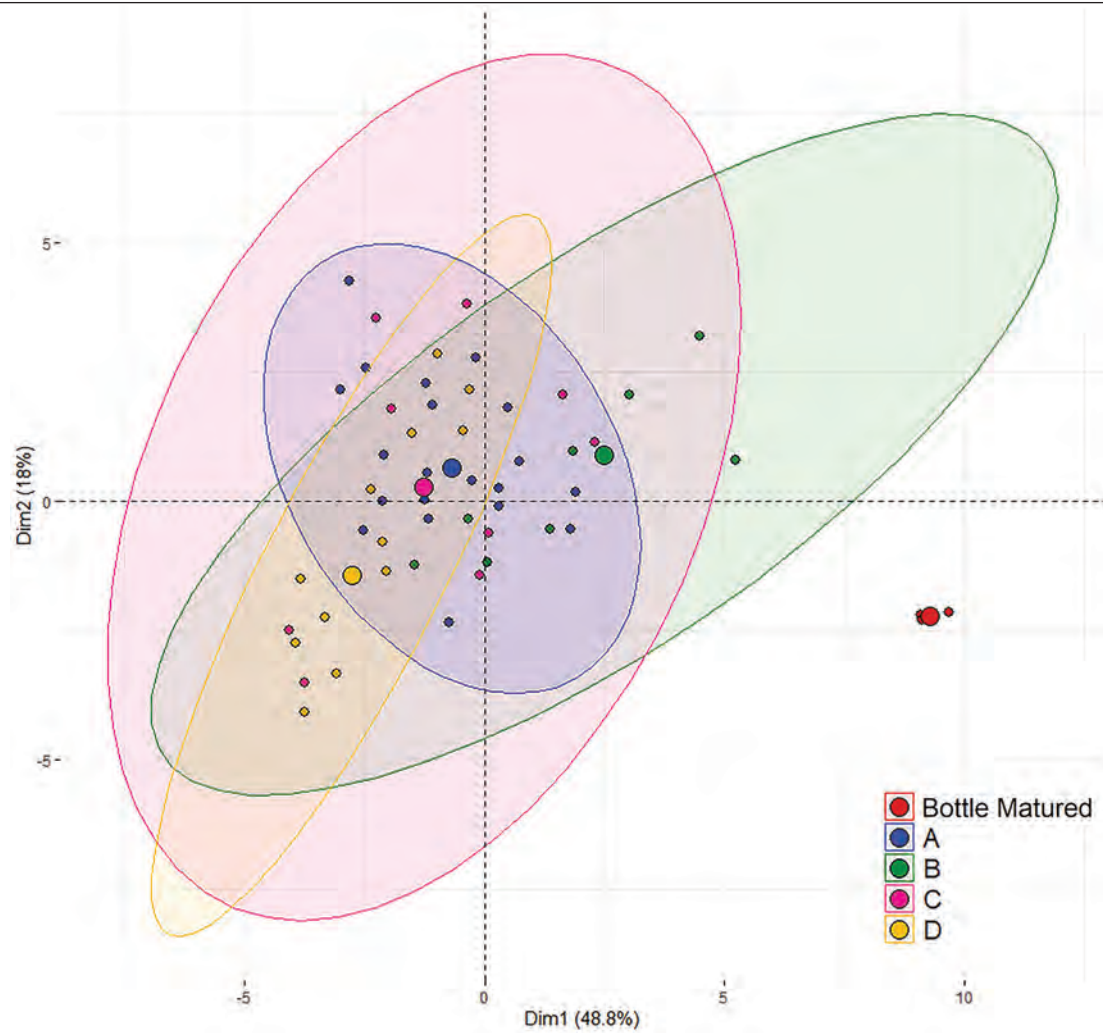




FIGURE 2: Principal Component Analysis performed on wines aged in oak barrels from the cooperages A, B, C and D and bottle-matured wine in a total of 50 wines. The wines are represented in the plane of the two first components which express, respectively, 49 percent and 18 percent of the total variation.



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physical-chemical parameters showed the lowest barrel-to-barrel variation in the trial (always less than 2 percent).

Exceptions were volatile acidity and residual sugar; however, this variation is likely to originate in different microbiological activity and is not necessarily linked to influence of the barrel. It can be concluded that the effect of barrel aging on general characteristics, like density, alcoholic strength or total dry matter, is either small or similar, with less than the individual barrels.²

The same is true for chromatic characteristics to a certain degree. On the other hand, the change from blue to yellow notes was prone to a higher variation, which is likely related to the variation found for anthocyanins. The observed variation for total pigments and polymerization index led to the conclusion that polymerization reactions are probably influenced by the barrel, most likely by a variance in the permeation of oxygen.

In summary, these findings indicate that the effect of barrel-to-barrel variation on chemical parameters of a red wine depends on each specific parameter and is not uniform. Especially anthocyanin content shows high variation between barrels in general and is, to a lesser degree, impacted by a cooperage.¹

Barrel Sample Requirements

Upon analyzing a barrel lot filled with the same initial wine, one can ask, “How many barrels need to be analyzed to get reliable results representative for all the wine in the different barrels if hypothetically racked and joined together in a big tank?”

The characteristics of this hypothetically racked wine from all the barrels is referred to as the “true barrel lot mean.”

Reliable results are a point of discussion as not every situation requires the same exactness of results. More analyses usually translate to increased accuracy but require more resources too. Therefore, in practical circumstances, a compromise is often necessary. To be able to make this decision, it is beneficial to know the link between the analytical parameter in focus, the necessary number of barrel samples and the resulting accuracy of results. The analytical parameter to be analyzed plays a critical role as variation from barrel-to-barrel changes with different parameters, and the greater the variation, the more samples of a batch are needed to determine, in their average, the true barrel lot mean.

To investigate this link, a backwards calculation based on the high number of samples of this trial was conducted. The calculation requires a predefined desired precision for the results, which has been set at 2 percent, 5 percent, 10 percent, 15 percent and 20 percent.¹ For better understanding, a precision of 10 percent, for example, means all results will be inside a range of 5 percent above and 5 percent below the true barrel lot mean.

The results revealed that all phenolic and chromatic characteristics, except for the tannin fractions analysis and anthocyanin-related parameters, which can be analyzed with only two barrel samples per barrel lot at 20 percent accuracy. When increasing the exactness, more analytical parameters require larger sample numbers per barrel lot. At a 10-percent range around the true barrel lot mean, several analytical parameters require more than two barrels per lot, for example, total pigments and polymerization index. At a 5-percent range around the true barrel lot mean, only clarity, tonality and color due to copigmentation, as well as most physical-chemical parameters, can be analyzed with up to two barrels per lot.

General physical-chemical parameters required the smallest samples due to low barrel-to-barrel variation. To achieve reliable results (5 percent around the true barrel lot mean) for the analysis of general wine characteristics and wine color, in most cases between one to three barrels per barrel lot are sufficient. Analytical parameters influenced by wine maturation, such as formation of polymeric pigments, polymerization of phenolics and especially

anthocyanin-related parameters, require more samples per barrel lot; otherwise, a reduction in the accuracy of the results needs to be accepted.

Limits of the Study

This experiment included only new barrels with the same toasting while for barrel lots of different age and toasting levels, a qualified statement cannot be made. The calculated number of barrel samples needed to analyze volatile acidity and residual sugar in a barrel lot should be taken with care because these parameters are influenced not only by the barrel but by many other factors. Therefore, in practical circumstances, analyses of these two parameters might need different barrel sample amounts.

Chemical Parameters Differ in Their Variation

It could be shown that the influence of the individual barrel on barrel-to-barrel variation in wine phenolics and pigments was greater than the influence of the manufacturing cooperage. Chemical parameters analyzed in this study were prone to barrel-to-barrel variation at individual levels, overall ranging from almost 0 up to 37 percent. Especially parameters related to anthocyanins were found to have a high barrel-to-barrel variation.

Barrel-to-barrel variation of a chemical parameter influences the required sample size needed per analyzed batch. Detailed recommendations on the required sample size for certain chemical parameters at different levels of accuracy were calculated and can be used as an aid to generate measurements involving barrel lots. [WBM](#)

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Bryan Avila



Bryan Avila is a formally trained enologist, seasoned commercial winemaker, ACUE-credentialed educator and co-founder of the Vintners Institute. The Vintners Institute brings wine industry producers and allies together, online and in-person, to innovate with nature, educate the workforce and inspire good leaders. A freelance writer for *WBM's* Winemaker Trials, Avila would love to hear what you are doing in your vineyard and winery to overcome challenges, grow better grapes and make better wine. Contact: bryan@vintnersinstitute.com



Principal investigator for UC Davis Agroecology: Dr. Amélie Gaudin, associate professor and endowed chair in agroecology, University of California, Davis

Dr. Amélie Gaudin is an agronomist by training and agroecologist at heart, with expertise in cropping system diversification and root and rhizosphere ecology. The team research goals are to investigate how cropping system management affects the crop and soil mechanisms involved in maintaining or recovering ecosystem services and beneficial synergies along stress and fertility gradients.

ing system management affects the crop and soil mechanisms involved in maintaining or recovering ecosystem services and beneficial synergies along stress and fertility gradients.



Project Lead: Clay Shannon, CEO, proprietor, owner and shepherd, Shannon Ranch, Lake County

Clay Shannon is CEO, proprietor and owner of Shannon Family of Wines and Shannon Ranch in Lake County, California. He is an industry leader in sustainability and in organic and regenerative farming and winemaking with an Earth-first mindset. For almost 40 years, forging a better way has been Clay's approach to business. Shannon Family of Wines produces more

than 300,000 cases of wine and is 100 percent committed to regenerative farming practices. All operations are 100 percent Certified Sustainable, and the Home Ranch is 100 percent Organic Certified CCOF, one of the largest certified organic mountain vineyards in the United States.

THE AIM OF THIS ARTICLE is to highlight an important example of collaboration between industry and academia that will shorten our collective learning curves as we explore new ways to create harmony between natural ecosystems and agricultural systems, including putting carbon back into the soil.

Scientists are keenly aware that basic research can take decades to refine its science into a commercially viable technology so that mass adoption can begin to move the needle to rebuild soil health and sequester carbon. This is an all hands on deck situation. Innovation and collaboration are key to compress this timeline.

While the sheep/viticulture collaboration is not new, Shannon had faith that "sheeping the vineyards" was the best direction to invest time and money into



Researcher: Tommy Fenster, graduate student researcher with UC Davis and the Ecdysis Foundation

Fenster is a Ph.D. student in the Horticulture and Agronomy program at UC Davis. Since 2017, he has been a project lead for the Ecdysis Foundation with his Ph.D. research as a collaboration between the Ecdysis Foundation and the Gaudin Agroecology Lab. His research uses systems-level approaches

to understand how regenerative practices in rangelands, almond orchards and vineyards affect yields, biodiversity and ecosystem services, such as carbon sequestration, water conservation and pest suppression. He is also investing his time as a committee advisor for Contra Costa County's Integrated Pest Management Advisory Committee.

his farming operation. Now, with almost 1,000 acres planted and grazed, and income beginning to pay off on a new range of livestock products, Shannon is seeing the results of his farming and ranching decisions pay off. He is, however, one of the few people willing to buck convention and take this leap. It is hard work, and the business risk of going first is quite high, but investing in soil health is a long-view business strategy that puts its money on nature's biodiversity over formulated products.

The adage, "You can tell who the trailblazers are because they have the most arrows in their back," says a lot about the difficulty of being the first. While Shannon is busy walking the financial versus sustainability tightrope, UC Davis researcher Dr. Amélie Gaudin and her team of agroecologists are documenting these outcomes in collaboration with growers so that the next person does not have to bear the brunt of uncertainties when transitioning.

Using these types of studies, researchers are working to collect data to define new best management practices and disseminate them so that the next venture may navigate this new direction with less risk. One recent example of this communication is "Carbon Sequestration and Soil Health Outcomes in California Integrated Sheep-Vineyard Systems" led by Dr. Kelsey Brewer. This work puts the weight of science behind the faith of the entrepreneur. It is important to note that while livestock and crops have been integrated for more than 10,000 years, these systems supported families and tribes, not BevMo!s and Targets. The integration of livestock and vines on this scale is a new pathway and science is providing the solution.

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TRIAL OBJECTIVE

Tommy Fenster recognized that crop and livestock integration meant vertical integration from a business and carbon perspective, and agroecology can optimize these ecosystems.

“Our goal is to rigorously evaluate the environmental and economic outcomes of ISVS [Integrated Sheep in Vineyard Systems] on commercial vineyards with different management legacies along the conventional-regenerative gradient to inform the development of best management practices,” Fenster said.

The project recently received grant funding from the USDA Western Sustainable Agriculture Research and Education program. The project is a collaboration between multiple vineyards across California, sheep grazing operations, the labs of Dr. Amélie Gaudin, Dr. Brittney Goodrich, and Dr. Elisabeth Forrester of UC Davis, the Ecdysis Foundation, Napa RCD, Community Alliance with Family Farmers, Fibershed, and Paicines Ranch.

TRIAL DESCRIPTION

This survey provides a snapshot comparison of two major vineyard systems: those without grazing, and those in which grazing is performed in the winter and/or summer months. These are expressed simply as non-grazed and grazed.

Grazing provides vegetation removal, light suckering, leaf removal and some manure with trade-offs in additional operational complexity, ensuring that the sheep do not damage the vines or eat the product.

To qualify for this study, a “system” needs to be established, meaning that it will need to have at least three years of management in this system.

Specific research objectives include:

- Establish a participatory research network across California comprised of 45 commercial vineyards with current management legacies along a grazing gradient: non-grazed (NG), integrated sheep vineyard systems (ISVS) with winter grazing (ISVS.WG), and extended winter and summer grazing (ISVS.WSG) (n = 15 per treatment over the three-year study).

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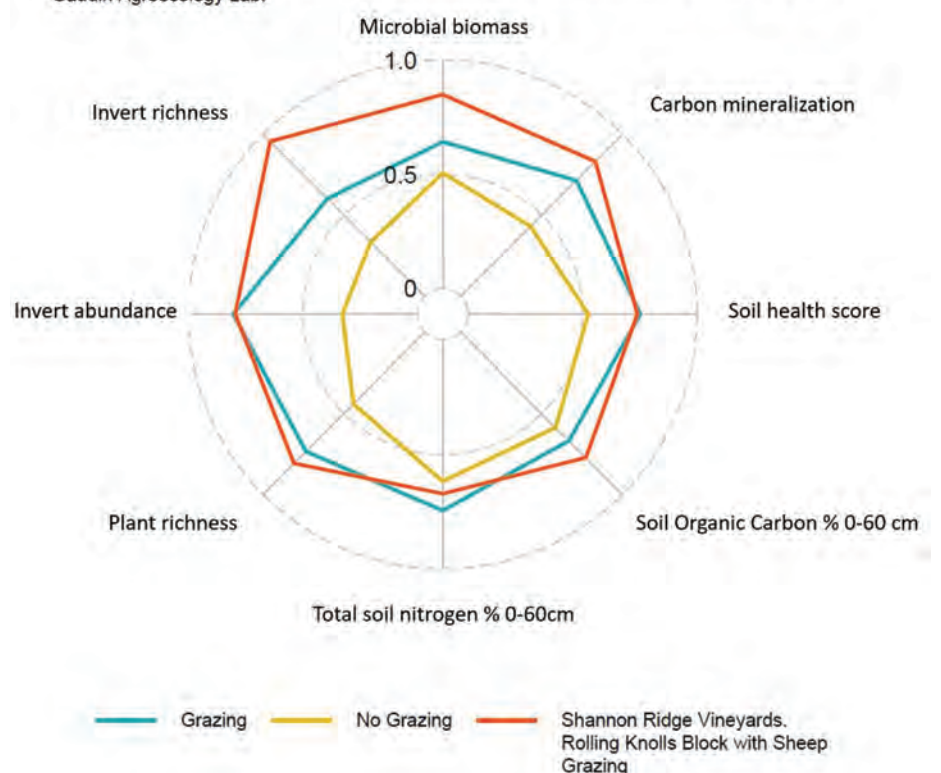
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Fenster et al., 2023, Preliminary 2022 data from the project Sustainability Outcomes of Integrated Sheep Vineyards Systems. Collaboration between the Ecdysis Foundation and the Gaudin Agroecology Lab.



FENSTER ET AL., 2022

FIGURE 2: Ecdysis Foundation and the UC Davis Gaudin Lab This radar plot shows the outcomes of sheep in vineyard systems.

- Measure the impacts of grazing intensities and co-management practices on vineyard soil health, species biodiversity, vine health/nutrition, yield, berry quality, and input and labor use.
- Determine the economic performance of ISVS and conventional viticulture systems.
- Integrate socio-ecological and -economic outcomes to identify the benefits and tradeoffs of grazing vineyard understories and inform the development of best management practices.

Thanks to the Agroecology and Ecdysis Labs, preliminary data have been released with Clay Shannon's data subset split out for comparison to the larger data sets and averages of other grazed and non-grazed sites in the region. While Shannon farmed in a manner that was intuitive to him, the data provided by UC Davis and Ecdysis support his vision.

An additional 30 vineyards will be studied over the course of 2023 and 2024.

TREATMENTS

- Control/No Grazing (Regional Data): Six vineyards without grazing
- Treatment/Grazing (Regional Data): Mixed grazing data set containing four vineyards with winter-only grazing and five vineyards with both winter and summer grazing
- Treatment/Grazing (Site-Specific Data): Shannon Ranch Rolling Knolls Block (winter and summer grazing)

MEASUREMENTS USED

The soil health measurements employed to determine the relative performance of grazing are listed in the table below, along with their significance:

Measurement	Significance
Microbial biomass	A measure of microbes in the soil, including bacteria, fungi and protozoa
Carbon mineralization	Higher levels of soil mineralization indicate healthier soil
Haney Soil health score	Calculation based on carbon mineralization, water-extractable carbon and nitrogen content used to compare sites
Soil organic carbon percentage: 0-60%	A measure of soil organic matter
Total soil nitrogen	Indicates soil fertility
Plant richness	A measure of plant species observed
Invert abundance	A measure of the number of invertebrates found in the soil, such as worms, mites and insects
Invert richness	A measure of the variety of invertebrate species

FIGURE 1: Soil health measurements and their significance

CONCLUSIONS

This preliminary report represents data collected across a comparative sampling of neighboring participating vineyards relative to whether they were engaged in grazing or not. It also demonstrates how the Shannon Ranch site compares to the regional data sets. Measurements were taken in 2022 between March and September and presented, as a radar plot, to best show how these farming systems compared. The average results were normalized and scaled for comparison.

This spider plot shows a trend which indicates that a grazed vineyard will support a significantly greater quantity and biodiversity of plants, microbes,

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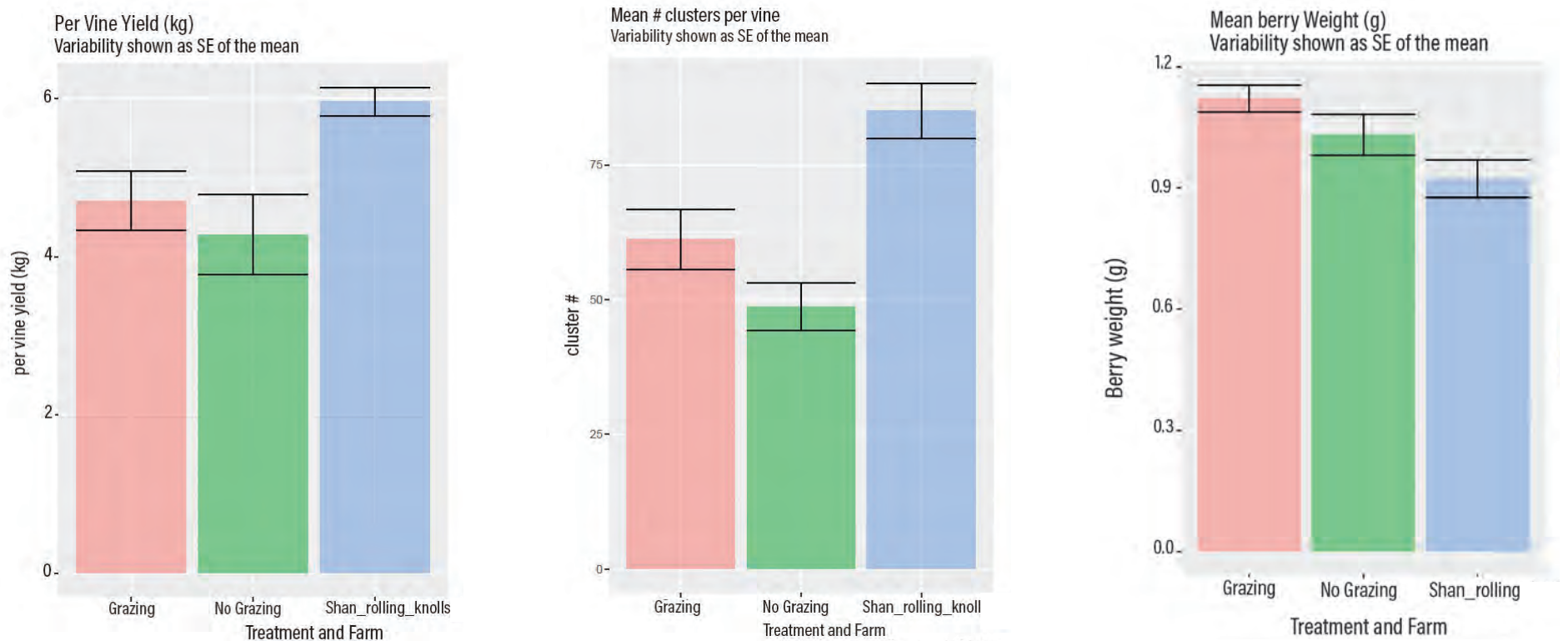


FIGURE 3: Grazed vineyard appeared to have higher yield per vine, as well as more, smaller clusters and smaller berries. While wine quality data are not provided in this study, most red winemakers will agree that smaller berries are a good start.

FENSTER ET AL., 2022

and invertebrates. These vineyards also appear to have higher rates of carbon mineralization, as well as soil organic carbon and nitrogen percentages, suggesting that the more robust biology in these vineyards leads to overall healthier and better functioning soils. Elevated quantity and types of worms, plants and microbe species work together to break down organic matter into

usable, active forms of carbon, nitrogen and micronutrients. The conventional numbers don't compare.

The preliminary data shared in this study show that ecosystem services enhanced, through grazing, can be well worth the investment, even in a large vineyard system. This study shows that integrating grazing practices in the vineyard is not only feasible, it can help provide diversity, not only in soil health benefits but also cash flow streams. Shannon admitted that sheeping is not a silver bullet: No two sites are the same, and sometimes sheeping just may not work in a particular vineyard block.

CLAY SHANNON'S CONCLUSIONS FROM PROJECT OVIS

"When I first started growing grapes, I worked at Sutter Home Winery as a vineyard manager. I had always wanted my own ranch so that I could farm and live the way that I wanted to. While growing up on the Sonoma Coast, my family worked for the timber industry and raised Corriedale sheep for wool. Lanolin and sheep manure were the smells of my childhood, so I looked forward to an opportunity to have some sheep of my own. Once I started my own ranch, I began sharing sheep with Dennis Pluth and eventually got into running my own after purchasing 15 sheep; this is when I learned that there's a balance between grass and slaughter.

"Initially, I only allowed them into the non-crop areas for weed control until one day someone left the gate open and, lo-and-behold, the sheep stripped all the basal leaves and all the vine weeds. We began to experiment more in the vineyard. Now we have two crops: grapes and lambs. After all, why not? You have all these fixed costs, and now I have new revenue streams from livestock.

"The Benefits of Integrating Sheep:

- Multiple cash flows keep income diversified.
- Sheep replace a large portion of herbicides and fertilizer.
- Weed control means free food for the sheep.
- Sheep manure brings more ecological diversity to the soil.
- Sheep fast-track the cover crop into the nitrogen cycle beyond it being organic matter.
- Wool is a renewable resource.
- The outcome of this system is organically farmed grapes.

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FIGURE 4: Photo A: Weed control via a recently “sheeped” vineyard. Photo B: Fertilizer. Photo C: Light integration of manure into soil via hooves. Photo D: Evidence of invertebrates in one random shovelful.

“At any one time, I have about 800 head of breeding ewes and run roughly 1,100 head of sheep per year. As of January, I have about 500 sheep that I’ve recently purchased, which means that I will be able to harvest 500 more mature lambs for meat. Of course, it creates challenges as well; nothing good comes easy. Do we still have acreage that is conventionally farmed? Yes, but little by little we expand our sheeping operation. On the cost side of the equation, we still buy fertilizer but not nearly as much.

“In fact, I buy my fertilizer from a guy that is doing a similar thing, just with chickens. Chicken manure is a perfect complement because it’s high in nitrogen, phosphorous and calcium, which is exactly what I need farming grapes in the volcanic mountains of Lake County. It’s half the price of other fertilizers, and it’s organic.”



FIGURE 5: A 400-head sheeping unit in vineyard block.

Research Post-Mortem

Why did you decide to integrate sheep into your vineyard?

Shannon: From a business perspective, the vertical integration is hard to beat. These animals can provide incredible winter weed control under the vine. They can thin out suckers and leaves in the lower canopy during which time they are dropping and stamping in about five pounds of manure per animal per day. This greatly accelerates the transformation of organic matter from the ground cover into manure, resulting in a microbially-rich soil that can further break down nutrients.

Additionally, as the sheep eat, they poop in the vineyard, increasing the fertility of the soil which encourages growth. More growth means more food and protein for the sheep to make milk for the lambs.

Which came first: the grapes or the sheep?

Shannon: Grapes. I initially bought land and started a vineyard and farmed it conventionally because it was easy and cheap. I started farming grapes between 1985 to 1993. About 20 years ago, I bought my first sheep and began experimenting with them: this marked the beginning of Project Ovis.

It has been said that integrating sheep in the vineyard cannot be profitable on any significant scale. Has that been your experience as well?

Shannon: We have about 1,000 acres of vineyard, and we have 800 ewes that produce about 1,100 lambs. At \$250 per lamb that puts us at about \$250,000 in revenue. In addition to selling lambs, we also sell the wool from the sheep which, in total, yields about \$412,000 for the year—not too shabby when you consider that our cost to keep sheep was about \$150,000 last year. That doesn’t even account for what I’m saving on fertilizers and herbicides in the vineyard.

In fact, I have reduced my herbicide usage on the grape side of the business by \$100,000, and that number keeps going up the more we learn.

Rootstocks and clones make all the difference when developing a vineyard. Likewise, is there a specific type of sheep that you prefer?

Shannon: I prefer Corriedale because their wool is in the medium range of coarseness. If the wool is too fine, they don’t do too well in the rain due to wool rot. Wool rot is just nasty. If you have a dryer location, you may be able to get away with a fine wool sheep breed, like the Merino, Rambouillet or Columbia. The Corriedales also have a hard hoof which resists rot in wet or muddy soils. Some breeds that have softer hooves can splinter and get funky.

Where does one find a decent shepherd these days?

Shannon: Basically, we train our own. It’s hard to find vineyard personnel that are open to doing something a different way. It’s easier to turn on the sprayer than to run the sheep. Most people are simply too lazy to run sheep. It’s a lot of moving parts. Frankly, this is how we all have to start working if we are going to take better care of our planet.

Can this advantage pencil out as an investment?

Shannon: Well, the wine program is up to about 300,000 cases per year now, and the sheep operation just made us a nice little profit this year. Most importantly, it’s a lifestyle thing. We set out to build a fully regenerative farming system, and we are mostly there, and maintaining business sustainability helps us stay in the game long term. It’s not about being extreme in this approach but rather to make small incremental improvements over time. Sure, we still have some acreage that is farmed conventionally, but little by little, we are finding better ways to work with nature rather than against it.

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What advice would you give to a grower that is considering implementing a grazing program?

Shannon: I'd say shut off the herbicides and hire a grazer. We did grazing when we were conventionally-farmed just to clean up the summer weeds, especially since spraying herbicides, during the drought, wasn't working—the weeds just get harder to kill. It's also good to recognize that grazing doesn't work everywhere, and you have to be OK with the smell of sheep dung. You also must have tolerance for a livestock business. There are no holidays, and someone's always got to be on watch.

How have sheep impacted your mowing, tilling and herbicide application?

Shannon: We have pretty much eliminated herbicides. Mowing has been reduced by about 80 percent. We are largely a no-till operation, except during drought.

How many sheep do you need per vineyard acre to do the job? How do you know when to move the sheep?

Shannon: In my experience, you need about 1.2 ewes per acre. At roughly 1,000 acres, we generally have about 1,200 sheep organized in roughly 400-sheep grazing units. What's interesting is that sheep in one grazing unit are like a family. They know when there is an outsider in their midst.

What is High Density Short Time Grazing and why is it important?

Shannon: We call it mob grazing, but essentially, we bring a big group of sheep to a vineyard block that has had some time to grow some vegetation, and they basically take a bite before moving on to more easy-to-eat grass. They really clean things up quickly; so, if you leave them there too long, there is more opportunity for them to eat things they aren't supposed to. Plus, it takes the grass longer to grow back when it has been eaten down to the nubs.

Our atmospheric river just stopped four days before this interview (Jan. 19, 2023). How did your vineyard fare regarding erosion?

Shannon: We did not have any erosion in the vineyards. Maybe a couple of the roads but the vineyards held up great. I was in Carneros on Tuesday, and there were some serious trenches out there. I think that all the grass, roots and biological activity in the soil gave the water somewhere to go. **WBM**

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Switching to Lighter Bottles: The Beneficial Domino Effect for Wineries

Michael S. Lasky

BEGINNING IN MARCH 2020, many wineries were compelled to make the switch to lighter-weight bottles when the heavier glass they previously used was no longer available due to pandemic-fueled manufacturing slow-downs and shipping constraints. While some may have felt that consumer quality perceptions were compromised, the resulting cost savings were a thrifty trade-off—and a significant notch toward reaching sustainability goals.

Although glass production has mostly returned to its pre-pandemic level, the ecologically conscious wine industry has nevertheless expanded its use of lighter glass bottles in place of heavier ones.

Jason Haas, general manager of Tablas Creek Vineyard in Paso Robles, said lightweight glass has several advantages.

“It takes fewer raw materials and less energy to make, it weighs less empty and full, so cases require less fuel to transport, and you can fit more pallets on a truck before you reach the truck’s weight limit. It also makes bottles that are easier to pour and fit better in most people’s wine racks,” Haas said.

The Wine Bottle Diet: Everybody Gains with Reduced Weight Glass

Wine Business Monthly canvassed wineries to find out how, why, and when they are incorporating lighter bottles into their portfolios, as well as the pros and cons of doing so.

More than a decade ago, Honig Vineyard and Winery in Napa Valley decided to switch to lightweight glass as part of its sustainability practice.

“We decided back then to leave a small carbon footprint, as well as be a profitable business. It was an obvious choice,” said Stephanie Honig, the winery’s director of export and communications. “The cost of the glass is lower, and we have never had any pushback by our wholesale or retail customers. The ‘lightweight’ bottle still has a punt and a good look and feel. We did benefit from decreased shipping costs for our retail customers due the fewer pounds per shipment.”

She added that Honig’s initial savings, upon switching to the lighter-weight bottles, was about 10 percent, yet savings from the switch have been cannibalized by the more recent increases in shipping prices.

Even with the higher price to ship, Honig has also been able to be more efficient with her trucks, offsetting some of the additional costs. For instance, the winery’s Sauvignon Blanc previously shipped on traditional 56-case pallets; but when it switched to lighter-weight glass, the configuration was modified to fill a 60-case pallet. Therefore, the winery can ship 7 percent more product on each truck that travels from the winery to the warehouse and store 7 percent more in the same warehouse space.

Honig noted that because distributors and wholesale customers like to ship full pallets, another benefit is that the winery can ship them four additional cases on each order, increasing revenue.

Another incentive for using lighter-weight bottles is consumer acceptance. In fact, virtually every winery WBM contacted reported only positive feedback from customers who seem to be more concerned about what’s in the bottle rather than the vessel itself.

Crimson Wine Group also put its glass bottles on a diet. The company, which owns seven wineries across California, Oregon and Washington, reported that in the three or so years since it transitioned all winery brands to lighter-weight domestic glass, it has been able to reduce its carbon footprint by 300 tons annually, as well as lower costs.

Fintan du Fresne, general manager at Phase 2 Cellars and the former winemaker at Crimson’s Chamisal Vineyards, assumed, like most others in the wine industry, that reducing weight in premium-priced bottles would be met with consumer resistance. Instead, he observed, “Even at the highest levels of wine price, there’s been zero pushback.”

Another early adopter of sustainability, Tablas Creek Vineyard in Paso Robles switched its entire portfolio to lighter-weight bottles about 15 years ago and realized the immediate monetary and environmental payback this policy has generated.

When WBM asked Haas, a veteran cheerleader of the lighter glass movement, how much the winery saved by switching to lightweight glass, he was gobsmacked by the results he found in his deep dive on the subject.

Tablas Creek Vineyard has saved more than \$2 million in 14 years by making the change to lighter-weight bottles. Haas also discovered that shipping wine was the single largest expense after payroll.

“That extra weight came with costs at every stage,” Haas said. “We had to pay more to have it manufactured, shipped to us, and then either trucked away for wholesale sales or sent via UPS or FedEx individually to our direct customers. We needed larger wine racks to fit the wines in our library, which means we could store fewer bottles per square foot of space.”

The trucking company the winery uses can now fit three more pallets of Tablas Creek’s flagship wines—22 pallets instead of 19—before reaching the legal weight limit. For the roughly 40 percent of this wine sold via wholesale, Haas had to run roughly one fewer full truck each year up to the Vineyard Brands warehouse in American Canyon.

Fortunately, the lay public has begun to appreciate lightweight glass.

“Many consumers still can be fooled by glass weight. When somebody picks up a wine bottle, they might easily think the wine inside is better and worth more because the container’s comparative heaviness imparts luxury,” Haas explained. “But I think the perception of that is changing. I’ve been really encouraged by wine writer Jancis Robinson now putting bottle weights on all her reviews and calling out wines that are in really heavy bottles. I think that’s a really important step in the wine review world.”



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He believes that as the public starts to pay attention to the product's carbon footprint, they will favor lower-weight wine bottles over the aesthetic appeal of heavy bottles.

Haas also noted that as organizations, like the International Wineries for Climate Action, gain more ground in the industry, more wineries will realize that these heavy bottles are a relic.

"They're one of the things that have got to go if we are serious about the reality of climate change," Haas said.

Talk to Your Glass Provider: The Win-Win Step

One of the mantras at Jackson Family Wines is that "you can't manage what you don't measure," so it follows that when the company—comprised of some 40 wineries—calculated its carbon footprint in 2015, it learned that a big portion of its carbon emissions was coming from packaging.

"Approximately 25 to 30 percent of our carbon emissions' footprint comes from packaging, specifically our glass bottles," said Sean Carroll, the company's director of communications for social impact and environmental sustainability. "So we started to proactively work with our glass suppliers to update our bottle molds and reduce the weight of our four highest volume bottles, including our Kendall-Jackson Vintners Reserve Chardonnay, which has been the No. 1 Chardonnay in America for close to 40 years now. We also started working with our glass suppliers to use more recycled material in our glass, which now accounts for 55 percent of the glass we use."

Carroll said that moving to lighter-weight bottles saves Jackson Family Wines approximately \$1 million annually in materials costs and close to \$500,000 a year in fuel costs.

Given this success, the company is now evaluating and identifying other brands that can make the switch.

Bogle Family Wine Collection is the 13th largest wine company in the U.S. with 2.7 million cases sold in 2022, and it too has been talking with its glass supplier about reducing the weight of its bottles.

Ryan Bogle, vice president and chief financial officer of the Clarksburg, Calif. winery, told *WBM* that the winery is halfway through its glass initiative—with about half of its bottles now in lighter-weight bottles.

"This year we're going through current inventory on some of the bottles, and then we're working with our supplier, Encore Glass, on finalizing some molds on some other lines," Bogle explained.

At publication time, Bogle is waiting on a finalized design for the lightweight glass molds, which have a premium look and will cut weight by 10 percent, from 550 grams to 500 grams.

"We're seeing some cost savings on the glass. With prices increasing on pretty much everything, it's probably helping us just keep up with inflation on pricing anyways," Bogle said. "In the long run, we'll probably be about flat, but for us it was more about looking at the overall environmental impact on that glass and just the way to reduce that carbon footprint."

Although the lighter glass bottles will allow Bogle to stack pallets four high and be more efficient with storage space, the team continues to stack three pallets high, "just for safety." **WBM**



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Trends and Traditions

How One New York Wine Director Builds Well-Rounded Wine Programs

Emily Johnston Collins

Emily Johnston Collins is a contributing editor at *The SOMM Journal*.



Dave Lofstrom

DAVE LOFSTROM HAS FOUND his niche in building and revamping wine programs for luxury companies. Since 2020, he has helped develop the programs at WS New York, Wine Spectator's now-closed private club and restaurant in New York City; Brush Creek Ranch in Wyoming, a working wagyu ranch with a lodge, spa, dining, and an extensive wine cellar; and Restoration Hardware's new RH Guesthouse also in New York City, which houses a fine-dining restaurant and an upcoming Champagne and caviar bar. While Lofstrom stays abreast of trends, he isn't unduly influenced by them when it comes to making wine selections. More important to him is designing a program that meets both the desires of the guests and the needs of the restaurant.

For instance, he raises an eyebrow at wine programs that give the impression that the head chef and wine director have never spoken. This makes it hard for a restaurant to live up to guests' expectations for a cohesive experience. At RH Guesthouse, Lofstrom built a program in keeping with the boutique hotel's driving theme, quality. To him, this meant looking to the classic regions of the Old World, which "are classics for a reason," he says. But he also turns to quality-driven New World regions like Napa Valley, Oregon, and Australia's Margaret River. When he was working for the WS club, these were particularly integral to the list given Wine Spectator's famed affinity for New World wines.

On the floor, Lofstrom aims to put guests at ease. He takes note when guests open conversations with self-doubting phrases like, "I usually drink Malbec. Is that OK?" To reduce their anxiety, he seeks to offer selections that

are recognizable and popular. On any given night, Lofstrom says at least four guests will ask about Chablis, so he makes sure to have Chablis on the list.

Additionally, he says, "Sancerre is a big category in New York. Gotta have it!"

And there isn't a program he runs that doesn't include Bordeaux, "Even people who know little about wine have heard the name Bordeaux."

Lofstrom jokes that his affinity for Bordeaux makes him the least cool wine director in New York. He said there is a strong trend among the younger generation of New York sommeliers to avoid the region, or at least its best-known châteaux, as they seem to view it as having little diversity. But Lofstrom, a student of the Wine & Spirit Education Trust Master of Wine program, believes it to be incredibly nuanced, adding that the top châteaux are proven representatives of this. He also makes a good case for changing the perception that Bordeaux is outdated by pointing out that it is at the cutting edge of innovations in the face of global climate change.

In making his argument for the benchmark producers of Bordeaux, Lofstrom reflects on the business side of running a wine program.

"Don't put a barrier in front of a guest who wants to spend money," he said, meaning that by replacing a well-known Bordeaux château with an up-and-coming and cheaper producer, you're automatically preventing a higher sale. But your high-end wines still need to be within reach of most of the clientele. Lofstrom points out that storage is a common challenge for restaurants in New York City. To manage it, he needs to know that a given wine on the list will turn over relatively fast. Perhaps, then, Pétrus—back vintages of which can reach five-digit prices, according to a quick search of the city's notable lists—is better off skipped. In fact, Lofstrom is seeking more second wines from top châteaux as Bordeaux prices continue to rise.

Related to rising prices, availability has become a challenge in recent years due to the COVID-19 pandemic and various weather disasters. Among the wines that have plummeted in inventory are Sancerre and Champagne; two core regions for Lofstrom's program at RH Guesthouse. To maintain consistent availability, Lofstrom relies on his knowledge of current events in the wine world; he approached his bosses about investing in extra stock of Sancerre before the shortage hit. All that said, he is among the many wine directors who work to establish interest in satellite appellations and to give voice to up-and-coming regions, especially those with available wine to sell.

Lofstrom also pays attention to how the world perceives wine, as evidenced by his habit of asking friends outside the wine industry to check his wine offerings for approachability. Because of this, he has picked up on a new trend across the U.S., an increased interest in stemware. As anyone who has ever broken a costly yet fragile Zalto glass knows, this is another example of a beverage director's need to invest in the guest experience while still making sound financial decisions. **WBM**

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PACK DESIGN SHOWCASE

Small Format Sparklers By a Trio of Sisters

Andrew Adams

Breathless

Healdsburg, Calif.

www.breathlesswines.com

Annual case production: 3,000

Average bottle price: \$29

Designer: 4Parts Design

Bottles: Saxco International

Bottle Manufacturer: Verallia

Closures: Scott Laboratories

Capsules: Scott Laboratories

Labels: Mepco Label Systems

RECENT INCREASES IN SALES of domestic sparkling wine as well as the number of U.S. wineries producing bubbles has been driven by a corresponding increase in the number of facilities with the equipment and knowledge to produce such wines. One of the leading custom-crush wineries supporting the growth of domestic sparkling wine has been Rack & Riddle winery in Sonoma County.

Founded in 2007 by partners and wine industry veterans Bruce Lundquist and Rebecca Faust, the winery produces around 2.2 million cases a year. Shortly after opening Rack & Riddle, Faust went on to launch the Breathless Wine brand with her two sisters Cynthia Faust and Sharon Cohn. Winemaker Penny Gadd-Coster, who has worked with Rebecca Faust at Rack & Riddle since 2007, oversees winemaking for Breathless.

Key to Rack & Riddle's success has been its ability to produce sparkling wines via méthode champenoise, and Breathless is also committed to this method.

Rebecca Faust remains part of the executive team at Rack & Riddle where Cynthia Faust is the manager of business development. Sharon Cohn, a U.S. Air Force veteran, now handles sales for Breathless as the brand's "glitz, glamour and panache" on the road. In addition to being a joint venture for the three sisters, the brand is also a memorial to their mother Martha.

Sharon Faust (or "Sister 1 of 3") said the design for the smaller bottles was an extension of the brand's commitment to the style of the 1920s.

"We wanted to design a fun bottle in keeping with that theme," she said. "We also realize opening a full bottle of sparkling wine can be a bit much for one, or even two people, so we wanted to provide options."

Designed by Hayley McAfee at 4Parts Design, the labels for the 375ml bottles are full shrink wraps in black and gold for the Brut Rosé and blue and gold for the brut.

"From a design standpoint, the wrap-around or full panel aspect was key," McAfee said in an email. "Being able to design across the whole canvas of the bottle versus the usual couple of inches on a standard label panel—especially on the smaller 375ml gave us the opportunity to express the brand in a pretty unique way."

Entered into the series category of the 2022 contest, the packaging was praised for its cohesiveness and eye-catching design.

"These wraps really do pop and are appropriate for a celebratory beverage," one judge noted.

Sharon Faust said she and the rest of the Breathless team continue to evaluate cans, yet they remain concerned about shelf life.

In addition to sparkling wine, Breathless also produces a still Pinot Noir and Chardonnay under screwcap as well as a Chardonnay blended with Pinot Gris and fortified with Eau de Vie. The Ratafia fortified wine is bottled in a square

shouldered, clear bottle with a glass bar top closure. Sharon Faust added that they have a new project in the works, but they're not yet sure what the packaging will be like.

"We guarantee it will be fun," Sharon Faust said.



WBM

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in 2030

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in 2050
for **scope 1&2 CO2**
emissions

* Validated by
Science Based Targets for scope
1&2 (in absolute value)

Eco1 Conica Baja
Height (mm/in) 298 / 11.73
Weight (g/oz) 430 / 15.16
Diameter (mm/in) 79.6 / 3.11



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Retail Sales Analysis

Retail Wine Sales Decline 5 Percent in February

Wines Vines Analytics

Produced by **Wines Vines Analytics**, the *Wine Analytics Report* is the industry's leading source of market insights, objective analysis and data.

SALES VALUE DOWN 5 PERCENT IN FEBRUARY

Off-premise table wine sales fell 5 percent versus a year ago to \$1.2 billion in the four weeks ended Feb. 25, NielsenIQ scan data showed. Sales of box wines increased 1 percent across all price tiers to \$125.4 million in the period while wines in glass packaging fell 6 percent to more than \$1 billion. All price tiers sold in glass declined, led by a 10 percent drop in wines priced \$25 a bottle and more. Sales in the latest 52 weeks approached \$15.8 billion, down 3 percent from last year. Box wines and those in glass packaging between \$15-\$19.99 a bottle saw the strongest growth, rising nearly 2 percent versus last year. Wines priced \$25 a bottle and up saw the strongest decrease, with sales down nearly 7 percent.

SALES VOLUME DOWN 8 PERCENT IN FEBRUARY

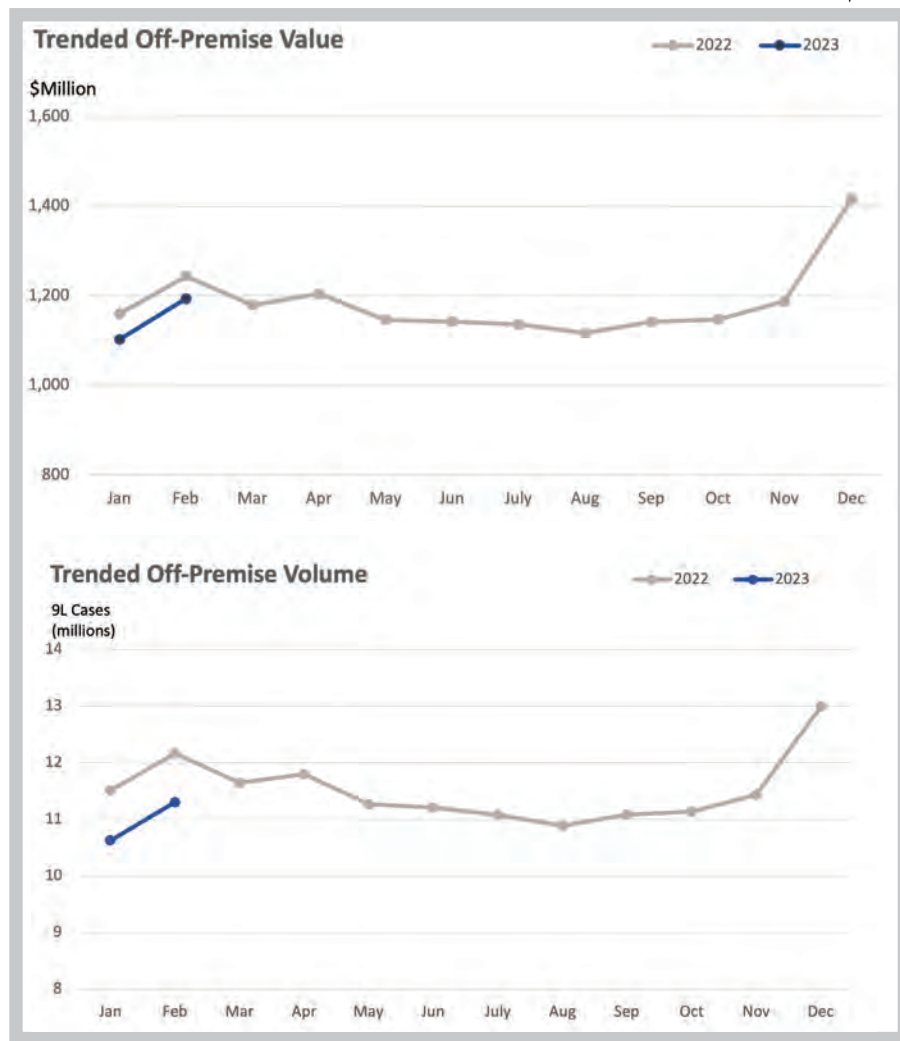
Off-premise table wine sales volume fell nearly 8 percent versus a year ago in the four weeks ended Feb. 25 to 11.3 million 9L cases. All price segments recorded declines versus a year ago. Wines priced \$25 and up saw volumes decline more than 14 percent, while segments priced below \$11 a bottle fell by an average of 11 percent. The latest 52 weeks saw volumes decline nearly 6 percent to 150.7 million 9L cases. Box wines priced \$4-plus per 750ml bucked the overall downward trend, posting a 2 percent increase in volume. Similar to the latest four weeks, segments below \$11 a bottle and \$25-plus saw the steepest declines in volume.

BOXES FOR VALUE, GLASS FOR LUXURY

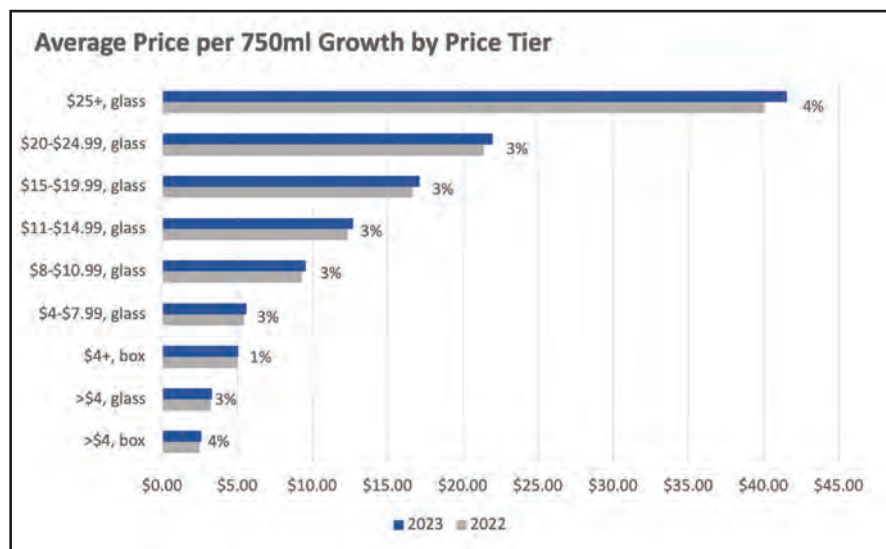
Strong sales of box wines in the latest four weeks have made barely a dent in the commanding share of off-premise sales wine in glass holds. Glass packaging accounts for 88 percent of off-premise sales through the outlets NielsenIQ tracks. The sales growth of box wines with an average price of \$3.81 per 750 ml in the latest 52 weeks—or 63 percent less than the average price of \$10.28 for wines in glass—suggest it is being driven primarily by value.

Delving further into per-bottle pricing data uncovers an interesting dynamic. While all price tiers saw average bottle price increase in the latest 52 weeks, the strongest growth was seen in two diametrically opposed price tiers — box wines less than \$4 per 750ml and \$25-plus wines in glass, which have both seen weaker sales than all other wines in the same packaging categories. But when it comes to average price, both posted gains of 4 percent in the latest 52 weeks. This indicates sufficient sales momentum for wines in the price segments for purchases to lift prices faster than in other segments.

The most affordable box wines increased 11 cents to average \$2.59 per 750ml in the latest 52 weeks on flat growth. Similarly, \$25-plus wines in glass saw average price increase by \$1.49 to \$41.55 a bottle even as sales fell 7 percent. While fewer of these most expensive wines sold through NielsenIQ outlets during the period, what's going into those bottles is increasingly more expensive than what value-minded consumers are buying in boxes. **WBM**



Source: NielsenIQ Latest 4 weeks—ended Feb. 25




Source: NielsenIQ Latest 52 weeks—ended Feb. 25

Methodology

Sourced from NielsenIQ, these figures represent off-premise retailer wine sales to the consumer aggregated across a variety of channels nationwide, including grocery, drug, mass merchandisers, convenience, dollar, military, as well as a selection of warehouse clubs, and liquor channel geographies and liquor channel retail chains. NielsenIQ figures are updated and released every four weeks.

NielsenIQ Table Wine Category Segments MARKET: Total US xAOC+Conv+Military+Liquor Plus PERIOD: 4 Weeks Ended Feb. 25, 2023

		Dollar Value				9L Equivalent Volume				Avg Equivalent Price Per 750ML	
		Latest 52 Wks - W/E 02/25/23	Latest 4 Wks - W/E 02/25/23	Latest 52 Wks - W/E 02/25/23	Latest 4 Wks - W/E 02/25/23	Latest 52 Wks - W/E 02/25/23	Latest 4 Wks - W/E 02/25/23	Latest 52 Wks - W/E 02/25/23	Latest 4 Wks - W/E 02/25/23	Latest 52 Wks - W/E 02/25/23	Latest 4 Wks - W/E 02/25/23
TOTAL TABLE WINE		15,767,514,985	1,193,525,626	-2.9	-5.1	150,698,772	11,303,018	-5.7	-7.8	8.72	8.80
PRICE TIERS BY CONTAINERS	BOX	1,601,220,400	125,394,849	1.6	1.0	35,066,755	2,694,654	-1.5	-2.7	3.81	3.88
	\$0-\$3.99	554,890,504	43,544,078	-0.3	0.4	17,828,357	1,365,543	-4.5	-4.2	2.59	2.66
	\$4+	1,046,313,101	81,842,778	2.7	1.3	17,238,073	1,328,955	1.9	-1.2	5.06	5.13
	Total Table Wine Glass	13,842,793,339	1,044,187,895	-3.3	-5.9	112,178,188	8,355,331	-6.9	-9.4	10.28	10.41
	Value Glass \$0-\$3.99	333,259,640	25,899,375	-6.2	-4.7	8,373,805	617,356	-9.0	-11.0	3.32	3.50
	Popular Glass \$4-\$7.99	2,603,154,625	197,081,766	-5.6	-7.1	38,703,492	2,895,783	-8.7	-10.5	5.61	5.67
	Premium Glass \$8-\$10.99	2,734,814,764	205,947,214	-5.5	-8.4	23,868,587	1,761,377	-8.0	-11.8	9.55	9.74
	Super Premium Glass \$11-\$14.99	3,774,246,796	285,566,336	-2.1	-4.4	24,813,412	1,857,569	-4.7	-6.8	12.68	12.81
	Ultra Premium Glass \$15-\$19.99	2,111,396,342	160,340,095	1.5	-1.5	10,275,244	771,263	-1.2	-3.3	17.12	17.32
Luxury Glass \$20-\$24.99	865,286,451	63,048,492	0.0	-6.1	3,281,091	235,054	-2.7	-9.3	21.98	22.35	
Super Luxury Glass \$25+	1,411,181,168	103,964,422	-6.7	-10.5	2,830,527	206,172	-10.1	-14.4	41.55	42.02	
IMPORTED	IMPORTED	4,335,635,813	320,779,489	-3.4	-6.2	40,191,873	2,981,167	-6.1	-8.9	8.99	8.97
	ITALY	1,403,244,819	105,878,797	-4.7	-8.9	10,815,412	804,920	-7.5	-12.2	10.81	10.96
	AUSTRALIA	620,941,112	48,579,057	-7.3	-7.0	9,765,488	752,888	-8.9	-8.7	5.30	5.38
	FRANCE	624,661,007	40,398,597	-3.6	-6.7	3,274,087	207,884	-6.8	-9.0	15.90	16.19
	CHILE	366,223,050	28,299,178	-0.5	-4.1	6,251,637	479,092	-1.1	-5.9	4.88	4.92
	SPAIN	158,278,572	12,036,262	-1.1	-5.7	1,114,949	85,741	-2.1	-4.8	11.83	11.70
	GERMANY	74,585,300	5,131,441	-4.2	-10.1	611,158	41,546	-5.5	-11.7	10.17	10.29
	NEW ZEALAND	667,122,949	48,306,338	3.4	1.7	4,408,381	312,069	-0.7	-2.4	12.61	12.90
	ARGENTINA	303,227,049	24,175,740	-7.2	-7.1	3,029,395	235,800	-10.6	-12.3	8.34	8.54
	SOUTH AFRICA	25,512,207	1,808,152	-3.3	-9.3	214,843	15,435	-1.7	-6.4	9.90	9.76
PORTUGAL	50,937,398	3,346,058	-0.4	-4.9	475,825	30,361	-5.0	-9.2	8.92	9.18	
DOMESTIC	DOMESTIC	11,431,879,173	872,746,137	-2.7	-4.7	110,506,899	8,321,850	-5.6	-7.4	8.62	8.74
	CALIFORNIA	10,296,920,620	791,303,637	-2.3	-4.2	101,945,113	7,724,609	-5.4	-7.0	8.42	8.54
	WASHINGTON	554,657,193	39,764,449	-8.2	-11.0	4,256,297	298,949	-10.8	-14.3	10.86	11.09
	OREGON	293,411,227	21,616,047	-5.7	-8.3	1,394,192	101,278	-8.1	-9.6	17.54	17.79
	TEXAS	28,331,672	2,216,945	-10.4	-2.2	270,327	20,576	-19.9	-8.7	8.73	8.98
	NEW YORK	45,675,267	2,382,935	4.8	-2.8	442,075	27,287	-4.2	-6.9	8.61	7.28
	NORTH CAROLINA	44,600,967	3,367,692	-1.4	0.0	421,797	30,805	-7.6	-8.5	8.81	9.11
	INDIANA	24,920,968	1,914,615	-1.7	-9.4	251,108	18,952	-8.1	-15.9	8.27	8.42
	MICHIGAN	25,327,323	1,607,375	-4.2	-11.6	239,375	14,926	-9.1	-16.3	8.82	8.97
TYPES	RED	8,102,123,036	637,691,225	-4.2	-6.9	68,163,677	5,296,817	-6.5	-9.4	9.91	10.03
	WHITE	6,534,625,932	482,043,575	-0.3	-2.1	68,808,432	5,050,289	-3.7	-5.3	7.91	7.95
	PINK	1,122,832,209	73,486,223	-7.5	-8.6	13,651,113	952,805	-11.3	-11.4	6.85	6.43
VARIETALS	TOTAL CHARDONNAY	2,699,412,974	201,162,312	-1.2	-2.7	28,088,091	2,083,750	-4.0	-5.0	8.01	8.05
	TOTAL CABERNET SAUVIGNON	3,137,204,241	247,904,740	-2.0	-4.4	24,657,072	1,938,026	-4.0	-7.0	10.60	10.66
	TOTAL PINOT GRIGIO/PINOT GRIS	1,487,248,880	110,720,564	0.9	-0.3	17,714,323	1,311,256	-2.3	-3.8	7.00	7.04
	TOTAL PINOT NOIR	1,318,265,015	104,249,407	-2.0	-5.6	8,739,823	687,862	-4.4	-7.6	12.57	12.63
	TOTAL MERLOT	593,790,482	45,823,070	-7.4	-9.6	7,335,057	562,898	-9.2	-11.0	6.75	6.78
	TOTAL SAUV BLANC/FUME	1,362,143,713	99,215,021	4.5	2.4	10,971,028	788,864	1.3	-1.3	10.35	10.48
	TOTAL MUSCAT/MOSCATO	570,417,398	43,468,467	-8.1	-10.1	7,712,016	578,576	-11.2	-13.0	6.16	6.26
	TOTAL WHITE ZINFANDEL	210,578,657	15,676,014	-9.8	-8.7	3,974,466	293,484	-12.3	-11.7	4.42	4.45
	TOTAL MALBEC	227,260,567	18,431,668	-7.3	-7.0	1,963,324	157,213	-9.3	-10.4	9.65	9.77
	TOTAL RIESLING	221,722,251	15,821,600	-6.0	-8.7	2,133,139	150,422	-8.9	-11.7	8.66	8.77
	TOTAL ZINFANDEL	198,793,283	15,166,771	-9.2	-10.9	1,244,255	93,327	-12.2	-12.9	13.31	13.54
	TOTAL SHIRAZ/SYRAH	133,616,573	9,710,674	-11.5	-12.3	1,173,610	85,426	-14.6	-16.9	9.49	9.47
	WHITE BLENDS (ex. 4/5L)	246,865,030	17,539,099	-2.9	-6.0	2,556,163	184,899	-5.1	-7.2	8.05	7.91
RED BLENDS (ex. 4/5L + CHIANTI)	2,055,294,047	161,480,152	-6.7	-9.8	16,488,043	1,273,962	-8.2	-11.8	10.39	10.56	
ROSE BLEND	624,305,319	35,840,759	-6.8	-9.6	4,631,975	276,027	-11.8	-14.1	11.23	10.82	
GLASS SIZES	750ML	11,787,689,385	888,649,679	-3.0	-5.7	79,557,009	5,911,078	-6.3	-9.1	12.35	12.53
	1.5L	1,795,984,743	136,498,682	-4.6	-6.2	28,605,881	2,157,134	-7.6	-9.3	5.23	5.27
	3L	44,556,229	3,293,494	-9.4	-13.7	982,980	71,811	-15.7	-17.5	3.78	3.82
	4L	62,588,861	4,621,065	-7.3	-8.9	1,843,777	133,815	-10.6	-12.8	2.83	2.88
	187ML	76,398,712	5,019,244	-20.1	-21.5	843,790	55,054	-20.7	-24.4	7.55	7.60
	375ML	54,733,212	4,477,374	2.7	1.0	213,337	17,399	2.5	1.5	21.38	21.44
BOX SIZES	ex. 4/5L	1,135,137,050	89,151,303	2.5	1.2	19,568,344	1,515,496	1.4	-1.5	4.83	4.90
	1L	34,769,263	2,814,307	2.8	5.3	485,970	38,920	1.3	2.1	5.96	6.03
	1.5L	16,357,298	1,145,097	-13.9	-17.1	294,122	20,471	-16.3	-18.3	4.63	4.66
	3L	836,115,309	65,758,682	1.9	0.1	15,797,166	1,225,490	1.3	-2.1	4.41	4.47
	5L	466,078,019	36,243,171	-0.3	0.5	15,498,286	1,179,149	-4.8	-4.2	2.51	2.56
	TETRA	282,788,961	22,257,538	5.0	5.8	3,469,644	268,909	3.1	2.6	6.79	6.90

Source: NielsenIQ

BUYER'S GUIDE

This list of select vendors is generated using the Wine Business Buyer's Guide. To see a full list of vendors please visit: wbbuyersguide.com

Select Closure Vendors

Amcor American Canyon

American Canyon, CA | 877-783-5846 | www.amcor.com

COMPANY DESCRIPTION: Amcor is a global leader in the manufacturing of Stelvin aluminum screwcaps for the wine industry. Stelvin®, the original wine screwcap was developed more than 50 years ago. The Stelvin® screwcap uses specific liners that respect the aging process and deliver uncompromised flavors and aromas. Amcor recently launched EASYPEEL, an innovative aluminum overcap that makes opening premium wines easy and safe. Amcor also introduced SHAPEART TEXTURE, a custom or a standard texture for your STELVIN® closure that brings a differentiating factor and elevates wine brands.

CLOSURE TYPES: Screw Caps (STELVIN®)

See our ad page 31



G3 Enterprises

Modesto, CA | | www.g3enterprises.com

COMPANY DESCRIPTION: G3 Enterprises is an industry leader in packaging manufacturing, winemaking supplies and equipment for the beverage and ag industries with locations throughout the U.S. G3 offers custom solutions and stock programs for DIAM closures, caps, GTWIST OTR-controlled caps, capsules, and wire hoods. In addition, G3 distributes Boisé oak alternatives, Gallo glass, cans, and petainerKegs™.

CLOSURE TYPES: Screw Caps, Caps, Capsules, Sparkling Wine Closures, Micro Agglomerated

See our ad page 7



Berlin Packaging

Fairfield, CA | 800-2-BERLIN | www.berlinpackaging.com

COMPANY DESCRIPTION: Berlin Packaging is a leading supplier of bottles and packaging to the wine market. Beyond an extensive supply of in-stock standard and premium bottles, we also offer an array of services to be the true one-stop shop for packaging needs, including branding and bottle design, inventory management and warehousing services, and sustainability strategies. With locations worldwide, Berlin Packaging has the right products, expertise, and geographic proximity to help customers increase their net income through packaging products and services.

CLOSURE TYPES: Natural Cork; Screw Caps

See our ad page 55



Guala Closures North America

Fairfield, CA | 707-425-2277 | www.gualaclosures.com



COMPANY DESCRIPTION: Founded in Italy in 1954, the Guala Closures Group is the largest aluminum and safety closure supplier in the world, supplying the wine, spirits, oil and beverage industries.

CLOSURE TYPES: ROPP wine screwcaps, Internal thread wine screwcaps (Savin, WAK), Sparkling Wine closures, Safety closures for spirits, Luxury bar-top and cork for spirits.

See our ad page 65

Herti US

Capitola, CA | 916-260-6959 | www.hertius.com

COMPANY DESCRIPTION: Herti is a company with over 30 years of experience in the manufacturing of aluminum, plastic and composite closures to fit all kinds of bottles for wine, spirits, mineral waters, juices and olive oil. The production plant is in Europe, but Herti operates globally and has subsidiaries in the US, UK, France, Germany and Romania. The company is certified by ISO 9001 since 2000. It holds a BRC/IOP certificate, the global standard for packaging and packaging materials. Herti is a member of SEDEX and EcoVadis- organizations supporting the ethical trade and sustainability in the supply chain.

CLOSURE TYPES: aluminum screw caps, composite closures

See our ad page 52



Cork Supply USA

Benicia, CA | 707-746-0353 | www.corksupply.com

COMPANY DESCRIPTION: Since 1981 Cork Supply has been redefining quality through innovation, superior service and expertise. Our products include natural corks, VINC technical corks, Nomacorc® synthetic corks, Rivercap tin and Rivercap AGL poly laminate capsules, Sparflex wirehoods and foils and Guala screwcaps. Our innovative DS100 and DS100+ processes for natural corks and VINC line of technical corks feature individual TCA guarantees.

CLOSURE TYPES: Natural Cork, Optimum Colmated Cork, Mirco Agglomerated, Technical Cork (1+1), Agglomerated Cork (1+1), Sparkling Wine Closures (0+2, 0+1, Micro), Technical Corks for Wine and Sparkling Wine (VINC and DS100)

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Lafitte Cork & Capsule, Inc.

Napa, CA | 707-258-2675 | www.lafitte-usa.com

COMPANY DESCRIPTION: Lafitte aims to be a progressive community leader in sustainable production. We are committed to continuously improving the quality and integrity of our products and services, with an active focus on environmental responsibility. We are proud to offer the best service platform in the wine packaging industry.

CLOSURE TYPES: Lafitte currently offers the following closure solutions: natural cork, agglomerated, agglo 1+1, sparkling wine corks, colmated, molded micro agglomerate and bar-top closures. Lafitte also offers PVC, PETG, polylam, aluminum and tin capsules.

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Diam Closures USA

Modesto, CA | | www.g3enterprises.com

COMPANY DESCRIPTION: DIAM Bouchage manufactures technological cork closures for still wine, sparkling wine, spirits and beer. DIAM's technology eliminates cork taint, guarantees cork elasticity, and controls oxygen transfer. G3 Enterprises is the exclusive distributor in the North American Market.

CLOSURE TYPES: Wine, Sparkling Wine and Spirit Closures

See our ad page 11



MA Silva USA

Santa Rosa, CA | 707-636-2530 | www.masilva.com

COMPANY DESCRIPTION: M. A. Silva is the leading and award-winning manufacturer of premium corks, glass, and packaging. It is our mission to demonstrate impeccable integrity, consistent customer service, and continuous commitment sustainable and eco-friendly operations.

CLOSURE TYPES: Cork (Natural, Sparkling, Agglomerated, Micro-agglomerated)

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Select Closure Vendors

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Napa, CA | 707-258-3930 | www.portocork.com

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CLOSURE TYPES: Natural Corks; Sparkling Wine Closures; Technical Cork (1+1); Technical Cork (Agglo); Technical Cork (Composite Cork); CWINE Super Critical Treated Micro Agglomerated Stoppers

See our ad page 3



Scott Laboratories

Petaluma, CA | 707-765-6666 | www.scottlab.com

COMPANY DESCRIPTION: Scott Labs is the leading supplier of fermentation, filtration, equipment and packaging products and services for the North American wine and beverage community. We specialize in yeast, bacteria, fermentation nutrition, oak infusion products, filters and filtration systems, crossflows, crush and cellar equipment, cork, screwcaps, and capsules. Our vision is to provide the best customer experience to the wine and specialty beverage community.

CLOSURE TYPES: Natural Corks, Screw Caps, Sparkling Wine Closures, Technical Cork (1+1), Technical Cork (Agglo), Technical Cork (Composite Cork)

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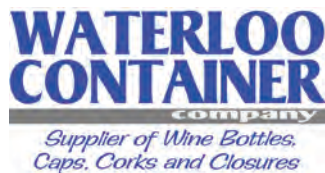
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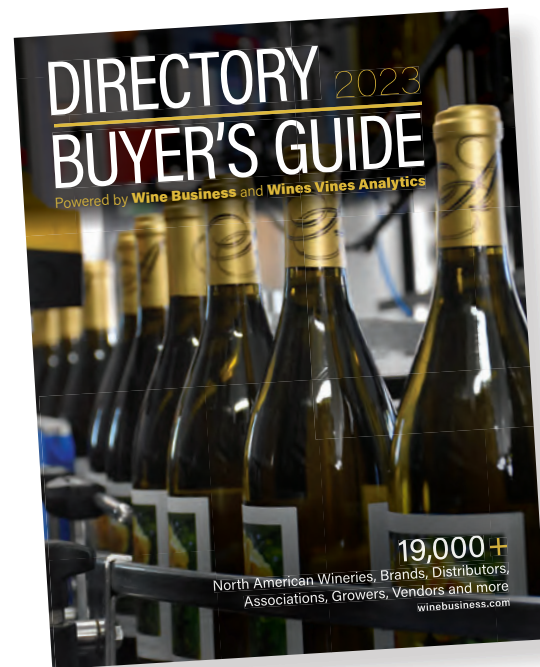
CLOSURE TYPES: Corks, PVC and Poly laminate capsules, Screw Caps and BarTops from industry best like STELVIN, TAPI, Battistella, M.A.Silva, Amorim and Supercap.

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VINEYARD BANKING



Navigating an Uncertain Economy in the Wine Sector

Sophia McDonald

Sophia McDonald is a wine and food writer based in Oregon's Willamette Valley. She also writes for *SevenFifty Daily*, *Wine Enthusiast*, *The Drop* and several other publications.

Editor's Note: *At the time of publication, news broke that the FDIC had taken control of Silicon Valley Bank and its assets, freezing accounts for many wine-related businesses. For now, the long-term implications are unknown. Wine Business Monthly will continue to cover the news both online and in print. The article that follows was written prior to the SVB reports and looks at the landscape for vineyard-related loans, business dealings and the health of the industry.*

THERE WAS A TIME in the not-too-distant past when interest rates were historically low and options for acquiring capital to buy a vineyard, open a winery or merge with another firm were high. Today, the financial picture is very different; wine businesses are facing higher interest rates among other challenges. Ed Adams, vice president of the corporate banking group for American AgCredit, summed it up this way, “Rising interest rates, inflation, pandemic distortions in wine sales an ambiguous economy, and the recent closure of Silicon Valley Bank are creating a challenging operating environment for both wineries and growers.”

Rising interest rates have made it more difficult to qualify for a loan or refinance, said Jeff Clark with the Craft Beverage Group at LiveOak Bank.

“In many cases, the interest expense to borrow has more than doubled in less than a year. This also increases refinance risk for existing borrowers. You may be facing a higher debt service, when you refinance, if your previous interest rate was fixed more than a year ago,” Clark said.

“From a financing standpoint, higher interest rates are posing challenges to all borrowers in today's current economic climate—particularly if they have variable-rate financing in place,” Adams said. “Operating lines of credit are

priced off variable rate (Prime Rate or SOFR) as the underlying index, and both are higher than fixed-rate terms currently, given the inverted yield curve.”

Higher interest rates aren't the only challenge facing wine businesses. According to the International Monetary Fund¹, inflation was around 3.5 percent annually from 2017 to 2019. It was 8.8 percent in 2022. Though inflation is slowing, it is still expected to be high, with rates projected at 6.6 percent in 2023 and 4.3 percent in 2024.

Many proposed winery and vineyard acquisitions are priced higher than historic cash flow is able to support.

“Banks are cash flow lenders and want the winery or vineyard to be able to service the debt with a cushion,” Clark said. “Any intangible value above the appraised value of the assets can be problematic for a lender and may require a higher equity injection. Projection-based deals are more difficult to finance in this environment and require contractual-based sources of revenue to support assumptions.”

In addition, the wine industry has struggled to pass on increasing costs to consumers. Clark noted, “This reduces margins and cash flow available for debt service. There is no lack of substitute product in the adult beverage space, which makes it hard to increase prices without risking losing a customer to a lower-priced wine or alternative alcohol beverage.”

Pandemic hangovers continue to confound many wineries. “COVID ended up benefiting most wine businesses; but as we come out of COVID, the results are more divergent,” said Erik McLaughlin, CEO of Metis LLC. “While the industry is generally flat from a macro perspective, individual wine businesses

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Navigating an Uncertain Economy in the Wine Sector

tend to be either growing or shrinking. It's no longer a rising tide for all, but quickly becoming an environment of winners and losers."

In addition to problems with demand, many firms are facing supply challenges.

Adams noted that wineries on the North Coast are coming off of three years of short harvests.

"Some wineries didn't have a 2020 harvest and, as a result, have no vintage offerings for that year. Those vintage releases are currently impacting cash flow and financial results. Less capitalized wineries or operations unable to strategize around these shortfalls are now feeling cash flow issues," Adams said.

The federal government's Paycheck Protection Program (PPP) loans helped some wineries bridge cash flow challenges from these low harvests, but for most people, those funds are long gone.

The U.S. is not technically in a recession. The economy posted small gains in both Q3 and Q4 2022², but high inflation, and the uncertainty brought by the Ukraine war, continued supply chain challenges and other factors mean a recession is still possible. The job market continues to be strong, with unemployment at the significantly low rate of 3.6 percent in mid-March. This is helping parlay recession fears. However, consumer confidence has fallen the last two months³. All of this has left consumers and business owners nervous about the near-term future of the economy.

Business Still Being Conducted

It's not all doom and gloom, though. Both inflation and interest rates seem to have stopped their precipitous climb, which is good news for everyone.

"Now that interest rates have more or less stabilized, albeit at a higher level than they were a year ago, the market is beginning to 'price in' the higher cost

of capital and get back to business," McLaughlin said. "Buyers and investors are getting more comfortable with rates and tweaking their business plans and investment objectives to incorporate more debt service out of cash flow. In certain niche markets where values remain strong, the higher cost of capital can be offset with anticipated continued appreciation of underlying asset value."

Adams had good news to report from American AgCredit.

"We are still closing new loans for capital projects, equipment purchases and acquisitions. The cost of capital is a bit higher, but credit availability is still strong to support good projects for borrowers that have well thought out business plans," Adams said.

The real estate market in California's wine country has not taken a nosedive in response to rising interest rates and a fragile economy.

David Ashcraft, broker and founder of Vintroux Real Estate, said he's still seeing plenty of interest in both wineries and vineyards in Napa and Sonoma, and noted that "Wineries are continuing to plan for the future and lock down sources of fruit."

Land planted to high-end Cabernet Sauvignon (in Napa) and Pinot Noir (in Sonoma) continues to be in high demand as do vineyards with Sauvignon Blanc.

For premium vineyards, higher interest rates seem to be causing a leveling-off in demand, Ashcraft said. For vineyards with average to lower than average fruit, he is seeing prices go down slightly.

"One of the things that's helpful is that grape prices are still strong. You see a spiral effect; in that you have both higher interest rates and the grape prices have gone down, but that's not what we're seeing right now," Ashcraft said.

Information on demand for wineries is harder to come by, but Ashcraft's sense is that there's a similar trend. Wine brands that are quality-oriented are in a good location and are profitable, are seeing no appreciable decline in values. Wineries that are producing lower-quality wines, aren't in prime areas

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or aren't profitable are going down in value although there does still seem to be demand for them.

"Lifestyle buyers are a different category, and that's definitely taking a bit more of a hit," Ashcraft said.

Clark does caution that "Inflation, coupled with supply chain disruptions, has created problems for construction loans. Projects are coming in over budget, sometimes significantly so. Banks are increasing contingency reserves and are being more conservative, with some banks choosing not to provide construction financing at this time."

Adams mentioned that real estate transactions are taking longer to close with a 45- to 60-day average.

And McLaughlin noted that higher interest rates are making it harder to finance vineyard-only projects.

"Vineyard financing for operators who have internal use for grapes remains doable, but stand-alone vineyards are experiencing margin squeeze between inflation of operational costs and inputs and higher cost of capital that they are having a difficult time recapturing in higher grape prices," McLaughlin said.

Burnish Your Business Plan and Credentials

In this less-than-ideal marketplace, lenders are getting pickier about with whom they work.

"Strong operators, delivering growth with good cash flow, are not difficult to finance," McLaughlin said, whereas those lacking strong wine industry credentials and cash flow may have a harder time finding partners.

What can wine brands do to make themselves look more appealing to lenders? Good bookkeeping and accounting give lenders confidence in a company's ability to service their debt, according to McLaughlin. Additionally, make sure the company's financial documents are in order and cost accounting is accurate.

"Lenders are particularly attracted to strong margins at the moment as well, as much or more as growth," he added. "Some wineries seek growth at the expense of margin—often producing a bigger business that makes the same amount of money. More modest growth, while maintaining margin, will position operators to be most attractive to lenders."

Depending on the project, it may benefit brands to think outside the box, at least a little, when seeking lending partners, Clark noted. For example, in order to get loan payments to fit with the company's cash flow now that interest rates are higher, lenders may require the borrower to reduce the principal. If borrowers can't do that, a government-guaranteed option, such as a Small Business Administration or USDA loan, might be a better fit (although with the caveat that these programs are predicated on cash flow as well).

"For borrowers seeking financing for vineyard purchases or longer-term capital projects, we encourage those applying for new loans—or those that have existing variable-rate loans—to consider fixed-rate options," Adams said. "We also recommend shorter terms and pre-payment flexibility."

Clark cautioned that banks tend to have varying appetites for different types of credit. Depending on the need, it might make sense to reach out to a different partner.

"For example, if you need working capital to expand and grow, seek out a lender that specializes in that area," Clark said. His advice is to look for a bank with plenty of experience in the wine industry. He said many banks have dipped their toe into the wine lending space only to vacate during difficult times, leaving borrowers in a bad spot.

"Borrowers need to be strategic when applying for and structuring loans," Clark added. "Use permanent assets for long-term debt collateral. Use your

current assets for working capital collateral purposes only. Maintain sufficient liquidity for a working capital cushion."

Adams added that creating a strong business plan with a solid set of financial projections is critical for anyone seeking additional debt for capital projects or acquisitions. The projections should show an adequate ability for the borrower to cover the debt service on an annual basis and clearly demonstrate contingency plans.

Adams encourages businesses to think of their lender as more than just a source of money. Some offer their partners value-added services, such as access to agricultural economists and industry analysts who can help them make their business and business plan even stronger.

Now may not seem like the ideal time to be looking for investment in a business, but with interest rates stabilizing and inflation on a downward trajectory, things are looking up. Plus, depending on your needs and the strength of the company, it may be the perfect moment to approach a lender.

Clark leaves owners with this sage advice, "Raise capital when you don't need it. When you need it, it's probably not available." **WBM**

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Any Business that Uses Google Analytics to Track Website Views, Purchasing or Omni-Channel KPIs Will Lose Data Come July 1, 2023

Michelle Kaufmann

Michelle Kaufmann is a powerhouse voice and crusader for the Oregon wine industry, having previously led communications for the Oregon Wine Board before joining the Stoller Wine Group in 2017. She oversees all media relations, government relations, community relations, and communications efforts, working in lockstep with the marketing, sales, and production teams. A Portland, Ore. native, Kaufmann earned her bachelor's degree in journalism from the University of Oregon, focusing on public relations and communications. She currently serves on the Board of Directors for the International Pinot Noir Celebration, Willamette Valley Wineries Association, and WineAmerica, as well as the associated marketing committees.

***Editor's Note:** The following was adapted from a presentation at the Wine Industry Financial Symposium. Wine Business Monthly wants to thank Michelle Kaufmann for bringing this new issue to our attention and allowing us to print her speech.*

AS AN ELDER MILLENNIAL, it's been so exciting watching the wine industry finally embrace the 21st century. The pandemic landscape enabled us data-driven digital marketers to thrive and C-Suite executives to finally see the bigger picture behind the "digital revolution" when restaurants, hotels and our tasting rooms were closed. For the first time ever, in 2020, buying wine online was easier than it was in-person. Think about that. In uncertain and highly stressful times, instead of not buying wine, people purchased it online.

For our wineries, because we'd been investing in our digital spaces, data-driven insights allowed us to experiment, carefully measure outcomes and painstakingly analyze our results. We saw in real time how the latest technology and tactics could be prioritized into growth strategies, optimizations, and value—no longer were we spending thousands of dollars on marketing campaigns and left to wonder the true ROI.

Now, nearly three years later, online sales are slowing and normalizing into new benchmarks. Life today isn't locked down, like it was in early 2020, or semi-normal as it was in 2021. We can see that transition in our online sales. The recent Q2 2022 DTC Report from Enolytics and Wine Direct showed online sales down 22 percent versus the first half of 2021 but noted they're still up massively from 2019. We have an opportunity to regain those losses by nurturing our digital ecosystems, making it easier for our consumers to navigate our online presence.

"But how?" you say. Start by building a marketing ecosystem, not a marketing funnel. At the heart of that ecosystem is your website. It's the field where the game is played. The past two years have shown that an integrated digital approach—meaning a healthy mix of traffic coming to our website via organic search, direct traffic, paid search, email, social, etc.—will pay real dividends because we're creating more cohesive, omni-channel campaigns.

Your digital campaigns should feed your digital ecosystem. For every campaign, there should be eight smaller content pieces that tie back: things like blogs, long-form video, short-form reels, still imagery, e-commerce promotions/announcements, PPC campaigns, etc. Each component of the strategy needs to interact with the others so you can cultivate your audience, and above all, everything must be digitally tracked.

And this is where we pivot.

There's a storm brewing on the horizon, and it will fundamentally shift how we talk about data collection, measurement and analysis. "Big Data" has been a bit nefarious at times, and consumers—me included—are concerned about how their data is collected and used. We've seen a litany of ever-changing privacy and data policies, like General Data Protection Regulation (known as GDPR) and the California Consumer Privacy Act, come into effect.

In response, Google is officially ending the Universal Analytics that we data-driven marketers have come to know and love.

The Massive Switch from Universal Analytics to GA4

On July 1, 2023, the new GA4 will provide marketers with a powerful look into their customers' journeys across numerous websites, apps and devices. If your business isn't preparing right now for this tectonic shift in digital strategy and measurement, your business could be left behind.

Now, I'll be the first to admit that I am not an expert on exactly how to optimize for the changes Google is making. However, I hope this serves as a canary in a coal mine for what's coming, and I encourage you to play around with the new landscape before it becomes reality.

In July, Google Analytics will no longer work as just a tool for reporting campaign results that provides unlimited data with no context behind it. GA4 is inching closer to digital innovation by using artificial intelligence and machine learning to collect data and deliver insights through event-based reporting. This change isn't a simple upgrade to the Universal Analytics framework: it's a brand-new way of collecting insights.

Universal Analytics uses a session-based format, and the basic unit of data collected is called a "hit." A hit is essentially a package of descriptors that captures a user's interaction. The most used "hit" type in Universal Analytics is page views.

By contrast, GA4's event-based format only tracks a user interaction that you specify it to track. Events represent a fundamental data model difference to the language on which we've built out KPIs—meaning that for your business to gain insights about your campaigns, you must know your customer, their patterns and your goals before setting up GA4 so that you have contextual data.

“This change single-handedly makes your first-party data—or your rolodex of data from your club members, repeat and first-time purchasers—the most important tool in your toolbox.”

If that's not enough, GA4 doesn't care about your historical data and KPIs. After the official Universal Analytics retirement date, you'll have access to it for six months. However, your old data won't import into GA4 nor can you access your historical data through it.

GA4 will begin collecting data from the moment it is set up, and you'll only have access to that information, making it a critical moment now to start assessing the forthcoming framework.

Tracking Across Websites Just Became Obsolete

The other massive change coming with GA4 is the loss of one of the most popular tools us data-driven marketers use to learn about customers, "cookies," leaving the industry to search for new ways to fill the data void. If you've heard the term but aren't familiar with the lingo, cookies are the small identifiers that have tracked user behavior across the Internet since the mid '90s.

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When cookies track users across multiple domains, they're called third-party cookies. All too often, third-party cookies are executed lazily; we all know how lame it is to get an ad for something we've already purchased. As more and more websites collect cookie data from users, we can begin to paint a more detailed picture of who that user is, what the person likes and what they are likely to do.

But not all cookies are created equally. When cookies are only used on your website and don't follow consumers after they leave, they're first-party cookies. Generally considered more acceptable, first-party cookies are quite useful in a lot of ways: They remember your passwords, auto-fill forms, save items in your cart and suggest favorite products.

They're also the only form of cookies GA4 is allowed to use to track data.

To fill the data gaps, GA4 will leverage machine learning and other protocols in a process they're calling "blended data." As a user travels throughout the Internet, their browser will use the new cookie-less algorithm to assign them to pre-made "interest cohorts," along with many other users who have a similar history. With this approach, Google simulates user data rather than using third-party cookies.

This change single-handedly makes your first-party CRM data—or your Rolodex of data from your club members, repeat and first-time purchasers—the most important tool in your toolbox. (Not that it ever wasn't, but it's one of the easiest to overlook.)

Evaluating and mining your CRM data for sales opportunities is critical. Email marketing is one of the best modes of communication we have, and it's one of the most trusted mediums across generations. Take this opportunity to look for new venues to connect directly to your customers and ensure you're putting in-house systems into place to deepen relationships once you've established them.

There Are Benefits to the New Way of Collecting Data

What excites our marketing team at the Stoller Wine Group most about the new GA4 language is that the design model for event-based measurement is highly flexible, and its use can be extended well beyond today's scope.

It's an opportunity for us, as an industry, to embrace transformational change before it's here. If we want to continue riding the digital high of pandemic-era wins, we must invest in the resources to tell us what's working and how people are buying. We must focus on enhancing our digital spaces like we do our physical hospitality. We would never send a special pour of Pinot Noir to a table that only drinks Chardonnay so why do we do that in digital?

What Should You Do Now?

Take a moment to ask yourself, "Where do we want to be in Q4 2023?" Start cultivating the digital tools needed to help you get there so you can reap the benefits for decades to come.

Importantly, make sure your digital partners prioritize keeping up with new technologies, too. Call your e-commerce, POS and CRM providers to ask them about GA4, and what they are developing to keep the wine industry moving forward online. Their involvement will be vital to our collective success, and we cannot accept them developing the tools after change comes.

If you take nothing else away, start thinking about how you want to structure your new KPIs and conversions under the new lens of GA4. **WBM**

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All in the Name

Jake Lorenzo



JAKE LORENZO'S GRANDMOTHER was born in Kyiv. Getting to the United States was not easy for her. After settling in St Louis until the end of World War II, she migrated to California with her husband, kids and cousins and thrived. Her house was always the command post. If there were problems that needed fixing, weddings that needed planning, or kids that needed watching, then Belle Lorenzo's was the place to go. She was a generous, great cook and no one ever went away hungry.

Every Sunday, my grandmother's sister and her cousin would come over for coffee and kichlach. Kichlach were delicious cinnamon rolls, but they were hard: rock hard. As a kid, Jake Lorenzo presumed they had first been developed as weapons. Surely, if you tossed one at a Cossack and hit him in the head, he was a goner. As far as I knew, there were no Cossacks in California, so my grandmother and her guests (including her grandson) ate kichlach for Sunday breakfast. The secret was dunking them in coffee to soften them enough to chew.

Kichlach were so memorable for this detective that I convinced Jakelyn's mother to learn how to make them. Her kichlach were delicious, not as good as my grandmother's, but still excellent. Then I discovered fresh Saigon cinnamon at the local spice shop and those rolls became otherworldly. Top-flight cinnamon elevated our kichlach from memorable to heavenly.

If there is one thing I have learned hanging out with Chuy Palacios and other great chefs, it is that sourcing the best ingredients allows you to cook the best food. Because I am a detective and attuned to these things, I noticed that once a chef discovers a good product it seems like every good chef in town is using that same product. A few years ago, this detective didn't know that heirloom beans were a thing, but Steve Sando marketed them, and Thomas Keller served them, and now most good restaurants advertise Rancho Gordo beans in their dishes.

This detective has been to Argentina and Uruguay, so I know what good grass-fed beef tastes like. Great chefs in California were desperate to get their hands on that beef, but Argentinians and Uruguayans would revolt if their country tried to export their beef. Politicians are not willing to relinquish power over a steak, so California chefs had to look elsewhere.

Entrepreneurs will always step in to fill a void, that's why so many fine restaurants serve Painted Hills Natural Beef. It may not be from Argentina, but it's as close as we can get. The same chosen purveyors repeatedly started turning up at great restaurants. Heritage pork from Snake River Farms dug in on menus like wild boar discovering a suburban lawn. Fishmonger, Water 2 Table, delivered so much local fish that this detective thought the boats were unloading in the parking lots, and it was as if Liberty Ducks migrated from northern skies directly to chef kitchens.

It occurred to this detective that since so many local chefs were sourcing the same products from identical purveyors, perhaps their food would start to taste the same. Chuy scoffed at my concerns. "No te preocupes, amigo. Great products can make tremendous food, but each chef brings their own experience, art, and craft to a dish, so it will always be different. It's like winemakers working with grapes from the same vineyards."

That makes sense to this detective. Great vineyards attract talented winemakers like bees around flowers. Beckstoffer's To Kalon vineyard grapes find

their way to Paul Hobbs, Robert Mondavi, Tor, Shrader, Opus One, and others. Hyde Vineyard sells grapes to dozens of wonderful winemakers as diverse as Dave Ramey and Mia Klein. Seems like most Central Coast winemakers have taken a stab at Bien Nacido vineyards at one time or another. The question becomes, "Is a great vineyard making these winemakers famous, or are the winemakers creating celebrated vineyards with their inspired wines?"

Jake Lorenzo is convinced that the best individual vineyards have a distinctive character that represents the terroir of that particular place. Talented winemakers can take the same produce and create very different expressions

It is possible that these chosen vineyards simply have the most delicious and complex fruit, but Jake Lorenzo bets there is something else making certain vineyards so desirable.

of those grapes by picking at different times, using assorted fermentation regimens, or selecting various aging systems. Depending on how the winemakers make the wine, the terroir character can be exaggerated or muted.

Wineries are always looking to produce varied expressions of their wines to better service their wine clubs. Some wineries isolate blocks of grapes within their vineyards to produce an assortment of wines. Grapes grown from the side of a hill differ from grapes grown on the flat land at the bottom of the same hill. If wines made from various sections of a single vineyard are not diverse enough, winemakers will look to vineyards in alternate AVAs. Numerous renowned Pinot Noir specialists make wines from Russian River, Sonoma Coast, Santa Rita Hills, Anderson Valley and Carneros.

Hundreds of winemakers are searching every square inch of land for prime vineyards, and before long one or two vineyards in each region become the most popular among the winemakers. It is possible that these chosen vineyards simply have the most delicious and complex fruit, but Jake Lorenzo bets there is something else making certain vineyards so desirable. Winemakers trying to craft thrilling wines look for vineyard owners dedicated to producing the finest grapes. Once they find one another, it is in their mutual interest to do business. It is that simple.

For more than a decade I made Pinot Noir from Valerie's Vineyard, a tiny one acre vineyard in Sonoma Carneros. The owners of the vineyard made 80 cases a year of commercial wine, while I produced 15 cases a year for myself and friends. Depending on vintage conditions, I'd try different techniques. Sometimes I'd use whole cluster, most times native yeast, but once in a while I'd add commercial yeast. Certain years I'd punch down more or less. No matter what regimen I used, my Guerrilla Vino wine always differed from the owner's commercial brand, and both wines were always good. It could be the vineyard, or Jake Lorenzo could be a talented winemaker. I like to think it is a bit of both. **WBM**

Wineries & Winemaking

Spring Valley Vineyard announced that sixth-generation family farmer and winemaker Kate Derby will lead winemaking operations. Granddaughter of Spring Valley Vineyard founders Shari and Dean Derby, Kate's roots in the Walla Walla Valley run deep. She has worked at Spring Valley Vineyard for much of her life. Growing up she spent summers hoeing the vineyard rows with her grandfather and racking wine with Spring Valley's first winemaker, her uncle Devin Derby. After receiving her bachelor's degree, she began her full time career with Spring Valley in the tasting room, then on the road representing the brand across the country and finally joining the winemaking team in 2011. 2023 will be Kate's first vintage leading winemaking for Spring Valley Vineyard.



**Ashleigh Sabold
Lettiere**

Ste. Michelle Wine Estates hired Ashleigh Sabold Lettiere as the new vice president, independent region. In this role, Sabold Lettiere leads the Ste. Michelle sales team across 13 states that make up the independent region, including New Jersey, North Carolina, Tennessee, West Virginia, Georgia, Alabama, Michigan, Wisconsin, Massachusetts, Maine, Vermont, Connecticut, and Rhode Island. These states account for almost a quarter of Ste. Michelle's national volume. She joined Ste. Michelle after a decade-long career with Treasury Wine Estates, most recently as division vice president for the Northeast. Prior to that, she served

in a leadership role for J. Lohr Vineyards and Wines, as well as in sales at the Breakthru Beverage Group (formerly Reliable Churchill).



Rod Hobson

Del Rio Vineyard Estate announced the retirement of brand development manager, Rod Hobson. Born and raised in the Rogue Valley, Hobson left the area for six years while serving in the U.S. Air Force. Upon returning to the valley in 1980, he was hired by a local beer and wine distributor and held many positions over his 39-year career. From driver to salesman, district manager to sales manager, Hobson has held nearly every position available during his tenure in the beer and wine distribution field. In 2019,

Hobson moved to the supplier side of the wine industry and joined the team at Del Rio Vineyards. Retiring this spring, Hobson is looking forward to traveling, camping, and spending time enjoying life with his wife, Heidi, and three grandchildren.



Alan Southwick

Alan Southwick joined the Del Rio Vineyard Estate team as key account manager for the Southern Oregon region. Southwick brings more than 20 years of experience in the wine industry to his position with Del Rio Vineyards. Prior to joining the Del Rio Team, Southwick worked for a large distribution company that represented wines from all over the world.

Industry Services & Suppliers



Ashley Hepworth

Ashley Hepworth, former winemaker at Joseph Phelps Vineyards, launched Ashley Hepworth Wine Consulting, which is focused on helping winery teams elevate winemaking capabilities. Hepworth's consultancy offers a diverse range of services, including vineyard evaluation and sourcing, harvest best practices, blending, optimal cellar and production practices, and bottling and logistics management. Hepworth, who was with Joseph Phelps Vineyards for a total of 24 years—and led the team as winemaker for 15 years—crafted more than 100 critically-acclaimed

wines, including the brand's iconic flagship wine "Insignia." At Joseph Phelps Vineyards, Hepworth worked her way up from intern to cellar lab technician, enologist, associate winemaker, and then winemaker, where she led the team in producing award-winning blends, and critically acclaimed wines for 15 years.

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**Christa Crews**

Christa Crews is the newest member of the Tonnellerie Leroi & Charlois Cooperage North American team, and serves as the new representative for the Lodi, Sierra Foothills and Sonoma regions of California as well as the Pacific Northwest and Texas. After spending more than 20 years in the sales and services industries of banking and real estate, plus attaining a law degree, Crews decided to take a career shift into something that excited her. Her enthusiasm for wine and her experience with hosting tastings, educational events, and trips, turned into formal studies via WSET courses through the Napa

Valley Wine Academy. Achieving WSET Level 2 with Distinction, followed by Level 3 with Merit, Christa is now halfway through her 2-year Level 4 Diploma program. She is also concurrently enrolled in the UC Davis Winemaking Certificate Program.

Distributors, Importers & Wholesalers

Deutsch Family Wine & Spirits appointed Christopher McFerran as senior vice president, strategic accounts. In his new role, McFerran is responsible for sales management and business development of the Deutsch Family portfolio within off-premise strategic and national chain accounts. McFerran comes with more than 20 years of success in beverage alcohol, most recently with Concha y Toro, where he served as the SVP of sales, and was responsible for driving U.S. sales strategy and execution while leading a team of 45. Under his leadership, Bonterra Organic Vineyards and Bodega Trivento both outperformed their respective categories in off-premise strategic accounts. Before joining Concha y Toro, McFerran led national account teams at both Delicato Family Vineyards and Treasury Wine Estates

**Vanessa Conlin**

Sotheby's hired Vanessa Conlin, MW, as its global head of wine retail, based in New York. Conlin brings with her a strong combination of experience in sourcing and curating the world's finest wines, together with the entrepreneurial spirit and creative mindset that will be key to her new role. Conlin will expand on the market opportunities and build out Sotheby's strategic wine offering as well as foster the digital content and community strategy across the global retail destinations. Most recently, she was the chief wine officer at Wine Access, connecting people and places through uncovering the world's

most inspiring wines, their stories, and provenance. Prior to joining Wine Access, Vanessa was the director of sales and hospitality at Dana Estates in Napa, California.

In Memoriam

**Al Scheid**

Scheid Family Wines shared news of the death of Al Scheid, founder and chairman of the Board of Scheid Family Wines, at the age of 91. Alfred G. Scheid, known as "Al" to everyone, was born in Wheeling, WV, on Feb. 7, 1932. He died peacefully at his home in Pacific Palisades, Calif., on March 31, 2023. Al came from humble beginnings but went on to lead an extraordinary life. He was raised in the coal-mining town of Bridgeport, OH, during the Depression, an upbringing he wrote about in his memoir "Breaking Out of Beerport," published in 2014. Upon graduation

from Harvard, Al moved to California and joined E.F. Hutton & Co. but soon felt constrained by the corporate world. He went on to found two successful biotechnology companies without having a background in science, and his eponymous wine company, Scheid Family Wines, in 1972. Under his leadership, Scheid Family Wines evolved from a grape grower to a wine company producing close to 1 million cases of wine annually and is ranked among the top 25 largest wine producers in California.

**David Cameron**

David Cameron Baker, or "Cam," was born in Chicago, Illinois on Dec. 24, 1937. He died at his home on Larkmead Lane in Calistoga, Calif. On March 18, 2023. Cam was a husband, father, grandfather, lawyer, and winery proprietor. Cam graduated from Stanford University in 1958 and received his law degree from U.C. Berkeley in 1961. Cam practiced law for more than 50 years, 12 of them as the managing partner at Pettit & Martin. Cam married Katharine Solari (Kate) in 1961 and the Baker family took up residence on Corinthian Island in Belvedere, California. Kate's

parents owned Larkmead Vineyards, a 150-acre estate in Napa Valley. When her parents passed away in 1993, Cam and Kate became the proprietors and took great pride and joy in reestablishing Larkmead Vineyards as a historic and highly respected vineyard and winery. Cam passionately experimented with different grape varietals, root stock, and clones to find those best suited for the soil and climate at the estate.

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Jane Jiang, proprietor/winemaker, Duncan Peak Vineyards, Hopland, CA

Established in 1982, we are an organic certified vineyard in Hopland, California. We focus on producing ultra-premium wine with a sustainable and balanced approach. The property spans 107 acres, and we have dedicated over 70 percent of the land as a natural habitat for wildlife.



"For many years, Wine Business Monthly has always been my ultimate source of information. I particularly appreciate the surveys it conducts, which provide me with valuable insights into the consumer and job markets. I am also a fan of the viticultural and winemaking trials that are included in every issue. These trials allow me to stay updated in the grape-growing and winemaking worlds."

"One article that particularly resonated with me is 'Behind the Rise of Satellite Tasting Rooms,' by Michael S. Lasky. As a small winery, the majority of our sales come from direct to consumer, however, obtaining permits and opening up tasting rooms is a challenging and expensive process. Satellite tasting rooms, on the other hand, offer small wineries the opportunity to serve their wines at a lower cost while providing greater flexibility."

Annual case (or grape/tonnage) production: 100-500 cases

Planted acres: 7 acres

Career Background: My interest in wine began at the age of eight when my parents, who were wine distributors in China, would bring back various wine samples to taste. This sparked my interest in wine, although I never thought that I want to be a winemaker until I enrolled in the UC Davis Viticulture and Enology program. I kick started my winemaking journey with an internship at a boutique winery, Anaba Wines in Sonoma, and later gained valuable experiences at renowned wineries such as Beaulieu Vineyard and Beringer Vineyard in Napa Valley. I then traveled to South Australia and spent another vintage at Kirrihill winery in Clare Valley. I worked my way up to the lab manager position at Brasswood cellars. Later on, I joined Kale Wine Consulting -- where we make wine for more than 10 different brands, including my own brand, Duncan Peak Vineyard, in collaboration with Kale Anderson -- as an assistant winemaker.

What has been your biggest professional challenge? My biggest challenge is time management. Being a small winery owner means I wear many hats ranging from grape growing at the vineyard to serving wine at the table. Along with my own brand, Kale and I are also accountable for crafting wines for our consulting clients. Varietals that your winery is known for: Petite Sirah, Cabernet Sauvignon.

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