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## month in review

**AS THIS ISSUE HEADS** off to subscribers, bud break has just begun, marking the beginning of the winegrape growing season. Bud break came a little later this year than last, and that's been attributed to the winter rains. We were fortunate to have plenty of rain in California this winter. The experts just made it official. California is out of a drought situation for the first time in six years.

On a personal note, I've been on the road this month, starting with a trip to learn about the wine industry of South Africa, presenting at the Climate Change Leadership conference in Portugal, and attending *Wine Business Monthly*'s WiVi Central Coast conference in Paso Robles, California. We'll have reports related to these outings in upcoming issues.

This month we publish a report from the 2019 Unified Wine & Grape Symposium, where senior technical editor Curtis Phillips identified his picks for the coolest new equipment. *Wine Business Monthly*'s Innovation + Quality (IQ) conference is coming up next month and the April issue includes a recap from IQ 2018 on how winemakers are using phenolic data to make winemaking decisions and to help guide vineyard management decisions. Winemaking trials also play a big role during IQ: The trial we present in this month's issue compares using oxygen and nitrogen for flotation.

Results from a study detailed this month confirm that in addition to its role in micro-oxygenation and the enrichment in phenolic and odorant compounds, barrel aging provides an antioxidant capacity that influences wine's redox potential and oxidative stability.



The winemaker discussion on automated cap management is an especially enjoyable read.

That's just some of what you'll find in this month's issue.

On another note, we have some additional news to share. Wine Business Monthly managing editor Rachel Nichols is leaving her position with the publication to pursue exciting new opportunities and experiences. Many of our readers know Rachel. She's been with WBM for 13 years and has been amazingly wonderful to work with. We'll miss her a lot. Please join me in thanking Rachel for her many contributions and in wishing her the very best.

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Cyril Penn, editor

#### WINE BUSINESS MONTHLY

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Erath Winery's assistant winemaker was particularly pleased with flotation as a tool for the production of white wines but wanted to see if there were any qualitative differences when using nitrogen instead of oxygen. *Michael S. Lasky* 

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ESSION

"I say good luck when you try to take a price increase. At these conferences every year they say this is the year to take price. But it's definitely an art and not a science."

#### **Lisa Amaroli**, director of winemaking, North Coast, Benziger Family Winery, "Winemakers Discuss Cap Management Regimens," page 16

"When I have grapes with integrity, I like to work the grapes on the front-end of a fermentation."

#### Greg Gambetta, professor of viticulture, Bordeaux Sciences Agro, "Managing Phenolics in the Vineyard and Winery," page 44

"High temperatures of about 95° F negatively impact color, so you need to be more creative and nuanced, when managing light and exposing fruit, as temperatures increase."

## Nick Goldschmidt, owner/winemaker of Goldschmidt Vineyards,

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"Automation can be difficult for maintaining quality. I think winemakers need to visit their tanks at least twice a day to taste and monitor fermentations. After all, tasting is our job."

#### Allison Jordan, executive director, California Sustainable Winegrowing Alliance, "Do Wineries Profit by Highlighting Sustainability on Their Packages?" page 84

"Given the wide participation and broad adoption of sustainable practices over the past couple of decades, the California wine industry is well positioned to meet the growing interest of trade and consumers. It's also important to remember the multiple benefits that sustainable winegrowing offers vineyards, wineries, the environment, employees, communities and beyond."

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## news



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



#### Maison Louis Roederer Buys Merry Edwards Winery

In February, it was announced that Russian Valley winemaker pioneer **Merry Edwards** sold her winery to **Maison Louis Roederer**. Edwards, one of the first California women winemakers, founded **Merry Edwards Winery** in 1997 with family members and friends. Edwards focused on Pinot Noir wines but also produces Sauvignon Blanc and Chardonnay. The tasting room and winery is in Sebastopol. Louis Roederer has remained in the same family's hands since 1832.



#### Napa Valley Pioneer John Shafer Dies at 94

Napa Valley vintner and California wine industry pioneer **John Shafer** died on March 2. He was 94. Shafer grew up in Glencoe, Illinois, and earned an engineering degree from **Cornell University** before entering the publishing business in Chicago. In the early 1970s, Shafer moved with his family to California, where he started growing grapes. He produced his first Cabernet Sauvignon in 1978. The wine was released in 1981. In the mid 1980s, Shafer and his neighbors petitioned to have their region designated as the Stags Leap District American Viticultural Area. The AVA celebrates its 30th anniversary in April. Shafer was also known for his philanthropic projects in the Napa Valley.



#### TTB Issues One-day Permit Suspensions Over Consignment Sales

Federal officials with the Alcohol and Tobacco Tax and Trade Bureau announced four wholesalers and two wineries served one-day permit suspensions between December and February in California, according to the TTB. In addition, a wholesaler surrendered its license. The actions stemmed from investigations by the TTB and the California Department of Alcoholic Beverage Control into consignment sales of wine to one or more trade buyers who did not have to pay for the wine until it was sold, according to the federal agency. Two wineries served one-day suspensions: Six Sigma Winery LLC of Lower Lake and Tamber Bey Vineyards LLC of Calistoga, according to the TTB. Four wholesalers also served one-day suspensions: A&M

Wines Inc. of Napa, Monticelli Brothers LLC of Napa, Pavi Wines LLC of St. Helena and MB Vogelzang Vineyards LLC of Santa Barbara, according to the federal agency. In addition Homage Vineyard surrendered its permit, according to the TTB.



#### Napa Valley Vintner Agustin Huneeus Jr. Charged in Connection with College Admissions Scandal

Napa Valley vintner **Agustin Huneeus Jr.** was among the 30-plus parents charged in March in connection with the national college admissions bribing scandal. Prosecutors in Massachusetts alleged parents bribed college entrance officials, coaches and others in an effort to help their children enter elite colleges, according to court filings. The prosecutors also charged coaches, school administrators and a private college counselor based in Newport Beach, Calif. Huneeus, whose family's holdings include **Quintessa**, allegedly participated in the scheme to help one of his daughters enter the **University of Southern California**,

according to court records.



#### **Dave Phinney Plans to Develop Napa Vineyard**

Winemaker **Dave Phinney** plans to develop 83 acres east in the hillside east of Napa. The project is now under administrative review before Napa County officials. The vineyard is slated to be planted primarily in Cabernet Sauvignon for Phinney's **Bloodlines** label. No winery will be built on the property near the famed **Stagecoach Vineyard**, a property of **E&J Gallo**. Phinney will produce Bloodlines at a new winery on Mare Island in Vallejo, south of Napa County. Mare Island is already home to a Phinney distillery project – **Savage & Cooke**. The distillery's tasting room recently opened in a renovated building on the former U.S. Navy base.



## Ten Rabo AgriFinance Locations to Open in California as Mechanics Bank Buys Rabobank N.A.

**Mechanics Bank**, of Walnut Creek, Calif., announced in March plans to acquire **Rabobank N.A.**, of Roseville, Calif., for \$2.1 billion. The combined entity was expected to operate as Mechanics Bank with 144 branches and more than \$17 billion in total assets, according to the announcement. The deal does not include Rabobank's food and agricultural food assets which transfer to **Rabo AgriFinance**, a Rabobank affiliate based in St. Louis, Mo. Ten offices are expected to open in California: Santa Rosa, Chico, Yuba City, Modesto, Salinas, Santa Maria, Fresno, Visalia, Bakersfield and El Centro.



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## Winemakers Discuss Cap Management Regimens

From punch-downs and pump-overs to pulsed air, rotary tanks and more, seven winemakers compare their practices.

#### Lance Cutler

Lance Cutler has been a working winemaker in Sonoma County for 35 years. He has been a contributing editor for *Wine Business Monthly* for more than 10 years. His unique perspective on winemaking has led to our Industry Roundtable series and our Varietal Focus series. Lance is also the author of four books, including *The Tequila Lover's Guide to Mexico*.

**RED WINE FERMENTATIONS CAN** be tricky. There are so many interacting phases. Extraction is key, but it must be controlled. Winemakers look to develop great color while retaining the best fruit characteristics of the varietal. They need to coax out those compounds that lend complexity and mouthfeel, along with enough tannins to give the wine a backbone but not so much that the wine turns astringent or chalky.

 $CO_2$  produced during red wine fermentation pushes the skins to the top of the fermentor, creating a "cap." Since most of the color, flavor and tannins are found in the skins, one of the winemakers' most important jobs is managing that cap to provide maximum extraction of the elements needed to produce the precise style of wine they are hoping to achieve.

The more the skins are kept in solution, the better the extraction of polyphenols, which contribute to color, flavor and tannic structure. The cap heats up more than the juice beneath it. Winemakers need to keep the cap cool and wet and in contact with the juice for proper extraction. Simultaneously, they need to keep the yeast happy enough to complete the fermentation.

Traditionally, the two methods of cap management used by winemakers were punch-downs and pump-overs. Newer methods that incorporate pulsed air, submerged cap or rotary tanks are available, but the quintessential goal remains the same. As **UC Davis** professor **Roger Boulton** explained, "The idea is to keep the interface between the cap and the juice as well mixed as possible. That keeps the temperatures the same and allows for a steady, continuous extraction. That gives the winemaker the best chance of making the key decision, which is when to stop skin contact and achieve the best balance of fruit, middle palate and tannic structure to the finished wine."

VINTUITIVE WINEMAKING TOOLS



If you have been making red wine for any time at all, you are probably familiar with punch-downs and pump-overs. For punch-downs you use some tool (or even your feet) to push the grapes in the cap down into the liquid. This is especially difficult at the beginning of a fermentation, during cold soak, before the grapes have formed a cap above the liquid. Many winemakers are enamored with aqueous extractions before much alcohol is present, feeling that these extractions give deeper color and a softer mouthfeel with gentler tannins, so these difficult punch-downs become a necessary evil, often resulting in sore abdominal muscles for the people assigned to do them.

Pump-overs used to involve hooking a hose up to the racking valve of a tank and pumping the fermenting wine into the cap, like a giant firehose, until it broke up the cap and pushed it down into the liquid. Winemakers realized this method was beating the hell out of the grapes, likely causing harsher tannins to form, so most pump-overs have transformed into gentler, irrigation-type devices in lieu of the firehose.

There are lots of irrigation systems, some even designed in-house by various wineries. One popular device is called The TOAD. It is designed to radially distribute liquid evenly over a tank's interior. Its advertising claims, "It will not 'bruise', will not clog and that its consistent coverage over wine must

results in better extraction of phenolic, odor and flavor compounds." It can be used in-line or hooked up with clamps. When used in conjunction with a venturi system, it can also provide much needed oxygen to the fermentation, which helps keep the yeast happy and active.

Lisa Amaroli is director of winemaking, North Coast for **Benziger Family Winery**. "When I have grapes with integrity, I like to work the grapes on the front-end of a fermentation. If I do a four-day cold soak and I can keep the berries in contact with the juice, I can extract softer tannins with plenty of color."

One problem Amaroli recognized was that punch-downs and pumpovers, especially in the beginning, tended to smash grapes and tear the skins. She was looking for a better, gentler way to keep the berries in contact with the juice throughout cold soaks and during the beginning of active fermentation. They had been using The TOAD with pumps and a venturi to keep the cap soaked up and oxygenated. Working with winemaker **Terry Nolan** in the 1990s, Amaroli developed a tool called the "Festivus for the Rest of Us." They wanted to lessen harsh tannic extraction from skins and green seeds during fermentation, but keep things moving and oxygenated for the benefit of the yeast.

The Festivus was a stainless-steel pipe that they could push through the cap and into the fermenting juice. They would push it deep enough so that the



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#### Winemakers Discuss Cap Management Regimens



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"Our goal was to achieve uniform, even coverage, using gentle splashing and no splatter. We wanted something that was adjustable for flow and tank size, and it had to handle whole berries without clogging."

Evan Schneider, Vintuitive Winemaking Tools

VINTUITIVE WINEMAKING TOOLS

compressed air entering the juice would mix the wine under the cap, keeping the cap moist and feeding the yeast.

**Evan Schneider** is a mechanical engineer with degrees from both **MIT** and **Stanford**. He became friends with **Alex Mitchell**, the owner of **York Machine Works**. They partnered to form **Vintuitive Winemaking Tools LLC**. Their LOTUS pump-over head was designed to gently and uniformly distribute juice—even if that juice is unfiltered or mixed with berries—over the caps of any sized tank.

"Our goal was to achieve uniform, even coverage, using gentle splashing and no splatter. We wanted something that was adjustable for flow and tank size, and it had to handle whole berries without clogging," Schneider said.

Schneider's experience with 3D printing allowed him to make design changes, print out models and then test them with water to check how well they were working. The unit hooks up to standard Tri-clover fittings and occupies a small head space that allows winemakers to fill up their tanks more than other pump-over set-ups. The unit is continuously adjustable, has few moving parts and is easy to install and clean.

#### Automating the Pump-over

No matter how you go about your punch-downs or pump-overs, they take time. Depending on the stage of your fermentation, these operations are performed two to three times daily. During harvest, when dozens of tanks are fermenting simultaneously, wineries often employ a couple of people to do nothing more than perform these operations all day. That type of labor requirement is expensive and time-consuming, so many wineries are automating their systems.

**Matt Crafton**, winemaker for **Chateau Montelena**, had worked with Alex Mitchell. When introduced to the LOTUS, he was fascinated. "They were thinking outside the box to create and innovate. They had terrific design pedigrees, worked with state-of-the-art 3D printing, and the model was fluid and dynamic. I like to support that type of creativity."

Crafton outfitted the entire cellar at Montelena, purchasing 30 dedicated devices. Mitchell and Schneider customized each LOTUS to work in each individual tank based on size and configuration. Crafton put in a dedicated automation system. Each tank had its own pump with a **TankNet** controller, which allowed the winemaker to program frequency and duration of the pump-over based on temperature, time or other factors. The pump was hard-lined to the LOTUS, which distributed the juice on top gently, with thorough coverage.



"LOTUS is the perfect blend of theory and application. It's unique and does one thing extremely well. It is reliable and easy to clean," Crafton said.

Back in the day, winemakers used to control tank temperatures during fermentation manually. Every few hours you'd take a sample from the tank, check the temperature and then open or close a valve connecting that tank to your cooling system. It took a lot of time, was not terribly accurate and made a full night's sleep almost impossible. As time went on, winemakers were able to install tank-mounted thermostats, which electronically opened or closed those valves and better regulated tank temperatures.

These days, if you want to automate your cap management system, then you need some type of controller. There are several companies that produce tank controllers for wineries. **Paul Egidio** is president of **Acrolon TankNet**. They can provide tank-mounted or custom Programmable Logic Controllers. These controllers not only regulate tank temperatures, but they can give web-based access, with remote alarming if something goes wrong.

The device can turn pumps on or off and modulate speed. It logs data, such as Brix, temperature, and when valves are opening or closing, and comes with software that can tie into other systems. There are real-time monitors and relays for pump-over, micro ox, controlling spray patterns, timing and duration.

Egidio said, "Increasingly, TankNet customers, from boutique and super-premium wineries all the way to **E&J Gallo** are adding pump-over automation to their temperature control systems. (It's a trend that's been

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#### Winemakers Turn to Pulsair for Tannin Management

**Nick Goldschmidt** is the owner/winemaker of **Goldschmidt Vineyards**. Before that he was executive winemaker for **Allied Domecq Wines** (**Clos du Bois, William Hill, Mumm Napa, Buena Vista, Atlas Peak, Callaway** and **Haywood**). He's worked in California, Spain, Argentina, New Zealand and Portugal and oversees production of 2.5 million gallons in the U.S., alone.

Goldschmidt focuses on cap management because it allows him to dial in the style of a wine so that it matches the vineyard. When he has a vineyard that provides fruity, less tannic fruit, he may ferment hotter, trying to maximize tannin extraction to balance that fruitiness. Conversely, a vineyard with tannic fruit might be fermented at cooler temperatures to preserve fruit character and slow tannin extraction. Manipulating the cap more or less aggressively also contributes to that same "dialing in" process.

Goldschmidt has experience with many different cap management systems. He likes rotary tanks but says they are tricky. You can't rotate too often, or you will over-extract the fruit. He has used **Pulsair** a lot. "I really like the Pulsair system. It is a very gentle and effective way to break up the cap and circulate the juice, especially at the beginning of a fermentation. Just three or four pulses do the job." Once the wine is fermenting, Goldschmidt switches to traditional punch-downs, fearing that the Pulsair might mix things too well, extracting unwanted tannins.

**Charlie Parks**, director of marketing for Pulsair, described it as "a system of cap management that sequentially injects large, compressed air or gas bubbles underneath the cap. The rising air bubbles push the juice into and over the top of the cap, which separates the cap, freeing the individual berries. Some winemakers call it a 'reverse punch-down.'" He described the system as labor efficient and much faster than regular pump-overs. It releases trapped CO<sub>2</sub>, heat and reductive aromas.

Pulsair can operate through moveable open-top probes for small tanks and fermentors. It can also operate through a ball valve/racking port at the ground level of a tank. For larger tanks multiple air injection ports, through the sidewall or up through the bottom, are available. Pulsair offers fully-automated, multi-tank network controllers or mixers for individual tanks. They also offer on-site start-ups and training.

Josh Maloney consults for five different wineries and operates Maloney Wine Company. He has used Pulsair as a single unit through a valve, as well as multiple ports in tank bottoms. "This Pulsair technology is the most important tool for tannin management in decades," he stated. "Used properly, it effectively breaks up the cap and homogenizes the fermenting tank. I like to use the Pulsair early in a fermentation, less in the middle and then again at the end. I find that type of usage front-loads the palate with fruit and still provides a long finish."

Maloney said that Pulsair can be an effective tool with a great impact on wine in all price ranges. In wines selling under \$20 a bottle where consumers may not expect structure and length on the finish, using Pulsair early works perfectly to shape tannins and soften mouthfeel, he said. The process redistributes heat rapidly, which leads to faster extraction, especially in larger tanks. For large wineries trying to push fermentations, this can lead to better efficiency.

"Pulsair can be a very effective tool for winemakers, but you have to be careful, taking into account the varietal, vineyard and tank size." He cautioned. "If you are not paying attention, you can over-extract tannins and put your wine out of balance."

**Richie Allen**, director of viticulture and winemaking at **Rombauer Vine-yards**, uses LOTUS *and* Pulsair for his red wine fermentations. He especially likes LOTUS in his smaller tanks (those less than 7 tons) because the device is light, easy to move and provides great coverage. In the beginning he would move the LOTUS from tank to tank, but he has now gone fully automated. Each tank has its own centrifugal pump. A screen in the tank allows the wine to travel up a pipe, past a venturi and to the LOTUS. The system is run by TankNet. It allows Allen to set time, duration, frequency, pump speed and volume for each tank.

In addition to using the LOTUS, he will use Pulsair twice, during each fermentation, as well. He has a moveable system that he moves to his various open-topped fermentors. He will give a couple of pulses to completely break up the cap. "It's sort of like délestage for cheaters," chuckled Allen. When asked if he ever worries about getting too much phenolic extraction using both systems, he explained they use **WineXRay** for rapid, real time phenolic analysis on a daily basis. "Not running phenolics and knowing how to use that information is just wasting your owner's money," Allen volunteered. "If you are a winemaker and don't know this, you need to go back to school."

#### To Cap it Off

Cap management for red wine fermentations is critical for determining style in a finished wine. How a winemaker works those grapes in the fermentor has a great effect on color, mid-palate mouthfeel and finish. Strides have been made in the type of equipment available to winemakers to manipulate the cap. Two general trends have emerged: first winemakers have chosen to use equipment that is gentle in its mixing of the cap, and second, they are moving more and more into automation.

Deciding which technologies to use for cap management remains a personal decision for winemakers. Traditional pump-overs, punch-downs and délestage are proven techniques that have worked well for winemakers for many years. New equipment and methodologies are available that give winemakers more control in manipulating caps and extracting phenolics. Recently winemakers have gained the ability to analyze phenolic data almost instantly to inform their decisions regarding extraction and length of time on the skins.

Automation has become more sophisticated. Tanks can be outfitted with controllers, dedicated pumps, venturis and irrigation devices. Winemakers can set flow rates, length of pump-overs, timing frequency and then send information regarding Brix and temperature to a software program on their phones. During the frantic weeks of harvest, automation can lessen labor costs and relieve some winemaker anxiety.

Clearly, automation is becoming more prevalent in modern winemaking. The ease and security of automated systems that help with cap management are seductive. Before winemakers jump all in, they might want to heed the words of Nick Goldschmidt, who has first-hand knowledge at wineries all over the world, both big and small. "Automation can be difficult for main-taining quality. I think winemakers need to visit their tanks at least twice a day to taste and monitor fermentations. After all, tasting is our job." WBM

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## Technical Spotlight: Viader Vineyards & Winery

A wise woman built her wine business on rock...and continues a 30-year legacy.

#### Stacy Briscoe

IN THE MID-1980S, an Argentinian-born mother of three immigrated to America from her second home in France. Children in tow, she pursued a post-graduate degree in advanced business studies at the Massachusetts Institute of Technology, Boston. Through connections with the Berkeley Lab, she found herself traveling to California quite often. During one of these "jaunts," she visited Napa Valley for the first time and immediately fell in love: "The vineyards, the hills, the familial energy of the community. If I closed my eyes and imagined the ideal setting to raise a family—this was it," said Delia Viader, founding winemaker and owner of Viader Vineyards & Winery. Viader said it was sheer luck that "a friend of a friend" presented an opportunity for her to buy the property that would become her estate vineyard and winery, shortly after she discovered the idyllic countryside setting. "I will never forget my father's expression of concern when I asked for a loan to cover the down payment," she said. "'After all the money I poured into your education, all you want to become is a farmer?"" he said.

Viader's father did help her with the down payment, but did so only after she could provide him with both short and long-term business plans. "Little did he know what that investment would mean for the future of my family here in Napa Valley," she said.

**Stacy Briscoe** joined *Wine Business Monthly* in 2018. She has been writing about wine professionally since 2015, freelancing for multiple publications including The *San Francisco Chronicle*, Edible Communities and *Napa Sonoma Magazine*, among others. She also maintains her own website, *BriscoeBites.com*, dedicated to wine reviews and tasting notes. Outside of wine writing, she also contributes as a freelance editor for the independent publisher She Writes Press. Stacy has a Bachelor of Arts degree in English-Language Literature from the University of California, Santa Cruz.

#### Daring to be Different

When Viader came to Napa in the mid-1980s, it was still an up-and-coming region. Most of the Valley floor had been cleared and planted to winegrapes, but very few grapegrowers dared to plant along the mountainside.

The Viader Vineyards & Winery estate is located on the foothills of Howell Mountain, ranging from 600 to 1,300 feet in elevation, with the vines planted on a steep, 32 percent grade, filled with volcanic loamy soils. "Everyone told her it was too steep, too rocky, too hot," said **Alan Viader**, Delia Viader's son and current director of winemaking and vineyard manager, during a tour and interview with **Wine Business Monthly**. "The few people who said it could be done told her she'd have to terrace it."

Delia Viader said that at that time in California, terracing hillside development was the norm; vines were most commonly planted with a spacing of 8 to 12 feet between rows—regardless of soil composition, vineyard orientation or geographical considerations.

But Delia Viader believed manipulating the land that way would ruin the balance of the soil's texture and profile. So, despite "naysayers," she followed the examples of the successful foothill plantings she'd seen thrive in many French vineyards. "An east-west row orientation on a west-facing hill is as common in Europe as you would have it," Delia Viader said.

Alan Viader explained that for their particular location, the vertical, eastto-west planting makes the most sense: during the peak summer heat, around mid-July, the most intense sun exposure happens right above the vines. "The berries are shaded by the canopies, acting like an umbrella," he said. There's a balanced, less intense exposure during the rising and setting sun hours, allowing grapes to ripen evenly from all sides. The vineyards at Viader Vineyards & Winery are also densely planted in 5x4-foot rows—another technique taken from the Motherland: "High-density planting was done all over Burgundy. We did it too because it made each vine go deeper and work harder to survive, resulting in smaller berries with potentially more concentration," Delia Viader noted.

She elaborated, saying that with the rocky soils and topography, the compact planting design allows for 99.9 percent retention of top soil once planted. "The vines survive on an average of 8 inches of soil and red volcanic rock," she said. The Viaders also grow their vines shorter, with fruit wire closer to the ground, trapping the heat in the volcanic rock and allowing the grapes to continue to ripen well after sunset. "All in all, we gain full maturity up to two weeks ahead of most of our neighbors," Delia Viader said.

Though this was a novel farming concept in early 1980's Napa, Alan Viader said he now sees grape growers following Delia's example, planting in an east-to-west direction along the vertical grade of the mountainside. "I don't know if it was because they were afraid of erosion, or maybe it was just more traditional...A lot of vineyards planted 30 years ago are now coming up for replanting, and you can see vineyards that were planted north-to-south now planted east-to-west, regardless of the hillside," Viader noted.

#### **Key Points**

- Bordeaux-inspired vineyard management and winemaking
- Compact vine orientation on rocky soils yields concentrated grape flavors
- Extremely extended maceration enhances complexity of wine
- Variety of tanks—stainless, concrete and oak—used for varietal specificity

#### Technical Spotlight: Viader Vineyards & Winery



/IADER VINEYARDS & WINERY

#### **Continuing Education**

Looking back 30 years later, Delia Viader admitted the whole process purchasing land, planting vines, planning a winery—was quite risky, especially given her one, not-so-minor "handicap:" She didn't know the first thing about vineyard management or winemaking.

Her initial interest in wine came from drinking wines from her favorite region, the Left Bank of Bordeaux. "I'm inspired by the way these producers, in particular, pay attention; they 'listen' to the soil and the vines, and they are observant and respectful of every minute detail with passion," Delia Viader said. Passion she had; formal education and training, she did not.

So when she decided to pursue her new life as a vintner, she attended every class available to her atthe **University of California**, **Davis** and hired the best consultants she could find, both locally and internationally.

She worked alongside **David Abreu**, a seasoned viticulturist, who specifically assisted with the hillside development; **Tony Soter**, then the consulting winemaking for **Spottswoode**, lended his winemaking expertise; **Danny Schuster**, a New Zealand-based vineyard consultant, taught Delia about organic hillside winegrowing; and **Jean-Claude Berrouet** and **Michel Rolland**, Bordeaux-based winemakers, came to Napa to teach her their traditional winemaking methods.

In 1986, Delia planted her first 12 acres of vines to 60 percent Cabernet Sauvignon and 40 percent Cabernet Franc. Her first wine, released in 1989, was a blend with the same percentages. "That was 30 years ago so that was a big statement back then," Alan Viader said. "Everyone around us was only planting Cabernet Sauvignon."

When asked about her choice to plant Cabernet Franc during this time and in this place when Cabernet Sauvignon was truly king, Delia responded, "If that is the case, to me, Cabernet Franc is queen, and a very elegant and refined one when perfectly adapted to the soil and terroir. Cabernet Franc brings a beautiful floral bouquet and a quasi-cashmere texture to a well-structured, mountain-grown Cabernet Sauvignon like ours."

#### Vineyard Management

Today, Viader's estate vineyard is planted to nearly 30 acres of vines and now includes Petit Verdot, Syrah and Malbec. But many of those original Cabernet Sauvignon and Cabernet Franc vines remain.

"I'm not a believer that vines need to be ripped out after a certain age if it's still producing," said Alan Viader, who became a part of the vineyard management team in 2002. "Once a vine reaches a point where it's no longer producing or about 90 percent dead, then I'll rip it out. But it's a meticulous selection process every year."

Viader said his mother ingrained in him at a young age the importance of terroir. "She would pour me a little bit of wine at the dinner table and not just say, 'This is red' but, 'This is from the Left Bank, with this kind of soil. Do you taste that in the wine?" So for him, as for Delia Viader, the most important work happens in the vineyard. "My day starts in the vineyard, and my winemaking philosophy is the wine is made there," he said.

#### **Organic...Kind Of**

"We're not 100 percent organic, but we are mostly organic," stated Alan Viader. To him, organic isn't always the "silver bullet" for everything in the vineyard. "There's a mentality out there that organic farming is chemical-free farming, but there are some nasty organic chemicals that are worse than some conventional ones," he said.

Organic chemicals Viader does use include oils to help smother problematic insects at the beginning of the growing season and copper, which he finds helps with bloom and set during the cooler, rainy seasons, as well as acts as a natural fungicide.

Viader does use Sulphur as he finds it is the most effective fungicide. He meticulously times these sprays based on weather, humidity and his spore trap, purchased through **Coastal Viticultural Consultants** in Angwin, California, that provides a weekly count of mildew spores in the air. "I time my sprays when there's the most active population, so I end up spraying less," he said.

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#### **Technical Spotlight: Viader Vineyards & Winery**



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Because the Viader Vineyards & Winery estate is comprised of welldraining volcanic rock and experiences extreme heat and wind exposure, the vines are naturally stressed. While this is a benefit to the hearty grapes grown along the estate, Viader said it's important to maintain a balance. "If the vines get too dry and too hot, the wine will come out much leaner," he noted.

So, Viader keeps sensors connected to the vine that tell him how much water stress his vines experience and a drip irrigation system to meter exactly how much water each vine needs. "I don't have an abundance of water, so I need to make sure that I'm watering at the exact time in the exact space that needs it the most," he said.

He's also implemented organic compost teas into the irrigation system to help build up the biology in the soil. Using these teas, Viader said he has noticed the vines don't require as much water and are less affected by the inevitable Howell Mountain summer heat spikes.

#### **Biodynamic...ish**

Viader Vineyards & Winery had been certified biodynamic between 2001 and 2007, but both Delia and Alan Viader agreed they didn't see any tangible improvements that could qualify maintaining the strict guidelines of the certification. "But I still focus certain vineyard decisions around the biodynamic calendar," Alan Viader added.

Viader said he can see the difference in vine growth, depending on the cycle of the moon, whether a vine grows upward or down toward the earth. This is most evident—and most important—during pruning: "Vines are a constant flow of sap, which is very watery, and the moon cycles affect water," Viader said. "We can see when the moon is rising, when we cut; we can see the sap flow, and the vine will tear up. But if the moon is descending and we cut, it's dry because of all the pressure pushing it [water] down." This, he said, is when the vines become more susceptible to diseases in the air and pathogens, like fungus.

Other sustainable practices include increasing the population of beneficial insects to help eliminate the need for pesticides; raptor roosts and falcon kites to help patrol the property for rodent, snake and pest bird infestations; and solar paneling to power precision viticulture sensors, such as the sap flow sensors, Tule evapotranspiration sensors and spore trap collectors.

Viader Vineyards & Winery is certified Napa Green Winery, Napa Green Land and LandSmart Certified.

#### Harvest and Winemaking

The Viaders' 30 acres of vines are planted with 2,200 vines per acre, oriented in the compact 5x4-foot spacing. The winery approximates this is about four times the average planting density. That, in combination with the steep hill grade and rocky soils, means the vineyard has, what Alan Viader calls, "equipment challenges." Even their tractor can only travel about 70 percent of the estate.

So harvest at Viader Vineyards & Winery is literally a hands-on project and, to use Delia Viader's words, very labor-intensive. It's a slow, meticulous process that lasts as long as six or more weeks, from August through November. "I do a lot of fine-tuning during harvest at a slow, even pace," Alan Viader said, explaining that he'll pick one specific block, or portion of a block, each week, removing leaves and bad fruit in the field as he goes.

Though he has a **Bucher-Vaslin** vibrating sorting table he uses, Viader doesn't want sorting to be a "huge elaborate process." "We also do a green harvest two or three times before harvest...so in theory everything that's left should be harvested and should be top quality," he said.

Viader estimates he brings in about 2 tons per acre each harvest, an average of 75 tons total. The main estate blends, VIADER Signature (Cabernet Sauvignon and Cabernet Franc), VIADER "V" (Petit Verdot and Cabernet Sauvignon) and the VIADER "Black Label" (Cabernet Sauvignon, Syrah, Malbec and Cabernet Franc blend) are made from all-estate fruit. The winery's new Homenaje blend (Malbec and Cabernet Sauvignon)—and certain vintages of the Viader DARE (single-varietal Cabernet Franc)—use select blocks from trusted source vineyards.





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#### Viader Vineyards & Winery

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OWNERS/PRINCIPALS: Delia Viader, founding winemaker, owner; Alan Viader, director of winemaking operations, vineyard manager

YEAR FOUNDED: 1986 YEAR BONDED: 1989 DIRECT-TO-CONSUMER SALES: 96% WINERY CASE PRODUCTION: 4,000 AVERAGE BOTTLE PRICE: \$150

#### Vineyard Info

APPELLATION: Napa Valley VINEYARD ACREAGE: 30 VARIETIES GROWN: Cabernet Sauvignon (17.1 acres) Cabernet Franc (7.4 acres) Syrah (1.2 acres) Petit Verdot (1.1 acres) Malbec (<.1 acres) ADDITIONAL VARIETIES PURCHASED: Malbec (Oak Knoll district, Napa Valley) SOIL TYPE: Volcanic — Forward-Aiken series SUSTAINABILITY CERTIFICATIONS: Napa Green Winery Napa Green Vinery

Napa Green Land LandSmart Certified

#### Building the Winery

YEAR BUILT: 1998

3,500-square-foot building

15,000-square-foot cave

ARCHITECT: Richard MacRae, MacRae Architects, Sebastopol, CA GENERAL CONTRACTOR: Total Concepts, Santa Rosa, CA, Totalconcepts.net ENGINEER:

Summit Engineering, Santa Rosa, CA, Summit-sr.com

Zucco Civil Engineering, Santa Rosa, CA

LANDSCAPE ARCHITECT: Richard Beridge, St. Helena, CA

MECHANICAL ENGINEER: Summit Engineering, Santa Rosa, CA, Summit-sr.com LIGHTING: JNB services, Omaha, NE

FLOORING/DRAINS: Bazzoli concrete, Calistoga, CA



BOB MCCLENAHAN

#### Cave

SUSTAINABILITY CONSULTANTS: Phillippe Armenier (Biodynamics 2001-2007) Charles Schembre, Resource Conservation District (RCD), Napa Valley Bob Gallagher, Crop Care Associates, PCA Napa Valley Vintners staff WASTEWATER: Summit Engineering, Santa Rosa, CA, Summit-sr.com

#### Making the Wine

VIBRATING SORTING TABLE: Bucher-Vaslin, Bvnorthamerica.com DESTEMMER: Bucher-Vaslin Delta E2, Bvnorthamerica.com PRESS: HYPAC, hydraulic basket press, Hypacwineryequipment.com CONCRETE TANKS: Nomblot, Wine-tanks.com VINIFICATION BARRELS: Tonnellerie Sylvain, Tonnellerie-sylvain.fr PUMPS: Waukesha 130 for racking, filling Centrifugal pumps for automatic pump-over systems BARRELS: 100% French Oak (Taransaud, Sylvain, Dargaud Jaegle, Baron, Darnajou) BARREL RACKING: Bulldog Ozone, McClain Ozone cart, Mcclainozone.com

#### Packaging

BOTTLING LINE: GAI 1201 "monoblock bottling line," Gai-america.com GLASS: Saxco (Demptos Glass), Saxco.com CORKS: MA Silva 1by1, Masilva.com Portocork ICON+, Portocork.com CAPSULES: Rivercap, Rivercap.com LABEL DESIGNER: Chuck House, Icondesigngroup.net LABEL PRINTING: MCC, Mcclabel.com LABELING MACHINE: ENOS T3 labeling machine, Enositalia.it SHIPMENTS: Self-fulfillment

CASE GOODS STORAGE: Tower Road Warehouse



For the first 10 years, Delia Viader's wines were made at **Rombauer Vineyards** in St. Helena. Today, winemaking takes place in the estate's caves, which were built in 1997 by **Alf Burtleson**, modeled after the underground caves commonly seen in Bordeaux.

"Caves produce the perfect bacteria, the perfect humid environment," said Delia Viader. She noted that her estate is a particularly idyllic setting for caves: with its western exposure and 1,300-foot altitude, the humidity is consistent year-round. Furthermore, temperature fluctuation inside the cave is no more than 2° F while the external temperature can swing as much as 50° F.

After the hand-harvest, grapes go into a Bucher-Vaslin Delta E2 destemmer and then immediately put into tanks for an extremely extended maceration process: anywhere between 60 to 70 days, which includes a three- to four-day cold soak. "My record is 72 days," said Alan Viader, laughing at his own well-practiced patience but explaining that he feels he gets more depth of character and better quality wines from his grapes with this process.

Grapes macerate in one of the winery's 25 tanks, which include 13 stainless steel, eight concrete, three vinification barrels and one concrete egg.

#### **Stainless Steel**

Before Alan Viader stepped in as lead winemaker in 2006, Viader Vineyards & Winery had just 10 3,000-gallon stainless steel tanks. These original tanks are complete with glycol jacketing and automatic pump-overs. But since then, Viader has brought in three 1,000-gallon conical stainless steel tanks, sourced from an importer in Slovenia. ("No one else makes them like this," he said.) The benefit to the conical shape, according to Viader, is that it allows for more extraction and keeps the cap down about 6 extra inches



STACY BRISCOE

compared to a "normal" stainless steel tank. The conical tanks don't have automatic pump-overs (yet), so any cap management must be done by hand.

Viader finds stainless steel ideal for his Cabernet Sauvignon and Malbec. "Cab is big and chunky and powerful with more tannin," he said. "It needs more fruit or at least the perception of more fruit to balance it out." Similarly, he finds that stainless steel improves the fruit aromatics of his Malbec as long as he doesn't "heat it up or work it too much."

#### Technical Spotlight: Viader Vineyards & Winery

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#### **Burgundian Concrete**

The Viaders have been using concrete fermentation tanks since 2004. Today, the winery owns eight concrete tanks: three 1,600-gallon cube tanks, four 1,000-gallon conical tanks and one 160-gallon concrete egg—all purchased from **Nomblot** in Burgundy. Alan Viader prefers the concrete tanks from Burgundy, as their unique composition makes his wines a bit more "special." "It's what's in their sand—a bit more limestone that adds a good minerality," he noted.

The main motivation to include concrete in the winemaking program at Viader Vineyards & Winery is the Cabernet Franc. Viader said the concrete highlights the grape's innate floral quality, creating an essence of perfume in the wine, as well as adding a sense of minerality on the finish that gives the wine more excitement, more character.

Viader also ferments his Petit Verdot in concrete ("If you lose that fresh, live floral quality, Petit Verdot can get a little clumsy," he said), as well as his Syrah.



BOB MCCLENAHAN

Syrah is the only grape that undergoes whole-cluster fermentation, and does so at a higher temperature. While the rest of the grapes sit in tank at 70° F to 80° F, Syrah will ferment between 80° F and 90° F. "At the higher temp, you're extracting from the seeds, the skins break down, and you're also burning off all those volatile aromatics," Viader noted.

The concrete egg is reserved for premium lots of Cabernet Sauvignon. Viader drains a portion of the selected Cabernet Sauvignon, from stainless steel, during the last one-third of the initial fermentation process directly into the egg, allowing the wine to complete fermentation sur lies for two to three weeks. The wine in the egg ferments at a cooler temperature, thus at a slower pace. The results, Viader said, are vibrant aromatics and a softer, rounder mouthfeel. Meanwhile the juice left in the stainless steel tank becomes very concentrated, intensifying its severity of flavors, as a smaller-volume of juices maintains contact with the skins. "It's almost like a double *saignée*, if you will," Viader said.

#### **Vinification Barrels**

Viader also uses vinification barrels for certain blocks of Cabernet Sauvignon, which will ferment *sur lies*, for over a year. The three 500 L barrels, sourced from **Sylvain Cooperage**, is an "experiment" Viader introduced into his winery in 2017. "I had the best Merlot of my life from one of these when I was in France, so I *had* to try it," he said.

Thus far, Viader said he's enjoying the integration of the oak and freshness from the cooler fermentation process. He finds the tannins are smoother and silkier than his tank-fermented Cabernet Sauvignon. Though the wine is not as concentrated or powerful, it does have a more impactful mid-palate and a longer finish, as well as a more aromatic expression overall.



#### Slow and Steady from Press to Bottle

Once natural fermentation kicks off, Viader will inoculate with various yeast strains, depending on the variety. "I experiment with different strains," he said, but wouldn't divulge which strains those were.

After the wines' slow, progressive maceration, it is then pressed in the winery's **HYPAC** hydraulic basket press. Again the process is slow, methodical, with each separate lot undergoing a 24-hour press cycle. Viader said that because of the extended time in tank with once-weekly pump-overs or punch-downs, the grape skins are already mostly depleted and mixed in with the juices. Thus, he finds the pressed juices are often "good enough" to go back into barrel with the lot's free run. "It [pressed juice] is not inferior wine, in my opinion," he said.

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#### **An Entrepreneur's Journey**

Within the last 30 years, Delia Viader has immigrated, raised three children, changed careers, spearheaded her own business and is now one of the most celebrated women in wine. To mark her three decades of fine wine growing and to leave a legacy to her grandchildren and future generations of the Viader family, the matriarch has published her memoir entitled *Daring to Stand Alone: An Entrepreneur's Journey*.

The book begins with a brief overview of Napa Valley history, setting the scene for the place Delia Viader eventually calls home. After learning a bit about her background—her Argentinian upbringing, her move to France and eventual immigration to the U.S.—the memoir then dives deep into Viader's winemaking adventure on the foothills of Howell Mountain. She discusses the importance of the terroir, her connection to European-style vineyard management and winemaking and how, despite every difficulty, she ultimately built (both literally and figuratively) a successful wine business that she now passes on to the next generations. "I look forward to seeing my kids take this cherished little piece of heaven, and move forward, taking what I created as their own creation and in time, in their own ways, moving forward." —Delia Viader, *Daring to Stand Alone*.



VIADER VINEYARDS & WINERY

Continuing to stay in its separate lots, all wine ages in French oak barrels for at least 14 months and up to two years at Viader Vineyards & Winery, using various coopers, including **Taransaud**, **Sylvain**, **Dargaud Jaegle**, **Baron** and **Darnajou**. "I'm very strict with oak quality," said Viader, going on to say a cooper has to really "prove himself" before becoming a permanent part of the winery's barrel program. That being said, he's constantly experimenting with new coopers and is currently running three different barrel trials in the caves.

During its time in barrel the wine will go through secondary, malolactic fermentation and is racked once, at most, during the aging process, using bulldogs with nitrogen to prevent oxygen intervention. "I'm really hands-off once the wine is made. I want to let the wine evolve on its own, let it mesh with the barrel," Viader said.

Viader may be hands-off, but he's palate-on, constantly tasting through the various lots, to learn how the wine is evolving. So blending can take place as soon as three months after harvest or as late as three months before bottling. "It's all based on taste," he said.

Once the final blends are made, the wine will continue to sit in barrel until bottling, which takes place in-house at Viader Vineyards & Winery.

The winery purchased its **GAI** 1201 monoblock bottling line in 2004 because, according to Alan Viader, the best bottling lines would book quite quickly and often wanted to bottle much faster than Viader and his team were comfortable with.

"This bottling line is a lot slower. It takes four days to bottle the same quantity those companies would bottle in one day. But I like that. I can do it at my own pace," Viader said.

The wine will age further in bottle for about one year before it's officially released. Labeling, packaging and fulfillment are all done in-house. **WBM** 

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



#### Automation, AI and Robotics, Oh My!

One of the recurring themes that I have been seeing at the annual **Unified Wine and Grape Symposium** (UWGS) has been repeated attempts at finding a technological solution for various winemaking tasks. There are other examples, but something like the entire automated optical sorter category comes to mind as a recent example of a "new technology" that has been making inroads into the mindshare of the industry.

Automated optical sorters aren't a particularly new idea. The frozen food industry has been using them for decades. Something like 15 or 20 years ago, I was approached by the British manufacturer of frozen food optical sorters to advise them about how they could break into the wine industry. Unfortunately, and unsurprisingly, I had to point out that grapes off a destemmer have rather different physical properties, and were a good deal wetter and more acidic, than flash-frozen vegetables. Neither their sorter nor the software it used, were up to the task without extensive redesign and modification. None of these differences were insurmountable, but the expenditure needed to adapt their (then current) offerings to handling destemmed grapes was more than they thought our relatively small and fragmented industry justified.

Today, that company remains a leader in automated optical sorting, it took other companies that are more accustomed to building equipment for the wine industry to produce optical sorters that we can use.

The somewhat winding path that automated optical sorters have taken toward adoption stands as an example for a lot, if not most, of the "new technology" takes in order to get adopted by the wine industry. New technologies are usually not invented *for* the wine industry but are instead adapted from other industries and therefore usually have to undergo a significant period of adjustment and modification before we can really use them.

I am no techno-utopian, but neither am I an unthinking luddite that pines for some mythical golden age of winemaking where wine was an accidental miracle that Dionysus granted us each harvest. Technology is a tool. Any tool is only worth using if enables the winemaker to do better and shouldn't be adopted merely on the strength of its novelty. Of course, "better" is in the eye of the beholder. Different people will put different priorities on the relative attributes of higher quality, less time or lower cost. Like any winemaker, I have to keep an eye on the cost and time, but for me the tools that allow me to make better wine are the most interesting.

Some of the products that I saw at the UWGS tended to emphasize their automation, but it's their potential for better wine quality that makes them cool.



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### Cool Products \_\_\_\_

at the Unified Wine & Grape Symposium

### G3: RoboBottle

The RoboBottle from the **G3 Open Innovation Lab**, a division of **G3 Enterprises**, is a tool to aid bottling line mechanics in setting the line for a particular bottle shape. At its core, a RoboBottle is a set of sensors and a small computer in a bottle-shaped package.



**WHAT'S COOL:** With its associated app, called BottGuide, the G3 Robo-Bottle gives bottling line mechanics near-realtime feedback and advice for setting up and maintaining screw cappers.

FOR MORE INFORMATION CONTACT:

G3 Open Innovation Lab (wineiot.com/robobottle).

### Logics & Controls: LogiClosure

The LogiControl is an automated inspection system to check whether screw caps were applied correctly. This system is the perfect companion to the G3 RoboBottle.



**WHAT'S COOL:** The LogiClosure system uses a computer AI to do the sort of mind-numbingly repetitive task at which computers excel but humans are lousy at doing.

**FOR MORE INFORMATION CONTACT:** Collopack Solutions (*www.collopack.com/packaging-equipment/line-inspection/*).

### Kikkoman: LuciPac A3

The LuciPac A3 is a luciferase-based instrument for determining if a surface has been properly sanitized by measuring the levels of adenosine triphosphate (ATP), adenosine diphosphate (ADP) and adenosine monophosphate (AMP). ATP is the energized form of adenosine while ADP and AMP are de-energized forms. ATP molecules are the power cells of life.

The concept behind the device is pretty simple. A swab is used to wipe a "clean and sanitized" surface that contacts food or, in our case, juice, must or wine, like the inside of a tank or a pump. Residual ATP on the surface is picked up on the swab. When the swab is inserted into the detector, the enzyme luciferase reacts with ATP and emits light. The amount of light emitted corresponds to the amount of ATP present.



**WHAT'S COOL:** The LuciPac A3 system by **Weber Scientific** is relatively inexpensive and accurate. The detection of the dephosphorylated adenosines (ADP and AMP), as well as ATP, means that the LuciPac A3 has a much lower detection threshold than its current competitors. This should mean that the LuciPac A3 system is less prone to false-negative results than other detectors.

#### FOR MORE INFORMATION CONTACT:

Weber Scientific (*www.weberscientific.com/a3*).



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### Cool Products \_\_\_\_\_

at the Unified Wine & Grape Symposium

### The Hamilton Company: Process ORP Sensor

The Process ORP Sensor by **The Hamilton Company** is used for measuring oxidation-reduction potential. Process sensors differ from laboratory or

bench-top analytical instruments in that they continually measure whatever they're supposed to throughout the day.

**WHAT'S COOL:** Process sensors are meant to be mounted in a tank to provide real-time measurements. In



addition to tracking trends over time, this gives a winemaker a much better idea of just how specific winery operations, like a pump-over, impact the oxidation-reduction potential of a must during fermentation.

**FOR MORE INFORMATION CONTACT:** The Hamilton Company (*www.hamiltoncompany.com/process-analytics/winemaking-sensor-demo*)

### CITF: Alien

The Alien from **CITF** is an automated optical grape sorter that, instead of using jets of air to blow MOG (material other than grapes) out of a falling stream of grapes, uses robotically actuated vacuums to suck MOG off a conveyor. The Alien has been getting a lot of press recently, but I wanted to mention it since it did receive a Silver Award at **Vinitech-Sifel** last November. Also, the Alien just looks cool when it is in operation.



**WHAT'S COOL:** The CITF Alien has a pretty high "gee-whiz" factor when watching those arms in operation as they suck up MOG.

#### FOR MORE INFORMATION CONTACT:

Bucher Vaslin North America (*www.bvnorthamerica.com/reception*) or the CITF Group (*usa.citf-group.com/en*).

### ConeTech: Smoke Taint Removal

This service by **ConeTech** uses a combination of low-pressure spinning cone distillation and other proprietary magic, which is targeted molecular adsorption chemistry that removes smoke taint while leaving as much as possible of the original, untainted aroma compounds in the wine.

**WHAT'S COOL:** Judging from the two-year-old samples I tasted at UWGS, the process seems to work. This alone is noteworthy, very cool and, given the fires of the past few years, very much needed.

#### FOR MORE INFORMATION CONTACT:

ConeTech (*www.conetech.com/pages/services\_smokeTaint.html*).

### Rudolph Research Analytical: AlcoTest-RI

The AlcoTest-RI by **Rudolph Research Analytical** is a combination of a densitometer, refractometer and custom software that measures ethanol (ABV%) and residual sugar (Brix) without needing a separate distillation to separate the two.



**WHAT'S COOL:** Sugar and ethanol typically each interfere with the measurement of the other. For Brix measurements, this means that we can't usually get accurate

results via refractometry if there is ethanol present. Fortunately, ethanol at our concentrations (e.g., below 18 percent) doesn't introduce that much inaccuracy to the measurement of Brix by hydrometry, but hydrometry is prone to technician error and several other interferences.

Ethanol measurements are also thrown off when residual sugar is present. This usually means that wine with any residual sugar has to be distilled in order to separate the residual sugar from the ethanol fraction. This extra step is both time-consuming and a potential source for error.

**FOR MORE INFORMATION CONTACT:** Rudolph Research Analytical (*www.distillerytoolkit.com*).

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### Cool Products \_

at the Unified Wine & Grape Symposium

### Galileo: Spherical Concrete Tank

**Galileo** makes spherical concrete wine tanks. At the moment, there are two sizes, 1,500L (396 gallon) and 3,000L (793 gallon), available. The example I saw at UWGS was mounted on a stand, which allowed the entire tank to be rotated around its horizontal axis. In my opinion, this nifty feature should make the Galileo the perfect fermenter for delicate red varieties, like Pinot Noir, Dolcetto, Grignolino or Counoise, which are usually fermented in small lots. Personally, I'd like to try fermenting Cabernet Franc in one of these.

**WHAT'S COOL:** Aside from the gorgeous aesthetics, it's the little things that make these tanks cool; things like the stand that allows a single person to turn the tank over to break up the fermentation cap or to dump the cap into bins for pressing, the concrete it's made from has the thermal properties that a lot of winemakers are seeking, the temperature-control tubing that is built into the fermenter itself, or the placement of the doors, valves and spigots. I think every feature can be found on other tanks, but few tanks bring them all together into such an elegant package.

#### FOR MORE INFORMATION CONTACT:

**Seguin Moreau Napa Cooperage** (*seguinmoreaunapa.com*). The Galileo website is located at *galileotanks.weebly.com* for those located outside North America. **WBM** 







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## Managing Phenolics in the Vineyard and Winery

Winemakers at Sonoma-Cutrer, O'Neill Vintners, Wente and Merryvale discuss practical uses of phenolic data to improve wine quality

Ted Rieger

**Ted Rieger**, CSW, is a wine journalist based in Sacramento, California and a writer for wine industry media since 1988.

#### WINE PRODUCERS CONTINUE TO

increase and expand the use of grape and wine phenolic data to manage color and tannins in the vineyard and in the winery to better manage overall wine quality. Wineries now have more options to measure and evaluate phenolics by using professional labs, consultants and service providers, and in-house analytical methods and equipment. Phenolic management has been an annual topic at Wine Business Monthly's Innovation+Quality (IQ) Conference since 2015. The 2018 IQ Session, "How to Fall in Love with Phenolics and Keep the Relationship Fresh," featured a panel of winemakers who provided practical information on how they use phenolic measurements to help guide vineyard management decisions, and to guide quality and style decisions during winemaking.



Phenolic measurements are used primarily for managing red wine production; however, session moderator **Cara Morrison**, Chardonnay winemaker at **Sonoma-Cutrer** vineyards, recently began working with Napa-based **WineXRay** to analyze phenolics in Chardonnay. The goal is to look at phenolic levels during press cycles to determine if this could be a tool to make decisions on press cuts, and the potential to better manage grapes from different locations and with variable conditions. She admitted, "This is still a work in progress."

Morrison provided the following insights as a relative newcomer to phenolic analysis: "Phenolics are complicated, and measurement is not a simple direct number you can use, like pH or Brix. Different phenolic service companies measure phenolics differently, and phenolics vary by grape variety, region, country and vineyard block. It takes a year or more of collecting data to figure out what you have. But this data helps you to make better decisions. It's one more piece of the puzzle to help you make more consistent wines and to improve wine quality." Although each operation tailors timing and use of phenolic measurements to their specific needs, common phenolic sampling times from indicator blocks in the vineyard are at veraison, two weeks before harvest, one week before harvest and at harvest. Sampling can be done throughout the winemaking process at critical steps, such as during fermentation after pump-overs.

Samples can be sent out for analysis by lab service providers, such as **ETS** Laboratories, Enartis USA and Enologix. Fruition Sciences specializes in monitoring and mapping color/anthocyanin accumulation in the vineyard. Morrison also listed several in-house methods and equipment available for phenolic analysis: spectrophotometer, **OenoFoss WineScan** distributed by **Gusmer Enterprises**, **NomaSense** PolyScan P200 from Vinventions, the Harbertson-Adams Assay, WineXRay analysis based on the Harbertson-Adams Assay, and the WineCloud developed by the **Australian Wine Research Institute** (AWRI) and available through Enartis USA.



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### Managing Color in the Vineyard

**Greg Gambetta**, professor of viticulture at **Bordeaux Sciences Agro** in Bordeaux, France, discussed managing phenolics in the vineyard for optimum color by understanding and managing three factors: light, regulated nitrogen (N) deficit, and variety constraints and copigmentation.

"Light is a good thing, but high temperatures are bad," Gambetta said. He cited a leaf-pulling experiment in Australia to expose Syrah berries to light after veraison. The grapes benefited from increased color levels with light exposure after 15 days, and color continued to increase after 35 days. But with 46 days of light exposure after veraison, color degradation occurred





from heat exposure. Gambetta said, "High temperatures of about 95° F negatively impact color, so you need to be more creative and nuanced, when managing light and exposing fruit, as temperatures increase." Vine row orientation is an important consideration in managing light and heat exposure as it affects the number of hours and time of day fruit is exposed to light. When berries are exposed to light, berry skins can be 20 to 30 degrees warmer than air temperatures.

The benefits of regulated N deficit was demonstrated with Cabernet Sauvignon at Chateau Haut-Brion in France that used three different N levels in fertigation treatments in the vineyard. A low N treatment showed a large increase in berry color, a medium N treatment showed a lesser color increase, and a high N treatment had the lowest color. Other parameters-berry weight, Brix and pH-were unchanged. Vine N status was assessed through leaf and petiole analyses, and an N-tester attached to a grape leaf. Berry N correlated well with the measurement of yeast assimilable nitrogen (YAN) in the must. Gambetta suggested using multiple methods to assess N. status. Gambetta said, "Nitrogen deficits promote color, but excess N represses the phenolic pathway for color development." He noted that regulated water deficit is more commonly used in vineyard management but can also be related to N deficit. "Water deficit, we think, may be the dominant influence if both stresses are present, and we think water deficit is also, in part, a nutrient deficit," Gambetta added.

Differences in grape varieties and copigmentation involve complex interactions of anthocyanins and total polyphenols that are not well understood. "Color is hard-wired genetically by variety, but there is more to it than just the amount of 'stuff," Gambetta said. "Copigmentation can shift color from red to more purple hues, and increase color intensity, stability and extractability, or a combination of these," he noted. Flavones (not tannins) are the most



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powerful copigments. Certain anthocyanins (non-malvidin acylated) are more likely to form copigments. Varieties, such as Pinot Noir and Sangiovese, are both low in flavones and acylated anthocyanins, are less prone to copigmentation and usually have less color. Gambetta explained: "Varieties have innate color differences. We speculate that stresses in the vineyard can enhance copigmentation." However, copigmentation has not been studied or analyzed much in the vineyard; it is mostly evaluated in winemaking.

Gambetta summarized: "Stresses can promote color, but there can be tradeoffs as stresses may also reduce yield. Different varieties have constraints, so selection and/or blending are important. We still have a lot to learn. Be the scientist and experiment in your own context. There's no substitute for experimentation."

#### O'Neill Vintners and Distillers, Austerity Wines

Adam Popp has been winemaker for the Austerity Wines brand at O'Neill Vintners and Distillers in Parlier, Fresno County since 2014. O'Neill processes 150,000 tons per year and produces multiple brands. Popp said, "Having a quality metric like phenolics is important. We deal with many different vineyards, and we can see which vineyards are performing better based on color. There can be drastic differences between vineyards and within vineyards." Although other common chemical analyses, such as Brix and acidity, are performed, as Popp noted, "Nothing else tells me what's happening in grape skins."



The winery started collecting phenolic data in 2014 and started using it to make decisions in 2016. Popp explained: "The science behind this may be rocket science, but running the analysis is not rocket science. You can do it. My goal here today is to demystify the process. You can use this data to make decisions."

The company uses the AWRI WineCloud that includes a

"Grape & Wine Portal." This web-based application, available by subscription, allows the user to input data and compare it on a benchmarking basis with other vineyards and wineries throughout the world that are in the database. Popp begins by sampling grapes in the vineyard and tracking the lot with sampling again at the crush pad. Grape phenolic measurements analyzed are: total anthocyanins, total tannins and total phenolics (all color and non-color compounds).

Popp said, "My focus in the vineyard is on total anthocyanins. It helps to simplify the process, and making decisions based on color has been most helpful for us." He showed a list of anthocyanin measurements (reported in mg/g fruit in malvidin-3-glucoside equivalents) for four different vineyard blocks that varied considerably: 1.40, 1.26, 0.85 and 0.45. He speculated that



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the block with the lowest number was a result of canopy management issues. He observed, "If we blended all these blocks into one wine, it could probably make a good wine; but if our goal is to make outstanding wines, we can be more selective in what blocks we use and how we handle them."

The winery uses such numbers for several decision-making steps: timing picking decisions, blending options (to segregate lower performing blocks), winery process decisions and additions (tannin additions, warmer fermentations, flash détente or extended maceration to improve lower performing blocks/wine lots) and contract decisions (contracting for specific vineyard blocks or when considering blocks to buy grapes on the spot market) where phenolic data provide good back-up information.

### Wente Family Estates

**Elizabeth Kester** has been a winemaker at **Wente Family Estates** in Livermore since 2010. She helped develop the winery's phenolics program to improve winemaking for producing balanced and varietal-driven wines that

represent a sense of place. said: Kester "Our journey with phenolics started in 2012 when we analyzed grape samples and finished wines. We saw much more potential in the grapes than what actually resulted in the wines. We started collecting more data and tried different practices." The winery changed its additions at the crusher to improve extractions,



altered its pump-over timing and allowed warmer fermentations. "Those helped improve some of our wines and led to a capital outlay decision to insulate about 50 percent of our fermentation tanks and plumb them for heating," Kester said. In 2013, the winery bought a spectrophotometer and centrifuge to do more phenolic sampling in-house and hired a harvest intern to analyze samples and work with WineXRay.

Kester said, "Now almost all of our red tanks are insulated and plumbed for heating, we've changed our pressing protocols, and we tailor our pump-over regimes to each tank. With our 2017 protocols, we now feel like we've gotten there, and our grapes' potential is matching with our resulting wines."

The winery measures and analyzes the following: free and total anthocyanin (as a measure of color), tannins (that provide structure), bound anthocyanins (that correlate to richness in mouthfeel, stable color, and are an indicator of overall quality) and iron-reactive phenols (IRP), also called total phenols, (the amount of all phenolic compounds). Kester said the winery uses Bound Anthocyanin: Tannin ratio as a good quality indicator for Cabernet Sauvignon and targets 20 percent. The winery controls tannin extraction and has determined maximum desired tannin levels that are used for press decisions.

Phenolic data is kept in a database that allows the winery to dig deeper into quality metrics and compare numbers by block and by lot to see if they are hitting targets. Wente has also begun working with Fruition Sciences to monitor and map vineyards for accumulation of anthocyanins in different blocks to improve vineyard practices. Kester listed the following practical applications of phenolic data: vineyard block assessments to see the best performing blocks, picking decisions and optimal picking times, pump-over regimes for daily frequency and duration, pressing decisions, experiment tracking, blending decisions as a tool to find balance and for comparative analysis with tasting/sensory evaluation.

### **Merryvale Vineyards**

**Simon Faury**, winemaker at **Merryvale Vineyards** in Napa Valley, has studied and worked in winemaking in Italy, Bordeaux, Mendoza and California. He said Merryvale uses phenolic data as a tool to help in decision-making in key areas such as: monitoring vineyard ripening, site analysis and comparing blocks, adjusting extractions, understanding wine balance and understanding what levels of phenolics/tannins the wines can carry relative to mouthfeel quality. Faury uses WineXRay for wine and berry analysis, and also sends berry samples to ETS Laboratories for analysis.

He advised looking at phenolic levels in the vineyard before and during harvest to gather information for: early vintage trends, grape condition and extractability; berry size (smaller equals more color and tannins, better skin to juice ratio); planning extraction protocols (using data to fine tune and customize extraction); performing site specific extractions; and making press decisions.

He also advised using phenolic measurements during élevage as a tool for blending to elevate wine quality. Goals are to increase polymeric pigments by proper management of oxygen, SO<sub>2</sub>, temperature and oak. Faury said, "I like



to make a bridge between color and tannin. Reducing use of SO<sub>2</sub> can help them get together, and increasing fermentation temperature helps with a faster reaction." He suggested incorporating phenolics into each wine's style. This involves defining your style; understanding the vineyard and its phenolic footprint, including variety differences, and site and block differences; then adapting your winemaking.

Faury believes bound anthocyanins can be used to define mouthfeel in relation to tannins. They can increase over time, but at Merryvale, about 90 percent of the total amount is set 90 days after crush and will not change much after that. He targets a 20 percent extraction for his wines or a level of 200 ppm of bound anthocyanin per 1,000 ppm of tannins.

Faury summarized: "Manage extractions, understand the rules but do what you want, use phenolic analysis to define new benchmarks, and compare your wines with competitors on the market and see how you're doing." He concluded, "Phenolics are a blueprint of location, an expression of terroir, and they can be used as a way to pursue better vineyard management and better terroir expression." **WBM** 





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### 2019 Lifetime Innovator Honoree: Zelma Long



Zelma Long is one of America's best-known winemakers with an enviable international reputation, which includes the prestigious James Beard Award for Wine Professional of the Year and the Merit Award from the American Society of Enology and Viticulture. One of the first women to study enology and viticulture at U.C. Davis, she began her winemaking career at Robert Mondavi Winery, rapidly working up to the chief winemaker position. Shortly after, she was recruited by Simi Winery as head winemaker and CEO.

In addition to her current role as winemaking partner at Vilafonté in South Africa, Long consults for various winemaking projects in France, Washington, Mendocino, and Israel (recently completed), and is on track to earn her Ph.D. this year.

Long is well-respected in the wine industry as a mentor to some of today's most prestigious winemakers and her work has paved the way for other women to be successful. Those she hired include Dawnine Dyer, Genevieve Janssens, Diane Kenworthy and Margaret Davenport.

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Maria Nikolantonaki and Christian Coehlo are senior lecturers at the University of Burgundy; Marie-Laure Badet-Murat is a research consultant at Œnologie by MLM, Chazeau, Saint-Médard-en-Jalles, France; Jean-Charles Vicard is owner of Vicard Generation 7 cooperage; and Régis Gougeon is a professor at the University of Burgundy.

### **Key Points**

- The signature of great dry white wines, besides their organoleptic complexity, is their ability to improve with age.
- *Élevage* improves white wine's oxidative stability.
- Independent of the vintage and wine matrix, there is a positive correlation between a wine's oxidative stability and oak barrel tannin potential measured by Near Infrared Spectroscopy on the untoasted wood.

**GREAT DRY WHITE WINES**, besides their organoleptic complexity, have an ability to improve with age. Oxidative instability was first observed at the beginning of the 1990s; and since then, winemakers have taken greater precautions to avoid premature aging.

Management of *élevage* (barrel aging), an intrinsic step in the production of premium quality wines, plays a major role. In addition to its role in micro-oxygenation and the enrichment in phenolic and odorant compounds, oak wood has an antioxidant capacity, which influences wine's redox potential and thus its oxidative stability. Oak wood's antioxidant capacity depends on its ellagitannin content,<sup>1,3</sup> demonstrating a strong correlation between wine's antioxidant capacity and its concentration in ellagitannins.

This study confirms that hydrolyzable tannins play a role in the phenomenon of oxidation in wine. Ellagitannins are extremely reactive with oxygen. Their concentration in wine increases rapidly in the first three months of *élevage.*<sup>6</sup> Numerous physico-chemical factors can explain their subsequent decrease in the wine.

Ellagitannins' high reactivity in the presence of oxygen is one explanation for the decrease in their concentration. The oxidation of these ellagitannins leads to the formation of quinones which can undergo a nucleophilic attack from ethanol to form hemiacetal derivatives that, in turn, undergo another attack from ethanol to form acetal derivatives.



This is a near infrared spectroscopy (NIRS) measurement of tannin potential (TP) along the length of untoasted French oak staves.

Another explanation may be the hydrolysis of C-glycosidic ellagitannins, leading to the formation of ellagic acid and vescalin for vescalagin, and formation of castalin for castalagin.

While the interaction between wine and oak barrel has been the subject of many studies over the past decades, until now there have been almost no data on the stabilizing capacity of the oak extractable compounds with regard to the oxidation of wines and white wines, in particular.

The first step involves distinguishing the wines aged in barrels with different toasting and tannin potential, according to their capacity to resist oxidation, using electronic paramagnetic resonance (EPR) after free radical initiation. Furthermore, in order to understand the nature of the wood compounds that contribute to wine's oxidative stability, specific molecular analyses (ellagitannins and grape phenolic compounds and glutathione), as well as non-specific analyses, were carried out on the same samples.



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#### **Oak Tannin Selection and Barrel Toasting**

### **Experimental Set-up**

In order to study the impact of *élevage* on the oxidative stability of dry white wines, we combined two innovative approaches. Wines aged in barrels with various uniform tannin potential (which were classified according to their total ellagitannin content as measured by near infrared spectroscopy on the untoasted wood) and different toasting levels (high precision toasting by radiant heat)<sup>2</sup> were distinguished by their overall ability to resist oxidation. Trials were carried out on different vintages (2015 and 2016) and varieties (Sauvignon Blanc from Bordeaux and Chardonnay from Burgundy).

The wines' ability to resist oxidation was estimated by electronic paramagnetic resonance (EPR) after free radical initiation of oxidation. Analyses of the ellagitannins, grape phenolic compounds and glutathione were carried out on the same samples throughout the wines' eight months in barrel.

#### Table 1: Wine Trials

WINES AND VINTAGE		VARIETY	TOASTING*	LTP**	MTP**	CONTROL***
А	2016	Chardonnay	Blanche	Х	х	Х
В	2015	Sauvignon Blanc	Blanche	х	х	Х
С	2016	Chardonnay	Blanche	Х	Х	Х

Toasting\*: Blanche = 150° C for one hour

LTP and MTP\*\*: Tannin Potential corresponding to different ellagitannin content in untoasted wood: Low or LTP from 2,000 to 4,000, Medium or MTP from 4,001 to 6,000 of ellagic acid equivalent per gram of dry wood Control\*\*\* = one-year-old barrel

**FIGURE 1A:** Wine classification (A) during aging in barrels with different tannin potential, according to the maximum intensity and kinetic curve's gradient K of formation of radicals POBN-1-HER (arbitrary units) measured by EPR after chemical initiation by Fenton reaction. Analysis carried out just after alcoholic fermentation (T0) and end of aging (T8).



#### Analysis of the Wines' Oxidative Stability

EPR was used to discern resistance to oxidation of the white wines aged in barrels with different tannin potential and toasting level. The method for analyzing wine's oxidative stability is based on assessment of the kinetics of 1-hydroxyethyl radical formation, after free radical initiation in the wine, which is then captured by a POBN paramagnetic probe. The free radical initiation is chemically-initiated (Fenton reaction), which leads to the formation of very unstable radicals that will react with the POBN probe.

The kinetic curve's gradient (K) and the value of the maximal intensity (Imax) are chosen as representative values to distinguish the different wines. On the basis of our analytic approach, wines with low Imax and K values are considered to be more stable against oxidation.<sup>5</sup> In all of our experiments, *élevage* improves the wines' oxidative stability (**FIGURE 1A**). Furthermore, the wines' distribution according to their Imax and K values, enabled us to demonstrate a positive correlation between a barrel's tannin potential (TP) and wine oxidative stability.

Independent of the wine matrix (See **FIGURE 1B**), the medium tannin potential modalities show better stability at the end of *élevage* than low tannin potential modalities, which have similar characteristics to the control modalities (one-year-old barrels). This phenomenon, confirmed for the three matrices tested, demonstrates the positive impact of extractible ellagitannins on wine resistance to oxidation.

This set of experiments also investigated wines aged in low tannin potential barrels associated with two types of light toasts: Blanche ( $150^{\circ}$  C for one hour) and Ivoire ( $160^{\circ}$  C to  $170^{\circ}$  C for 1.5 hours). At the end of *élevage*, no significant difference was found between these two toasting profiles (data not shown). It is important to note that the toasting tested in our study was very low and close in terms of intensity (light). We can hypothesize that a higher toasting level would have an impact.

**FIGURE 1B:** Wine classification (A, B) during aging in barrels with different tannin potential, according to the maximum intensity and kinetic curve's gradient K of formation of radicals POBN-1-HER (arbitrary units) measured by EPR after chemical initiation by Fenton reaction. Analysis carried out at the end of aging (eight months).





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FIGURE 3: Evolution of glutathione content in wines (A, B, C) during élevage, according to oak tannin potential.



### Wines' Chemical Profiles

The evolution kinetics of overall hydrolyzable tannin content for the different modalities are shown in **FIGURE 2**. The measurements were carried out, starting from the end of the alcoholic fermentation up until eight months of *élevage*. A positive correlation is demonstrated, independent of the matrix and the oak's tannin content, between the tannin potential of the oak wood and concentration of total ellagitannin in the wine. The higher the tannin potential of the barrel, the greater the ellagitannin content in the wine. As previously described by **A.A. Watrelot** on red wine,<sup>6</sup> a very sharp increase is noted in the first three months, which implies significantly higher extraction kinetics at the beginning of *élevage*. It is also important to note that very little ellagitannins are extracted during alcoholic fermentation.

After two months of *élevage*, the average ellagitannin concentration in the wines was 4.2 and 4.6 mg/L ellagic acid equivalents for the low and medium tannin potential modalities, respectively; a rapid increase was then observed after four months (9.07 and 11.4 mg/L ellagic acid equivalents for low and medium tannin potential, respectively) and after six months of *élevage* (10.59 and 13.85 mg/L ellagic acid equivalents for low and medium tannin potential, respectively).

The results in **FIGURE 2** show that the time necessary to reach the maximum ellagitannin concentration in the wines is related to the wine matrix and not to the oak tannin potential. For wine B, ellagitannin extraction peaks at six months of *élevage* (14.28 mg/L ellagic acid equivalents for low tannin potential, 14.30 mg/L ellagic acid equivalents for medium tannin potential), which is followed by a decrease after eight months whereas ellagitannin extraction is constant throughout *élevage* for wines A and C.

Various physico-chemical parameters, such as pH, alcohol content (ABV) and temperature, can modify the ellagitannin extraction rate in wine.<sup>4</sup> In our experimental conditions, wines A, B and C showed similar pH and ABV, and were aged in cellars with mild temperatures (15° C to 18° C). Thus, we can hypothesize that wine B's greater rate of ellagitannin consumption during *élevage* could be linked to its higher oxidation resistance, as measured by the EPR method. Indeed, ellagitannin reacts first with oxygen and thus leads to a better protection toward oxidation.

Trials combining low tannin potential with the light toasts (Blanche and Ivoire) did not demonstrate an impact on the ellagitannin extraction kinetics (data not shown). However, the wine matrix effect on the extraction kinetics was confirmed for this series of trials for three distinct wines.





A near infrared spectroscopy scanner analyzes wood with an acoustooptic tunable filter to make mathematical correlation to yield tannin level.

The evolution in glutathione content, a known antioxidant, according to oak tannin potential, was also monitored throughout *élevage* (see **FIGURE 3**). It should be noted that no significant difference in the fermentation kinetics, during alcoholic fermentation, was observed. At the end of alcoholic fermentation, the glutathione concentration is identical for the different modalities of each type of wine. Identical results were obtained for wines aged in low tannin potential barrels coupled with Blanche and Ivoire toasts.

We can thus deduce that a low tannin potential, combined with a light toast has no influence on the glutathione concentration after alcoholic fermentation. Afterwards, during *élevage*, the glutathione concentration decreases progressively, depending on the tannin potential and the type of wine (see **FIGURE 3**). It should be noted that for wine A, the new barrel had a significant positive effect on glutathione preservation whereas for wine C, this was not the case.

### Élevage Increases Wine Shelf Life

The objective of this research was to assess the impact of oak tannin selection and barrel toasting on dry white wine oxidative stability.

The results indicate that wine oxidative stability increases during *élevage*, independent of the grape variety (Sauvignon Blanc and Chardonnay). At the end of *élevage*, wines aged under medium oak tannin potential show better antioxidant stability.

Concerning the ellagitannins, our analyses demonstrate a high level of homogeneity in the tested barrels, and a concordance between the total content in the wines and the barrel classification. Wine ellagitannin kinetic extraction is linear during *élevage* and achieves a maximum at six or eight months in a grape variety-dependent manner.

Oak wood barrel tannin potential and toasting have no effect on the glutathione and grape polyphenol content of a wine.

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At this stage, the specific analytic approach seems unable to explain the variabilities in wine oxidative stability. There is no clear correlation between glutathione levels and wine oxidative stability at the end of aging. We will continue our research in order to better understand the wood compounds conducive to better oxidative stability. These studies of the wood's metabolomics will be the subject of a later publication. **WBM** 

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### Winemaker Trials What are the Sensory and Phenolic Effects of Using Oxygen and Nitrogen as Flotation Gases?

Erath Winery's assistant winemaker was particularly pleased with flotation as a tool for the production of white wines but wanted to see if there were any qualitative differences when using nitrogen instead of oxygen.

Michael S. Lasky

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

#### WINERY: Erath Winery

#### ASSISTANT WINEMAKER: Karl Weichold

**OBJECTIVE:** To compare the sensory effects and analyze the phenolic composition of juice float clarified with air and nitrogen.

**Summary:** A homogenous press fraction of Pinot Gris juice (Umpqua Valley AVA) was processed with a standard pre-flotation protocol (pectinase, bentonite, etc.) then split into two separate tanks. One tank was float-clarified with air and the other with nitrogen. Two stainless steel drums were collected from each tank, inoculated and fermented until dryness. Metabisulfite was added once fermentations were complete, and the paired stainless steel drums were each racked out to individual neutral barrels.

Lot 1: 2017 Pinot Gris float-clarified with air

Lot 2: 2017 Pinot Gris float-clarified with nitrogen

**CONCLUSION:** Despite starting from an identical and homogeneous press fraction, the two different clarification gases yielded distinctly different phenolic profiles. Both resultant wines yielded nearly identical amounts of tannin (10.3 ppm for  $N_2$  and 10.7 ppm for air). However, there was a marked difference in grape reaction product, caftaric acid and caffeic acid (about 10 times more in the  $N_2$  float versus the air float). There was also a significant difference in quercetin glycosides (about 7 times more in the  $N_2$  float versus the air float). While these are predictable results brought about by oxidation, the resultant wines are distinctly different from a sensory basis. This provides a couple of useful options that might net more degrees of freedom when making stylistic decisions about float clarification and treatment of juice.



#### Winemaker Bio:

Karl Weichold has more than a decade of winemaking and enology experience across a wide spectrum of scales of production. Born and raised near Houston, he graduated from Texas A&M with a degree in biochemistry in 2006. Weichold began his career in wine working with several wineries in the Texas Hill Country in a variety of roles. In 2009, he accepted a lab tech position with 12th and Maple Wine Company in Dundee, Oregon. Later in roles as enologist and then lab manager, he employed wine analysis methods that focused on principally accuracy, throughput and automation. In 2015 he joined Erath Winery as assistant winemaker. He has since been instrumental in their pursuit of crafting fine Oregon wines and growing their portfolio, including participation in the creation and implementation of an ambitious Rosé program and introducing novel approaches to winemaking across different modes of production.

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### Winemaker's Postmortem

### What led to the creation of this trial?

**Weichold:** We started using flotation in 2016 for our whites and really enjoyed how you could get a white from the press to an acceptable level of clarity, racked and inoculated so quickly. We figured that with a tool like this at our disposal, we should know more about how that tool operates and what degrees of freedom that tool would give us. Since we have a selection of gases here at the winery, we wanted to attempt to discover any qualitative differences that the two flotation gases might convey to the finished wine.

### Do you think different gases affect various varietals in individual ways?

**Weichold:** It's something that I think we want to drill down on in the future. Different white varieties that we make at Erath potentially start with different phenolic content. For this wine, the results we received from **ETS** for the white wine phenolic panel showed the air flotation to have five- to 10-fold reduction in things like grape reaction product caftaric and caffeic acids. So if you start with a higher phenolic content with a different variety, the effect could potentially be more pronounced.

How that plays out in the final qualitative assessment of the wine is entirely up to what a winemaker is looking for in terms of stylistic targets. There is certainly a difference between the two wines. However, in my **IQ** presentation on this trial, what I was careful to say is neither one of these treatments is necessarily right for every single winemaker.

The stylistic differences we saw on the nitrogen flotation versus the air flotation were vastly different but potentially correct for wineries that might want a crisper, lighter style. A winemaker implementing gas flotation shouldn't assume that one gas is necessarily going to fit a house style perfectly or that conditional use of two gases for different sites or varietals wouldn't be useful in terms of building blending components.

### Ultimately, how much fruit was involved in this trial?

**Weichold:** We compiled a large 19,000-gallon tank of juice prior to clarification. Then we sent two equal volumes of that unclarified juice to two 7,000-gallon tanks (about 4,000 gallons of juice each) and then float-clarified those two tanks: one with air and one with nitrogen, in order to yield two different treatments for fermentation. Once they were clarified, we racked the clarified fraction into a separate tank and collected our stainless steel drums for fermentation.

#### Considering the size of the lots, were you concerned that this was a large investment to risk on an experimental trial?

Weichold: All in, it was a relatively low percentage of what would constitute the final blend for this program. Moreover, the two treatments were not so severe as to present a real risk to compromising the wine. With that said, the actual initial dissolved oxygen for the nitrogen flotation was probably similar to the initial conditions which we used to make wine (via cold-settling). There was no real dissolution of air in that process, so we were likely starting with the same dissolved oxygen. The treatments did eventually go out to our larger Oregon Pinot Gris blend.

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#### During the trial, were there any problems that had to be addressed? And how did you attend to them?

Weichold: Our biggest concerns were starting with a homogeneous press fraction and ensuring that only the variables we wanted to study were changed. An especially large amount of consideration was given to constraining all possible variables. That is, the run time on the pumps for the mixing of pectinase and other adjuncts, the dosage of gas in the juice for the purposes of clarification, etc., all should be as similar as possible between the two treatments. What we were hoping to look for here was that the only variable altered between these two treatments was the application of the gas.

The real practical concerns out in the cellar principally consisted of ensuring that one tank did not circulate longer than the other and that all other typical flotation criteria be met for both treatments as concurrently as possible (pectin digestion, clarity, etc.). So much of float clarification criteria are temperature-dependent; and since both treatments racked to flotation tanks from a homogenous fraction at the same temperature, most subsequent actions for float clarification were achieved almost simultaneously.

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

**Weichold:** For our house style, we preferred the flotation with air as a finished wine. We thought that it yielded more tropical notes, tended to make a softer wine and supported superior yeast health earlier. We are planning on continuing this experiment by mating this trial with a 2018 trial in which we examined the effect of oxygen dosage during fermentation. We would like to examine the effect of both of these different flotation gases and different rates of oxygen inclusion during fermentation, as it relates to the collective effect on yeast health and stylistic effect.

In the end, this trial confirmed what we expected was going to be the right choice for our selection of gases.

### What was the overall opinion of attendees who attended the trial's IQ presentation?

Weichold: At IQ and other symposia, the startling thing about this experiment was that there didn't seem to be a subjective consensus between the two treatments. This addresses my original point that this experiment isn't necessarily meant to show the right or wrong way to select gases for fermentation. It's simply a set of tools you might use to better create a house style. To us, the nitrogen float was a little more closed but might have had flintier, crisper characteristics. The air float had a rounder, more tropical, more expressive pear and apple note to it. Our style is very fruit-forward, so we felt that the expression of the fruit that the air gave us was more appropriate for the wines we create. In our opinion, the experiment is certainly worth performing on your own wine just to confirm that you are making the correct choice for flotation gas to best achieve your stylistic target. WBM

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Dr. Mark Greenspan has more than a quarter-century of scientific viticulture research and viticultural field experience. He specializes in irrigation and nutrition management, yield and canopy management, vineyard climate and microclimate, vineyard design and vineyard technology. He is the founder of Advanced Viticulture, Inc. based in Windsor, California (www.advancedvit. com), providing consulting, technology, vineyard management and vineyard development for wineries, winemakers and wine growers devoted to producing premium wines. Please direct queries to mark@advancedvit.com or 707-838-3805.

I'M A VITICULTURIST BY trade, but any good viticulturist should have a good grasp on soils for vineyards. Soils are complex, but a viticulturist does not need to consider all of the finer aspects of soils. Instead, a viticulturist needs to understand at least a subset of the attributes most important for vineyard decision-making. These will include physical (texture, structure, friability, horizons, compaction, etc.), hydric (water-holding capacity, drainage and waterlogging potential, etc.), chemical (pH, mineral nutrient levels and balance, toxic elements and compounds) and biological (microbiological, beneficial and parasitic insects and nematodes). I will focus on nematodes here. Why? Because it seems they are ever present, at least in North Coast vineyard soils, and one would be remiss if they didn't test for them.

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I do quite a few soil investigations; and while some are for virgin soils for new vineyard developments, the majority are for vineyard replants, since replanting is the "thing" right now, as sick and poorly productive vines are being replaced with, presumably, healthy ones. In my investigations with vineyard soils for replanting, I've found most of them, if not all, have nematode populations sufficient to be a factor in the replant decisions.

In fact, my nematode tests were coming back positive so often, I was wondering if the lab was making up numbers. However, I did a project recently in Dry Creek Valley (which will remain anonymous) where we sampled soils from existing vineyard blocks interspersed with virgin areas or areas that had vineyards removed a number of years ago (the actual number of years is not known). The samples were all from the same, relatively small parcel. Nematode analysis showed that none of the sites had detectible root-knot nematodes. Samples from the two vineyard block soils had dagger nematodes (all *Xiphinema americanum*), and of those samples, half contained high levels of ring nematode. But to my point, the samples taken outside of vineyard blocks had zero parasitic nematodes. They did have nematodes, but none considered to be harmful to grapes. So, albeit an anecdotal finding, it does suggest that vineyards support populations of nematodes potentially damaging to grapevines. It seems like that statement should be almost obvious, but it's amazing to me how many people don't bother to check for nematodes when replanting.



### 

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### Sampling for Nematodes

So, if you are planning to replant a vineyard, should you just assume that you have nematodes? Well, maybe so, but it would still be best to sample for them. Nematode sampling is easyeasier than sampling for soil chemistry because you don't need to go very deep. As long as the soil is moist, we usually sample in the upper 18 inches. Taking several samples, either by shovel or by auger, and blending them in a bucket before drawing off a good-sized sample (about one-third to one-half of a gallon Ziplock bag) is sufficient. Be sure to include some roots-especially grapevine rootsbecause you are much more likely to find nematodes when these are included. If the soil is dry, you will need to go deeper to sample. Nematodes will only be present in high numbers where the soil is moist.

I'm not a nematologist, but we usually prefer to sample for nematodes when soils are somewhat warm but still moist. Late fall after a good rainfall is usually a good time to sample. Mid-winter is okay in mild climates, but spring is also a great time to sample for nematodes. While we sometimes sample in the summer, we will take our samples deeper in the profile and preferably under drip emitters.




### What Do You Do If You Find Them?

Well, there's not much you can do to get rid of nematodes, so you just need to find ways to live with them. For existing vineyards, the options are few. To my knowledge, there is primarily only one commonly-used chemical pesticide that is registered for use in vineyards for nematode control, and that is Movento (spirotetramat). Applying it, through the drip, is not as effective as applying it foliarly because the product in its raw form is not what kills the little guys. The material is converted within the plant to its lethal form, and that is translocated throughout the plant, including to the roots. This product has other target pests, including vine mealybug, and so it is a popular pesticide. I worry, however, if we will see resistance to it. Hopefully, other tools will be developed to reduce that risk.

There are other registered nematicides, but they are quite toxic, and I'd rather not discuss them here.

Organic (OMRI-listed) materials include DiTera, a microbial-based product, and Nema-Q, a naturally-derived surfactant product. There are some, although non-scientific, studies showing that compost teas may also help to control nematodes. These products may be applied by injection through the drip system, in addition to other application methods.

None of these products, organic or synthetic, will kill off the nematodes in your vineyard but can be used to prolong the economic life of a vineyard. They can be especially beneficial during the establishment phase, allowing the root system to develop with less interference by nematodes.

For replants, knowing if nematodes are present and in what quantities and what species is important for any vineyard plan. Fumigation is an option, though the fumigant choices are dwindling, and they are highly toxic, and I would also suggest not in concert with a sustainable farming approach. In fact, I see very little pre-plant fumigation happening anymore. Rootstock choice, on the other hand, is the ultimate in biocontrol and truly the most sustainable method of nematode control in vineyards. So, don't make those rootstock choices casually.



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### **Rootstocks for Nematodes**

You will never rid your vineyard of nematodes, even if you fumigate. Grapevines and nematodes can live in harmony as long as the roots are not severely harmed by the nematodes. There are "traditional" rootstocks that may be used for vineyards that have some resistance to specific nematode species. That said, choose a rootstock not only for its nematode resistance, but also for its other viticultural characteristics and soil adaptations. The decision can be difficult, but that's what we're here for! Documentation for rootstock characteristics with regard to nematodes shows often-conflicting information, but I have some favorites for references <sup>1,2</sup>.

For root knot nematode, the *berlandieri x riparia* rootstocks, including SO4, 5C and 5BB, have good resistance. 101-14 is also a good choice for root knot, as is 1616C and, to a lesser extent, 420A. None of those is known for drought tolerance, but one could consider using 1103P in droughty conditions, as it is also reputed to have good root knot nematode resistance. Ramsey (AKA Salt Creek) also has root knot nematode tolerance and good drought tolerance, but is quite vigorous and not commonly used in coastal vineyards. It is also salt-tolerant, however, so it has other benefits for a production-oriented vineyard.

For dagger nematode, there could be differences in resistance to either *Xiphinema americanum* or *Xiphinema index*, the latter of which vectors the fanleaf virus. Schwarzmann continues to be one of my favorite go-to rootstocks for dagger nematode-infested soils. Besides the super-vigorous Harmony and Freedom rootstocks (used mainly for high-production vine-yards), there are few other choices. One clear alternative is O39-16, which is quite resistant to dagger nematode and features resistance to the fanleaf virus. However, it is awkward viticulturally, particularly because it can impart vigor while being intolerant of drought, and it also tends to uptake soil potassium at sometimes unfavorable levels. Nevertheless, it is sometimes the best choice for a heavily dagger nematode-infested vineyard, especially if fanleaf was present in the vineyard being replaced.

Ring nematode is another bad one, and it can be very frustrating because few rootstocks are resistant. Schwarzmann has some ring nematode resistance, and some sources indicate that 101-14 and 420A also have some resistance. O39-16 has good ring nematode resistance, so in addition to its dagger nematode resistance, it is sometimes the go-to choice, despite its viticultural warts. But it has no resistance to root knot, so it is not always perfect.

The perfect rootstock probably doesn't exist, but **Andy Walker**, professor and plant breeder from **UC Davis**, developed a series of rootstocks specifically for the purpose of nematode resistance. His GRN series (1 through 5) are those rootstocks. Of the group, GRN-1 seems to be the most popular as it is resistant to all of the major parasitic nematode types. One would think that everyone would be using them, but there has only been limited adoption of it for many reasons. Those reasons include not knowing how it performs viticulturally and its limited availability.

Recently, I learned of a research trial being conducted by **Rhonda Smith**, **UC Cooperative Extension** farm advisor for Sonoma County, where she and her colleagues planted a highly-replicated rootstock trial that contained several different rootstocks on a site heavily infested with all the nematode types we fear. The trial included the GRN-series of rootstocks, along with O39-16, 1103P, Schwarzmann, 1616C and the USDA rootstocks RS-3 and RS-9. Those latter two rootstocks are crosses between Ramsey and Schwarzmann and



Nematode resistant rootstock GRN 1-5 performed well in 2016 and 2018, with only 039-16 showing higher yields. Data is from Rhonda Smith, UC Cooperative Extension Farm Advisor

were bred for both nematode resistance and salt tolerance. The trial, planted in 2012, was in Cabernet Sauvignon at 622 vines per acre on Yolo loam soil.

Smith's preliminary results have been encouraging for the GRN rootstocks. Preliminary yield data from two harvests (2016 and 2018; 2017 was not harvested due to the fires) indicate that the GRN rootstocks are among the highest-yielding of the rootstocks in the trial (**FIGURE 1**), with only O39-16 having a higher yield among those evaluated. Schwarzmann trailed them in yield but was highest among the "traditional" rootstocks (including 1616C and 1103P). The RS-series rootstocks did not perform well at this site and displayed poor vegetative growth, as well as poor yields.

This work is encouraging in that it may alleviate some of the concerns growers have about the performance of these new rootstocks, the most popular of which seems to be GRN-1. Note that the GRN rootstocks are not necessarily resistant to fanleaf virus, which remains a concern. However, there is hope that it is resistant enough to the vector that that risk is reduced. Work is ongoing to determine the effects of fanleaf virus on those new rootstocks. At the same time, some nurseries are ramping up their production of the new rootstock line, and we will likely have a viable alternative for those heavily nematode-infested soils. WBM

- <sup>1</sup> Ferris, H., Zheng, L. and Walker, M.A. 2012. Resistance of grape rootstocks to plant-parasitic nematodes. *Journal of Nematology* 44:385-394
- <sup>2</sup> Bettiga, et al. Wine Grape Varieties in California. University of California, Agriculture and Natural Resources. 2003. Publication 3419.

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### Insight & Opinion: A Rude Awakening to Grapevine Trunk Disease

Nine days on the road with Dr. Richard Smart in the Midwest

#### Michael White



Michael White is an extension viticulture specialist for the Iowa State University Midwest Grape & Wine Industry Institute. He has more than 20 years of experience working with vineyards and wineries in the Midwest. He can be reached at *mlwhite@iastate.edu*.



Richard Smart (center) leading a hands-on workshop in a Marquette vineyard at Round Lake Vineyards in Minnesota.

**IT ALL STARTED WITH** the **Midwest Viniculture Expo** held in June 2018 in Davenport, Iowa. Dr. **Richard Smart** was going to be the keynote speaker on both days, with one talk on "Vine Balance" and the other on "Canopy Management."

Smart had contacted me early in March for some background details about the winegrape industry in Iowa and neighboring states, including information on cultivars, training systems, climate, wine styles, etc. I was also able to set up some vineyard workshops and vineyard consultations during his visit. This was easy to do as it's not very often you have Dr. Richard Smart—the "Flying Vine Doctor" and lead author of *Sunlight into Wine*—stop by your Midwest vineyard.

The day had come to start our nine-stop tour through Iowa, Nebraska and Minnesota. The agenda was set, preparations were made, and my 2008 Chrysler PT Cruiser was ready to roll. I picked Smart up early in the morning for our first stop, a visit with **Bob Wersen**, owner of **Tassel Ridge Winery** and its vineyard manager, **Adam Nunnikhoven**.

That morning at Tassel Ridge we walked the vineyards with Bob and Adam. What I thought was going to be a *Sunlight into Wine* canopy management

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#### A Rude Awakening to Grapevine Trunk Disease



The dead trunk and yellow foliage at the base of this St. Croix grapevine are two symptoms of a GTD.

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discussion quickly turned into a grapevine trunk disease (GTD) moment. Richard was amazed at the amount of GTD present and had me cut quite a few cordons and trunks that showed signs of GTDs. He took a lot of pictures, explained the nuances of the different types of trunk diseases and then described the management practices that could be used to lessen their deleterious effects on grapevines. What Richard thought was mostly *Botryosphaeria* (Bot) or *Phomopsis* ended up being something much more complex, as we learned after the cordon samples were sent to **Trical Diagnostics** and **AL&L Crop Solutions** in California for diagnosis. Both of these labs have extensive experience with GTDs.

That same afternoon, the **lowa Wine Growers Association** and **lowa State University Extension & Outreach** worked with Tassel Ridge Winery to organize a vineyard workshop at the winery with Richard as the main speaker. Richard spoke a little about canopy management and a lot about GTD identification and management.

His first visit blew the GTD door wide open. What most of us thought was primarily a winter damage problem ended up being a much bigger, longterm disease problem, and those diseases, unless addressed, were going to dramatically shorten the life of our Midwest vineyards.

Dr. Smart emphasized that to his knowledge, winter injury does not stain internal woody tissues of grapevines, but that staining of the inner wood tissue would be a definite sign of GTD. A sign of a plant disease is what we see as the physical evidence of a pathogen being present, and those signs could include:

- a. Fungal fruiting bodies on the surface
- b. Gummosis (bacterial exudate seeping from a canker or internal woody tissue)
- c. Internal staining of the woody tissue.



The stained woody pith of an Edelweiss vine at Tassel Ridge's vineyard is one sign of grapevine trunk disease.

Symptoms of a plant disease typically include a detectable change in the color, shape or function of a plant. Common symptoms seen on GTD-in-fected vines could include:

- a. Low vigor vines with light green to yellow or red foliage
- b. Short shoot and internode growth during the season
- c. Poor budbreak and/or dead spurs along the cordon
- d. Cankers on the trunk or cordon
- e. Dead or dying cordons
- f. Dead grapevines.

The next day Richard and I drove over to the **Buchanan House Winery** at Tipton, Iowa. The owner, **Randy Weaver**, and his daughter, **Mallory Abernathy**, had gathered several of the vineyard owners they buy grapes from for a private consultation with Richard. Once again, what started out as a canopy management-focused session quickly turned into a GTD hands-on workshop. There were plenty of GTD signs and symptoms in the vineyard to use for "show and tell."

That afternoon we headed to the **RiverCenter** in Davenport, Iowa to spend two days at the Midwest Viniculture Expo. Both Richard and I were speaking at this event. In his talk, Richard discussed the signs and symptoms of GTD he had seen the two prior days, with an emphasis on what he thought was probably *Botryosphaeria* and/or *Phomopsis*.

Day five brought a day of visiting Iowa vineyards, east to west across the entire state. We started out at **3 Sons Vineyard** near Columbus Junction, then moved to **Wooden Wheel Vineyards & Winery** near Keota, **Annelise Winery** in Indianola and **Breezy Hills Winery** near Minden. The procedure was the same at each stop: A little canopy management small talk and then onto checking for GTDs. Discolored woody piths, dead arms and/or cordons were easy to find at each location.

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#### A Rude Awakening to Grapevine Trunk Disease



(left to right): Dr. Matt Clark (University of Minnesota), Richard Smart, Lisa Smiley (Southern Minnesota Wine Growers Alliance), Annie Klodd (University of Minnesota) and John Thull (University of Minnesota) check out trunk disease symptoms on a Malbec vine at the University of Minnesota's research vineyard.

After a good rest Friday night, we headed to **Soaring Wings Vineyard**, **Winery and Brewery**, just south of Omaha. Dr. **Paul Read**, professor of viticulture at the **University of Nebraska-Lincoln**, had organized a workshop with **Jim** and **Sharon Shaw**, the owners of Soaring Wings. Jim is a pretty techy type of guy. His vocation consists of flying airliners; his avocation consists of growing grapes and making wine and beer. Jim knew that his 10-acre vineyard was having problems and had submitted some cordon and trunk samples to the Plant & Pest Diagnostic Clinic at UNL in Nov. 2017. The results came back indicating Crown Gall (*Agrobactierium vitis*), *Botryosphaeria* and *Phomopsis*.



The final stop on Monday was at the **University of Minnesota**'s Horticulture Research Center (UMN HRC). Frontenac, Frontenac Gris, La Crescent, Marquette and Itasca are five widely-planted, cold-climate grape varieties that were developed at UMN. The **Southern Minnesota Wine Grower Alliance** co-sponsored this workshop. The workshop was scheduled in the afternoon, but in the morning Richard and I met with Dr. **Matt Clark** and other members of his grape and wine team who work at the UMN HRC for a tour of their research vineyards.

Like every one of our prior stops, GTD was easy to find. Eyes were wide open, as the group listened intently, while Richard pointed out the signs and symptoms and discussed the management options for growers. At the afternoon workshop (attended by more than 75 people), Richard gave his canopy management and GTD talk with an emphasis on *Botryosphaeria*.

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#### A Rude Awakening to Grapevine Trunk Disease



Richard Smart (left) consulting with Bob Wersen, owner of Tassel Ridge Winery (center), and his vineyard manager, Adam Nunnikhoven, inspecting a block of Edelweiss vines.

### The Follow Up

Six months have passed since Richard visited nine vineyards and held five separate workshops across Iowa, Minnesota and Nebraska. After he left, I sent in cordon samples from 10 cultivars from five different Iowa sites to laboratories for GTD analysis. This testing confirmed a large host of fungal GTDs, along with the bacterial disease Crown Gall (see **FIGURE 1**). Prior to this testing, we were already very aware of Crown Gall and *Phomopsis*, which are two common diseases in Iowa. We were not aware of the others.

We now know that the Midwest is like all the other grape-growing regions of the world: We have a grapevine trunk disease problem. It is possible that we may have a higher degree of GTDs due to the additional trunk and cordon winter injury that happens here. We need to address our GTD problems, or the end result will be lower yields, early decline of vineyards and increased costs for replanting as the local industry matures.

Another consequence of Richard Smart's Midwest visit was that Dr. Matt Clark and his staff have applied for a University of Minnesota research grant to survey and address GTD issues in Minnesota.

Some of the GTD management options we talked about on our tour included:

**1. Sanitation:** Remove the pruning debris from the vineyard. Burn, bury or compost this material so that the fungal spores cannot re-infest the vines.

**2. Long or Double Pruning:** Leave extra buds during your initial winter pruning. Come back just prior to budbreak and do your final pruning. The warmer temperatures, during this final pruning, will allow the pruning cuts to heal over much quicker, thus deterring additional infection from GTD spores in the air.

**3. Do NOT Prune During Rainy Periods:** Rain hastens the production of GTD airborne fungal spores as temperatures rise above 45° F. These spores can quickly infect pruning scars.

4. Regular Trunk and Cordon Renewal: As the vines age, GTDs increasingly take a larger toll. Be ready to gradually train up new suckers on own-rooted vines or water sprouts on the trunk for trunk renewal and replace cordons as they decline.

5. Barrier Products: There are a number of non-pesticide products that can be painted on the fresh pruning wounds. Tech-Gro B-Lock, or just plain latex paint, can be used to seal the cut. Vitiseal and SpurShield are two products that are considered barriers and can be painted or sprayed.

6. Fungicides: I am aware of three fungicides currently labeled for protection against some of the major GTDs in the United States: Topsin-M (thiophanate methyl - two-day Restricted Entry Interval), Rally (myclobutanil-24 hour REI) and Mettle (tetraconazole – 12 hour REI).

These fungicides should be sprayed daily after pruning and re-applied approximately one to two weeks later. A spray dye is recommended to ensure that the pruning wounds are well covered. Some growers are mixing fungicides in their barrier products to give added longevity to the fungicide. As always: Read and follow label directions.

7. Clean Nursery Stock: It makes sense to start out with disease-free vines, right? Unfortunately, there is no "Government-approved" GTD nursery certification program operating in the U.S., and we do not have an efficient way to test quickly for these GTDs. We have a long way to go before this gets done. In the meantime, I would suggest sending in a few vines of your intended new planting for analysis. My experience has shown that it takes about 20 or more days, after the lab receives the sample, to get back results. I have paid \$125 to \$130 per sample to get this done.

8. Healthy Grapevines: These are key to keeping many of these GTD organisms at bay. Many of the GTD organisms are endophytes. They are parasitic organisms that live within the vine and cause no harm unless something triggers them to do so. Declining vine health could trigger them to become pathogenic. These are insidious diseases in that they exist without marked symptoms but are ready to become active.

Grapevine trunk disease research is a relatively new discipline when compared to other grape pest research, but our knowledge of GTDs is quickly expanding. While we have a lot yet to learn, the advent of new DNA molecular tools and computerized equipment has dramatically increased our ability to identify the many species that can cause GTDs. Here are a few additional sources for more information on grapevine trunk diseases:

- 1. SCRI Trunk Disease Project. Detection, resistance and extension information on grapevine and orchard trunk diseases from California and Virginia.
- 2. Northern Grapes Project, one-hour webinar (held on December 11, 2018) on GTDs by Dr. Jose Ramon Urbez Torrez, research scientist at the Agriculture and Agri-Food Canada, Summerland Research and **Development Centre**, in South Summerland, British Columbia.
- 3. Trunk Disease Management for Eastern Grape Growing Regions, Dr. Mizuho Nita, grape pathologist at Virginia Tech University.
- 4. 11th International Workshop on Grapevine Trunk Diseases, July 7-12, 2019. Penticton, British Columbia. WBM

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Hundreds of wineries and vineyards, and even glass producers, have been officially certified as sustainable. Do consumers understand sustainability benefits and what, if any, financial profits wineries derive from accreditation and the labeling?

Michael S. Lasky

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

**WHEN THE NON-PROFIT INDUSTRY** research-based **Wine Market Council** queried knowledgeable wine consumers about what value they derived from sustainability certification noted on wine labels, most of the responses mirrored this one from a 59-year-old male: "If it is on the label, it is extremely important to me that a third party is certifying that the wine has been made from organically, sustainably, biodynamically produced ingredients. The reason it is important to me is for truth in advertising and ethical reasons, not that I want to buy [the bottle]."

### What Does Third-party Sustainable Certification Involve?

Green vocabulary continues to confuse consumers who, for lack of education on the subject, cannot distinguish between wines labeled sustainable, organic and biodynamic. Although the various icons on bottle labels offered by the third-party certification organizations offer proof to consumers that the wine and the winery have passed the legion of rigorous criteria to earn coveted certification, most consumers have only a tenuous concept of the effort behind it. What's more, there are different sets of criteria for vineyards and wineries.

The sheer number of third-party organizations that perform the certifications and the corresponding use of bottle labels can be confusing for a consumer. Each is issued by a cadre of various county groups, state organizations and national professional bodies, each with their own criteria. For example, there's the **California Sustainable Winegrowing Alliance** created by the **Wine Institute** and the **California Association of Winegrape Growers** with 143 wineries and 1,398 vineyards certified in California.



**Napa Green**, a comprehensive sustainability certification program for vineyards and wineries in the Napa Valley, now boasts that under its stewardship, 55 percent of Napa vineyard acreage is certified sustainable with over 250 wineries participating. **Sustainability in Practice**, AKA SIP-Certified, has some 200 California wineries that have earned the right to place the organization's icon of approval on their bottles. While it began as a regional program for the Central Coast AVAs in 2008, it expanded to the entire state a few years later. Add to these third-party certifiers in Oregon and Washington and it's easy to realize how the multitude of various well-intended groups are potentially overwhelming to consumers. Winery and vineyard owners certainly have to jump through a multitude of regulatory hoops to receive their sustainability certification, which can take years to achieve. While each third-party program has closely related sets of criteria to be completed, the best example of exactly what's involved comes from the largest accreditation organization, the **Certified California Sustainable Winegrowing**, which demands potential participants match the 140 vineyard and 104 winery assessment criteria found in a Code Workbook divvied into four categories that describe the level of sustainable practices adoption. (The full packet can be viewed or downloaded at *www.sustainablewinegrowing.org.*)

Maintaining certification is not just a pass-once-and-you're-done deal. While it is a voluntary option for wineries and vineyards to meet the set of requirements, it is also a commitment to annual evaluations by the thirdparty auditors. What's the ostensible pay-off that makes all this effort this worthwhile?



### The Sales Benefits of Sustainability Certification

The interest in sustainable winegrowing and wine production started long before the panicked conversations we hear now about global warming and its existential threats. And as **Allison Jordan**, executive director of the California Sustainable Winegrowing Alliance, told **Wine Business Monthly**, "A strong environmental stewardship ethic, the business benefits of sustainability (e.g., efficiency, cost savings, employee retention, risk reduction), peer-to-peer education and testimonials, and a desire to pass a sustainable business on to family and the next generation were among the early drivers. Survey respondents said the most effective way to promote certified California Sustainable Winegrowing was to have "clear and highly visible labeling or identification on the package of wine" (80 percent) followed by "education at consumer tastings and events" (78 percent).

"In the mid-2000s, we started hearing from wineries that they were seeing and hearing an increased interest in sustainable winegrowing from both their gatekeepers—retailers, restaurateurs, distributors—as well as consumers. Accordingly, to help vineyards and wineries credibly communicate their sustainability efforts, and to help the trade and consumers identify vineyards,



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we launched the Certified Sustainable program in 2010 (updated in 2017) for wineries and wines that meet stringent standards that are verified during annual third-party audits," explained Jordan.

What has followed is a slew of market research projects to not only identify the growing interest from both trade and consumers for sustainable vineyards and wineries, but the actual, tangible and perceived benefits sustainability has proffered. Jordan, who is also vice president of environmental affairs for the Wine Institute, pointed out some of the salient highlights of the research survey results found by the Wine Institute and CSWA:

• The research showed that in its 2016 survey a majority of the U.S. wine trade respondents (retailers, distributors, on premise and media) consider sustainability when making purchasing decisions and expect demand to grow in the next decade.

• Among other findings, the 2016 survey respondents said the most effective way to promote certified California Sustainable Winegrowing was to have "clear and highly visible labeling or identification on the package of wine" (80 percent) followed by "education at consumer tastings and events" (78 percent).

• Fifty percent of the respondents said labeling impact on sales and marketability would improve sales somewhat, and 17 percent said it would improve sales a lot.

"Keep in mind, it's still the early days of sustainability logos appearing on wine bottles, so we'll have a much better sense of consumer and trade interest and whether there truly is a 'willingness to pay more' in the coming years."

#### Allison Jordan

Although every sustainability organization offers logos and icons that can be placed on bottles for wines that have been certified, the Sonoma County Winegrowers are attempting to transform these static sustainable identifiers into a standout marketing talisman.

According to Karissa Kruse, president of the Sonoma County Wine-

growers, "We are focused on achieving break-through marketing to elevate the Sonoma County wine region but also leverage our sustainability commitment with a regional first: augmented reality."

Following in the footsteps of the phenomenal success experienced by the augmented reality labels pioneered by Treasury Wine Estates, which uses its Living Labels smartphone app to bring the labels "alive" to engage consumers, most of whom are Millennials, the Sonoma County Winegrowers' effort will aim to do the same. "The effort will be focused on sustainability for wineries using the Sonoma County Sustainability Farmed Grapes label," noted Kruse. Similarly, with the Sonoma app, consumers can place their phone over an augmented reality wine label, which will display video with stories and information about the wine in the bottle and highlights of Sonoma's sustainability.

But as Allison Jordan cautioned, "Keep in mind, it's still the early days of sustainability logos appearing on wine bottles, so we'll have a much better sense of consumer and trade interest and whether there truly is a 'willingness to pay more' in the coming years. Given the wide participation and broad adoption of sustainable practices over the past couple of decades, the California wine industry is well positioned to meet the growing interest of trade and consumers. It's also important to remember the multiple benefits that sustainable winegrowing offers vineyards, wineries, the environment, employees, communities and beyond."

### Wente Vineyards: Multi-Generational Family Winery Profits from Sustainable **Practices**

As the fifth-generation winegrower and viticulturist with her family's winery, Niki Wente was forthright when she declared, "Sustainability in the vineyard has always been our practice, and we wouldn't still be here after 136 years otherwise."

Having only used sustainable practices, does she think sustainable vineyards make for better wine? "I don't know if there's a way to prove that this makes for better wine, but I do believe it. I think that when you use higher



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### Wente Vineyards is Certified Sustainable



Wente Vineyards is proactive in promoting its sustainability certification and practices on its labels.

WENTE VINEYARDS

grade chemicals, you're definitely going to leave some residual effects on the fruit whereas when you're using a really light low chemical and only using it when it's absolutely necessary, you're not just using it to be preventative: you're using it to make sure that there's nothing going wrong with your fruit that it's going to produce a higher quality product, and you're not having those residual effects of the higher grade chemicals," Wente said.

The Livermore, California winery notes on the back labels of its wines that its vineyards are "Sustainably Farmed" and, since 2017, have also displayed the California Certified Sustainable Logo. *WBM* asked Niki Wente if she thought it ultimately makes a difference to the consumer.

"I think that that's the way that the world is moving. We read more and more about people who are really worried about the environment. As a consumer, I think that that would drive a decision when you're purchasing a bottle of wine. I know a lot of people purchase wines that are organic, which is kind of on the same sustainability, organics, biodynamics wavelength. People who make those choices are looking at the label and seeing if it does say organic wine or sustainable wine, that sort of thing. For other consumers, as they learn more about the differences between conventional farming compared to sustainable, sustainable notations on wine labels will become valuable to their buying decisions," Wente maintained.

### A Bottle Shape that Screams Sustainable

With an eye to the expanding presence of sustainably farmed wines, Francebased **Saverglass** has begun to roll out bottles specific to this growing market under the Solstice line. "We have met the need of the market by introducing a fully innovative concept with Solstice. We designed and manufactured this product line dedicated and perfectly recognizable for the consumers of organic and biodynamic wines," explains **Régis Maillet**, group marketing director for Saverglass.

The bottle was designed for organic, biodynamic and natural wines—that with this specific bottle shape consumers would be able to tell that the wine inside was farmed in these manners.

"Distinguished by its original shape, which follows the ovoid contours of the vats often used by organic and biodynamic wine producers, the Solstice has a small, round semi-circular punt, measuring 21 mm deep, invokes the image of a quarter moon. Its unique silhouette, specially designed to highlight and identify organic and biodynamic wines, makes it a perfect bottle designed in harmony with the wine. Beyond the decidedly modern aesthetics, however, Solstice also incorporates a more practical design element—similar to decanters, the bottle's slender neck combined with its ovoid-shaped body effectively helps to aerate the wine," adds Maillet.

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### Sustainable Bottles: A Glass Ceiling

The **Glass Packaging Institute**, is the trade association for North American-produced glass, certainly makes a persuasive case for American, sustainable wineries to maintain this practice by opting for choosing glass manufactured in North America.

Because the market for organic, sustainable and biodynamic wines continues to grow, particularly in the U.S., according to a report from the British-based beverage alcohol analyst **IWSR**, the demand for glass bottles likewise continues to climb. According to a report by *Forbes Magazine*, wine bottle sales reached over \$4.3 billion and is predicted to increase 14 percent by 2022.

Sustainability doesn't just stop in the vineyards, GPI points out, by noting domestic glass bottles are endlessly recyclable, as well as ocean-safe. Although Chinese glass vendors gained market share with their competitive prices, the threat of increased tariffs and invariably uncertain labor issues at West Coast ports have increased the demand for domestic glass.

While the limited capacity of North American glass production for premium bottles continues to ease somewhat, the three largest wine bottle producers, **Ardagh Group**, **Gallo Glass** and **O-I**, are increasing their product lines with sustainability in mind both for glass design and transportation savings, the latter with an eye to sustainability's demand for carbon reduction.

### Sustainability as a Package: The Current Take-Away

Third-party verification of practices adds significant value to sustainability claims. As the marketplace interest for sustainably grown and produced wine continues to grow, this independent validation becomes increasingly important. While there is experiential evidence that conducting sustainable practices does reduce winery and vineyard expenses, even after the first year of certification, there is no corresponding proof that it leads to increased profit for wine sales.

Sustainability is a valuable talking point, particularly with distributors and on-premise accounts, and the domino effect of this will eventually trickle down to the consumer interest in buying sustainable products. **WBM** 



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### Two Studies Measure Consumer Preferences for Wine Closures

#### Stacy Briscoe

**Stacy Briscoe** joined *Wine Business Monthly* in 2018. She has been writing about wine professionally since 2015, freelancing for multiple publications including The *San Francisco Chronicle*, Edible Communities and *Napa Sonoma Magazine*, among others. She also maintains her own website, *BriscoeBites.com*, dedicated to wine reviews and tasting notes. Outside of wine writing, she also contributes as a freelance editor for the independent publisher She Writes Press. Stacy has a Bachelor of Arts degree in English-Language Literature from the University of California, Santa Cruz.

**DECIDING ON THE PROPER** closure is one of the most important decisions a winemaker makes. It not only affects the flavor and aging process of the wine inside, but also the aesthetics—both visually and tactilely—in the consumer's eye.

Traditional corks utilize precious natural resources, can be expensive and are, of course, at a higher risk for TCA taint. And yet they evoke a sense of elegance and romance for most wine drinkers. They symbolize a wine's value and ageability.

The science and innovation behind alternative closures—from screw caps to synthetic corks, and even glass stoppers—are constantly evolving. Using a non-traditional cork now has the benefit of reducing a winery's carbon footprint, as well as production cost, and often eliminates the worries surrounding cork-related taint issues. Yet, alternative closures tend to give the perception of a lower-valued wine, one that must be consumed straight-away and not preserved for either sentimental reasons or for enhanced enjoyability.

The following studies take a close look at how consumers react to various wine closures, how this translates to their perception of the wine and suggest that there may be hope for the success of alternative closures in the mass market in the near future.

### **Consumer Perception of PlantCorc** Versus Traditional Cork

In 2013, **Vinventions' Nomacorc** brand introduced PlantCorc, an alternative wine closure made from sugarcane-based polymers. The company claims using sugarcane not only cuts carbon dioxide emission by 90 percent, leaving a -1 carbon footprint, but that the product is also 100 percent taintfree: "With a consistent and controlled oxygen ingress, wine is preserved for up to 25 years and guaranteed TCA- and fault-free," according to the company's marketing materials.

How do consumers respond to this anti-traditional wine cork? For three months, from July to September 2018, Vinventions conducted a consumer research survey to assess consumers' perceptions of the Nomacorc Reserva

PlantCorc closure against a traditional cork closure. The objective of the research was to answer the question, "To what extent does such a closure conform to the qualities of high-end wines?" in a world where alternative closures are often associated with lower-value wines.

Vinventions partnered with scientific marketing organization **Mind Insight**, to conduct the survey at the **Mind Insight Laboratory** in Louvain, Belgium. A total of 160 participants between 25 and 60 years old (50 percent men, 50 percent women) from France and Belgium were presented with an entry-level synthetic closure, a Nomacorc Reserva closure and a premium natural cork.



According to Vinvention's head of wine marketing solutions division, **Romain Thomas**, all closures were shown for the same amount of time, at the same angle, with the same luminosity and with the script ("mise en bouteille"). The participants were not asked any questions, simply instructed to rate the corks on a scale from 0 to 100 on premium/luxury perception—all to "avoid biases and obtain relevant results."

"Once limitations and biases were eliminated, consumers did not associate Nomacorc PlantCorc closures with low-quality wines," said Dr. **Stephane Vida**l, vice president of brand management and enology at Vinventions, in a press release. "On a scale from 0 to 100 of premium/luxury awareness, they ranked it to be at 87 points."

Thus, the results concluded that consumers associated the Reserva closure with wines that are premium-tier or above.

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### How Closure Type Affects Perceived Intrinsic Attributes of Wine

The *International Journal of Hospitality Management* published a similar study<sup>1</sup> in 2018, looking at how closure type—natural, screw cap, synthetic cork and glass stoppers—affected the perceived intrinsic attributes of a wine (appearance, taste, aroma and overall quality). The study did not specify name brand, manufacturer or supplier of the various closures.

A total of 310 individuals from Pullman, Washington participated in the study. To ensure a broad range of participants, the study was held during **Washington State University**'s 2013 Dad's Weekend. The study was conducted over three days to "enhance the representativeness of the sample."

Participants sat at a testing station and were presented with a placemat with labels that identify the wines to be tasted as "A," "B," "C" and "D" (although only two different red blends were used during the testing). Each placemat also had a photo display of a closure—natural cork, screw cap, synthetic cork and glass stoppers.

The study showed that wines associated with natural corks were rated significantly higher than wines with either screw caps or artificial cork. However, when compared to glass stoppers, there was no significant differentiation in the participants' ratings between the wines associated with glass and natural cork closures. When participants were provided only alternative closures—synthetic cork, screw cap and glass stoppers—to view alongside their wines, the wines with the glass stoppers were rated moderately higher than the others.

The study concluded that closure type does, in fact, influence a person's perception and experience of a wine and that, overall, consumers still prefer a natural cork. However, it also stated that, though the evidence was "far from decisive," glass stoppers may be an adequate replacement for luxury-tier wines looking to move away from natural cork usage. "Glass stoppers are very attractive, easy to open, reusable and, most importantly, help prevent cork taint," the study concluded, suggesting that industry practitioners should "capitalize on this opportunity and market the glass stopper as a luxury-style alternative to natural cork."

### What the Wine Industry Should Consider

Despite the high marks for the Normacorc alternative cork and the "attractive" aesthetic of glass closures, it seems that traditional cork is still the overall winner in the wine closure race for consumer approval. Yet, both studies prove that, given the right type of closure, that race is a tight one.

What this means is that there are viable options for wineries and wine brands looking to deviate from tradition. But they must consider those options carefully: How does the closure fit in with the branding and design aesthetic? How does the closure preserve the wine? What does this closure say about the wine's style and/or flavor profile? And, arguably the most important, how will this closure type affect consumer perception, if at all? **WBM** 

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Reynolds, D. International Journal of Hospitality Management [2018], doi.org/10.1016/j.ijhm.2018.05.023

### Retail Sales Analysis: Off-Premise Sales Increase in Value, Slip in Total Volume

Wines Vines Analytics

### January Sales Value Up 2.5 Percent Over Previous Year

Total U.S. off-premise sales tracked by **Nielsen** topped \$1 billion in January, a 2.5 percent increase over January 2018. In the past 52 weeks ended Jan. 26, sales of table wine rose 1.6 percent to \$14.3 billion.

### Sales Volume Slips by 0.5 Percent

Off-premise sales volume came to 11.8 million 9L cases in January, a 0.5 percent decline from last year. The 52-week total in 2019 was 162 million, which was 0.8 percent less than the previous year.



### Sales of Wine in 750 ml Bottles Up 3.4 Percent by Value

Glass remains the dominate packaging for wine sold in the off-premise sector. Total table wine sold in glass accounted for \$917 million of the more than \$1 billion worth of wine sold in January, an increase of 1.9 percent for the month and 1.1 percent for the 52 weeks ended Jan. 26. Wine sold in glass had an 89 percent share of total off-premise sales value.

Sales of wine in 750 ml bottles increased 3.4 percent in January to \$741 million and the 52-week total rose by 2.4 percent to \$10.3 billion. By volume, 750 ml glass sales totaled 5.9 million cases in January, a 0.7 percent increase, and 82.9 million for the past 12 months.

At higher prices, glass bottle sales outpaced total wine sales by an even larger margin. Sales for wines in glass bottles at prices higher than \$11 all saw substantial increases in January with wines in the ultra-premium category of \$15 to \$19 growing 12 percent to \$95 million. Luxury glass (\$20-\$24.99) saw a 10 percent sales increase to \$42 million. These two categories accounted for 8.8 million in total volume in the past 52 weeks.

The average price per 750 ml in the ultra-premium category was \$17.14 in January, a \$0.14 decrease from the year previous, and the average price in the luxury category was unchanged from 2018 at \$21.69.

### Large Volume Glass Declines, Alternative Sales Up

Despite its dominant position, glass continues to lose market share to alternative packaging. Glass packaging other than 750 ml bottles also continues to see weaker demand from consumers. Wine sold in 1.5L bottles dropped 4 percent in January to \$156 million and fell 5.2 percent in total volume to 2.7 million cases. In the past 52 weeks, these larger bottles also saw declines of 4.4 percent in value and 4.9 percent in volume. Smaller, 187 ml bottles also saw a 1 percent dip in value to \$7.5 million and a 3.5 percent decline in volume to a little less than 91,000 cases in January.

Tetra Pak and all sizes of boxes, except 5L, saw sales increases in January. Tetra Pak wine sales jumped by 16 percent to \$17 million in January and were up 13 percent to \$218 million for the past 52 weeks. One liter boxed wine sales led the category in growth during January increasing by more than 18 percent to \$2.3 million and growing 15 percent by volume to more than 34,000 cases. **WBM** 

#### Methodology

Sourced from Nielsen, 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. Nielsen figures are updated and released every four weeks.

### Nielsen Table Wine Category Segments MARKET: Total US xAOC+Conv+Military+Liquor Plus PERIOD: Week Ending January 26, 2019

nielsen	Dollar Value		Dollar Value % Chg YA		9L Equivalent Volume		9L Equivalent Volume % Chg YA		Avg Equivalent Price Per 750ML	
I IICISCII	Latest 52 Wks - W/E 01/26/19	Latest 4 Wks - W/E 01/26/19	Latest 52 Wks - W/E 01/26/19	Latest 4 Wks - W/E 01/26/19	Latest 52 Wks - W/E 01/26/19	Latest 4 Wks - W/E 01/26/19	Latest 52 Wks - W/E 01/26/19	Latest 4 Wks - W/E 01/26/19	Latest 52 Wks - W/E 01/26/19	Late: Wks - V 01/26
TOTAL TABLE WINE	14,321,585,179	1,038,572,095	1.6	2.5	161,941,014	11,768,574	-0.8	-0.5	7.37	7
BOX	1,353,425,666	104,352,898	4.7	6.1	33,377,322	2,532,874	2.1	2.9	3.38	3
<mark>ي \$0-\$3.99</mark>	574,057,504	43,552,090	-1.9	-0.3	20,229,056	1,517,060	-2.4	-1.4	2.37	:
\$4+ Total Table Wine Glass Value Glass \$0-\$3.99	778,965,093	60,645,198	10.2	11.0	13,143,483	1,013,855	9.9	10.0	4.94	
Total Table Wine Glass	12,721,147,758	916,568,751	1.1	1.9	125,357,823	9,014,724	-1.8	-1.6	8.46	
	708,955,432	52,233,937	-4.2	-7.0	17,742,818	1,290,275	-5.8	-9.1	3.33	
Popular Glass \$4-\$7.99	3,229,121,740	235,704,697	-5.5	-4.2	49,090,072	3,570,846	-5.7	-4.6	5.48	
Premium Glass \$8-\$10.99Super Premium Glass \$11-\$14.99	3,432,072,969	247,495,748	-0.9	-0.7	30,331,153	2,162,064	-1.1	-1.2	9.43	
F     Super Premium Glass \$11-\$14.99       U     U	2,706,806,028	193,397,656	7.3	8.7	17,889,048	1,262,031	7.3	8.5	12.60	1
Ultra Premium Glass \$15-\$19.99 Luxury Glass \$20-\$24.99	1,306,768,715 613,231,619	94,516,301 41,707,708	9.8 8.0	12.3 10.1	6,395,050 2,380,146	459,278 160,216	10.1 8.1	13.2 10.3	17.02 21.46	1
Super Luxury Glass \$20-\$24.99	718,952,642	50,692,023	8.0 4.9	5.7	2,380,148	100,218	3.5	5.5	39.94	4
IMPORTED	3,787,957,570	266,898,685	1.8	2.4	40,286,173	2,895,879	-0.3	-0.2	7.83	4
ITALY	1,186,431,015	86,343,178	1.5	5.2	10,506,262	757,022	-0.5	-0.2	9.41	
AUSTRALIA	731,179,662	55,986,082	2.8	-1.0	12,039,205	924,099	0.1	-1.9	5.06	
FRANCE	458,397,673	25,301,411	9.7	8.7	2,974,045	161,729	9.2	5.3	12.84	1
CHILE	257,445,165	18,824,872	-4.5	-3.7	3,844,299	285,366	-3.3	-2.2	5.58	
GERMANY	165,315,608	11,731,564	-2.1	-3.0	2,085,303	151,350	-1.0	-2.4	6.61	
	83,649,858	5,655,440	-4.9	-1.0	823,422	56,326	-2.1	2.4	8.46	
NEW ZEALAND	469,262,028	31,448,652	8.7	10.1	3,382,730	224,818	7.9	8.7	11.56	
ARGENTINA	343,795,689	25,750,030	-7.8	-5.9	3,783,899	282,876	-9.4	-7.9	7.57	
SOUTH AFRICA	24,447,532	1,617,884	-9.7	-4.3	212,379	14,222	-9.9	-4.9	9.59	
PORTUGAL	41,312,599	2,575,969	11.7	16.8	453,748	27,298	7.2	10.3	7.59	
DOMESTIC CALIFORNIA	10,533,627,609	771,673,410	1.5	2.6	121,654,841	8,872,695	-1.0	-0.6	7.22	
	9,491,687,596	698,894,491	1.4	2.5	112,978,148	8,274,612	-1.1	-0.7	7.00	
WASHINGTON	617,359,308	42,450,892	2.0	0.2	5,164,789	348,879	1.6	-1.1	9.96	
OREGON TEXAS NEW YORK	193,599,185	13,911,640	13.2	15.5	990,098	69,327	12.6	12.4	16.29	
TEXAS	32,160,233	2,443,097	-2.5	0.2	393,762	29,883	-5.3	-1.5	6.81	
—	36,285,199	2,205,834	-1.3	-3.6	502,414	33,300	-3.8	-4.9	6.02	
NORTH CAROLINA	40,555,372	3,001,411	1.1	2.0	423,836	31,177	0.7	-1.5	7.97	
	23,637,377	1,870,921	-0.2	12.5	262,614	20,481	-1.3	10.8	7.50	
MICHIGAN	22,247,227	1,459,969	-1.5	2.8	242,652	15,855	-1.1	3.3	7.64	
WHITE	7,399,860,034 5,839,144,936	562,064,737 409,496,513	1.1 0.4	1.3 2.9	74,706,322 70,810,724	5,646,733 5,011,503	-1.4 -1.2	-1.8 0.4	8.25 6.87	
	1,081,239,187	66,954,302	12.8	10.9	16,409,553	1,109,795	-1.2	2.5	5.49	
TOTAL CHARDONNAY	2,550,861,720	181,111,971	0.0	1.6	30,256,672	2,163,199	-1.7	-1.1	7.03	
TOTAL CABERNET SAUVIGNON	2,628,433,045	201,357,091	3.7	3.7	24,698,815	1,894,607	1.0	0.4	8.87	
TOTAL PINOT GRIGIO/PINOT GRIS	1,307,579,109	91,229,537	1.4	4.6	17,073,726	1,206,301	0.8	3.5	6.38	
TOTAL PINOT NOIR	1,076,822,719	81,086,170	2.5	3.0	8,442,834	630,765	0.4	-0.4	10.63	
TOTAL MERLOT	747,246,851	55,342,006	-5.8	-5.6	10,451,474	774,465	-6.6	-7.2	5.96	
TOTAL SAUV BLANC/FUME	942,058,775	63,992,940	6.2	9.8	8,311,839	565,881	4.4	7.2	9.44	
TOTAL MUSCAT/MOSCATO	650,615,940	49,630,016	-1.6	1.6	9,961,449	748,581	-2.7	-0.3	5.44	
TOTAL MUSCAT/MOSCATO TOTAL WHITE ZINFANDEL	287,426,313	20,474,994	-7.8	-6.7	5,837,388	413,536	-8.5	-7.8	4.10	
TOTAL MALBEC	266,036,590	19,930,374	-7.3	-6.7	2,507,456	188,344	-8.2	-8.1	8.84	
TOTAL RIESLING	246,588,224	16,941,677	-5.3	-2.7	2,742,297	188,368	-5.0	-2.5	7.49	
TOTAL ZINFANDEL	228,838,973	17,186,119	-1.7	1.3	1,643,911	122,800	-5.2	-1.9	11.60	
TOTAL SHIRAZ/SYRAH	152,770,454	11,274,234	-5.7	-7.8	1,767,158	129,992	-9.0	-12.0	7.20	
WHITE BLENDS (ex. 4/5L)	227,685,679	15,124,401	-4.9	-2.3	2,778,890	191,877	-3.8	-2.2	6.83	
RED BLENDS (ex. 4/5L + CHIANTI)	1,855,397,595	142,506,666	3.1	2.8	17,196,181	1,314,253	1.7	0.8	8.99	
ROSE BLEND	504,338,477	24,565,027	42.2	49.3	4,349,687	232,022	45.6	47.0	9.66	
750ML	10,322,800,481	740,705,979	2.4	3.4	82,940,896	5,923,009	0.1	0.7	10.37	
<b>SH</b> 1.5L SH 3L	2,116,206,635	155,681,505	-4.4	-4.0	36,640,876	2,686,363	-4.9	-5.2	4.81	
	63,978,145 81 308 055	4,809,672	-8.5	-7.3 -9.3	1,688,344	125,228	-9.7 -10.2	-9.7	3.16	
<b>SS</b> 4L 187ML	81,308,055 107,656,800	5,676,867 7,483,108	-7.4 -1.3	-9.3	2,610,945 1,327,093	179,536 90,888	-10.2 -2.9	-12.9 -3.5	2.60 6.76	
375ML	17,517,616	1,231,226	-1.3	-1.0	68,685	90,888 4,430	-2.9 7.2	-3.5 -1.2	21.27	:
ex. 4/5L	863,032,183	67,650,277	9.0	10.9	15,434,780	1,200,974	8.1	9.5	4.66	
11	29,022,817	2,280,636	9.4	18.4	440,620	34,089	7.4	15.1	5.49	
SE 1.5L	14,678,452	1,136,837	3.3	9.3	238,613	18,518	3.9	10.6	5.13	
X 3L	630,508,022	49,537,890	8.0	9.5	12,203,130	954,669	7.5	8.8	4.31	
8 3L 5L	490,391,646	36,702,498	-2.0	-1.7	17,942,492	1,331,897	-2.5	-2.4	2.28	
TETRA	218,193,470	17,005,185	13.1	15.7	2,996,270	228,049	11.9	12.7	6.07	

Source: Nielsen

### What Keeps CFOs Up at Night?

Finance chiefs from three high-end Napa wineries share their concerns and solutions.

Jim Gordon

**WHAT KEEPS NAPA VALLEY** winery CFOs up at night? The chief financial officers for three luxury wine producers said the things that give them insomnia are: how to raise prices fast enough to keep pace with rising costs, how to forecast the future, and how to recruit and retain talented employees in the somewhat remote wine country.

These were among the issues raised and debated at the **Wine Industry Financial Symposium** last fall during a session titled "CFOs Talking Shop." Moderator **Ian Malone** of **Aspect Consumer Partners**, a mergers and acquisitions advisory firm, coaxed the CFOs of **Rombauer Vineyards**, **Huneeus Vintners** and **Opus One Winery** to name their biggest challenges and opportunities and share some of the ways they manage those.



### How to Raise Prices

How and how often to "take price" was a recurring topic during the 75-minute discussion. "It seems like we are in an environment where costs can go up any time, broadly speaking. It is difficult to take price up, though," said **Matthew Owings**, CFO at Rombauer, a St. Helena, California winery founded in 1982. Rombauer produces 75,000 cases with an average price of \$61 per bottle.

"There are things you can do," continued Owings, who took over as Rombauer's CFO in January 2018 after working in positions at **Jackson Family Wines, Bain & Company** and **Agilent Technologies.** "You can take prices up 1 to 2 percent a year, but costs go up by 3 to 5 percent, so how does that play out? There's a number of levers you can pull. You can take price up faster, you can change the appellation, you can cost-engineer or you can change your channel mix—none of which is very comfortable." Jim Gordon, editor at large for *Wine Business Monthly*, writes and edits articles on grape growing, winemaking and wine marketing. He has been covering wine and the wine business for more than 35 years, notably as the editor of *Wines & Vines* from 2006 through 2018. A role as contributing editor for *Wine Enthusiast* magazine began in 2014, in which he reviews California wines and reports on various California wine regions. He was executive director of the annual Symposium for Professional Wine Writers at



Meadowood Napa Valley, from 2008-2015. Dorling Kindersley (DK Books) of London published his first book as editor in chief, Opus Vino, in 2010, which was chosen as a finalist in the James Beard Awards. In 2002 he was co-creator and managing editor of the long-running Wine Country Living TV series for NBC station KNTV in San Jose/San Francisco.

Owings said that Rombauer has been successful in raising its prices; but as a one-brand company, it hasn't had many of the options he listed while many bigger firms do. "We're a little family wine business, and Rombauer is the only brand we have, so we have to plan not for the next 10 years but for the next 10 generations. We may see a trend that's going to put some stress on our financial model. That's easy to identify, but the answers are more difficult to come by. How do we sustain a successful financial model in the long term?"

Rombauer seemingly revealed one of the answers when the company announced in January that it had purchased the **Renwood Winery** facility in Amador County. The sale included 20 acres of vineyards, the wine production facility and the tasting room located on Steiner Road in Plymouth, California. The move enables Rombauer to more easily expand production of its popular Zinfandel wines in a relatively low-cost region at a large facility with a built-in and popular visitor space.

For Opus One, regular price increases are expected by their buyers. "We take a price increase every year, and we don't have any issue making it stick," said **Robert Fowles**, CFO at the Oakville winery since 2006. Fowles had previous CFO experience with companies, including **Spectrum Organic Products** and **Diageo**, now the world's largest producer of spirits. Opus One reports producing 25,000 cases per year at an average bottle price of \$180. The winery is a 50-50 joint venture between **Constellation Brands** and the French company **Baron Philippe de Rothschild**.

"I think too many premium wineries are overly concerned about raising prices because, if you've got pricing power, you're usually overly conservative with it and don't use it as much as you can," Fowles said. "We could probably push the prices even harder than we do, but there's a fine line before you're being too greedy and turning off a lot of wholesalers. They know there's always going to be a price increase on Opus every year of some modest amount, and we'd rather stick with that model. They're always expecting it, and we just announce it."

### **Price Elasticity of Demand**

The third panelist, **Shannon McLaren**, became CFO of Huneeus Vintners in 2018. She talked about price increases in terms of price elasticity of demand, calculated by the percentage volume of sales lost divided by the percentage price hike taken. "I say good luck when you try to take a price increase. At these conferences every year they say this is the year to take price. But it's definitely an art and not a science."

McLaren is in charge of finance and human resources for the dynamic, multi-brand company that sold **The Prisoner** wine brand to Constellation Wines in 2016 for \$285 million. Huneeus Vintners produces about 90,000 cases priced between \$35 and \$175 per bottle and spread among brands and properties, including **Quintessa Vineyards** and **Faust** in Napa Valley, **Flowers Vineyards and Winery** on the Sonoma Coast and **Benton-Lane Winery** in Oregon.

"I've been on the unfortunate side of price elasticity," she said, referring to a previous job where the company took a price increase of less than 10 percent on a brand and lost greater than 30 percent of its volume, meaning the price elasticity was negative 4. (*Editor's note: many people drop the negative notation in conversation.*) She has also experienced much better results, including a 10 percent price increase that sparked only a volume loss of 10 percent, thus a price elasticity of 1, which is considered good.

"Taking price is hit and miss. A lot of information is not readily accessible on the competition so how do you know that? It's really difficult, but at the end of the day, costs are rising, so we have to do something," McLaren said.

Owings added that price elasticity has its limits in terms of usefulness, however. "If you're in the commercial grocery retail business, an elasticity

of 2 is normal for the average widget, but for wine, around 3 is not unusual. It's a good guess. That's just because it's so competitive. The economics of that will tell you to drop your price and increase your volume. That's a short-term move to maximize profit; but if you keep it up, you're cashing out your brand. As a family company, we can't afford to do that. Wineries with multiple brands are more able to."

### **Directing HR, Too**

Two of the three CFOs on the panel direct human resources and information technology in addition to finance at their companies. McLaren at Huneeus said a lot of synergies exist between finance and human resources, so it makes good sense for HR to report to the CFO. As Huneeus prepared to open two new tasting rooms for their brands, she said, it's a good example of how a growth strategy and HR intersect.

"It is tough to attract and retain the talent for those rooms," McLaren said. "It's not just about base pay, but about what's the right balance between benefits and pay. We just started a new committee—a group of people on the management side that represent each part of our business—so we can ask them what's working. It will be multiple people's jobs to find the talent, and that includes referral bonuses to encourage people throughout the organization to help, too."

McLaren and Owings both noted that the supply of potential finance staff employees is thin in Napa Valley, especially because of the strong pull of tech companies in Silicon Valley and San Francisco. "It's a location question,"



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#### What Keeps CFOs Up at Night?

McLaren said. "When I worked in the East Bay, it was already hard to pull people there, and now it's harder to pull them this way."

Owings added, "There is so much money and so much excitement in the Bay Area that it makes it hard to pull people up here." But that doesn't mean it's impossible.

Fowles said that Opus One attracts people with a suite of incentives and perks. "At Opus One everybody's job is important, whether you're the custodian or the CEO. Everybody is in the same incentive plans; everybody gets the same benefit package. We use the **Western Management Group**'s compensation survey and we target our base pay to be at the 75th percentile so we can try and attract the best talent and not have people leaving for a better job somewhere else."

Fowles said Opus One has a "Fun Committee" that helps keep employees happy. He said that Millennials, in particular, "are just going to quit, literally, if they're not having fun and don't have a best friend at work. So we're trying to react to that."

The fun stuff and other benefits at Opus One include:

- Pi Day on March 14 (when the date approximates the value of pi)
- · An educational reimbursement for undergrad and graduate degrees
- Allowing any employee to work for a charity up to 40 hours per year on paid time
- \$250 gifts toward stress-reducing activities, like gym memberships or massages
- Company-paid visits of an ice cream truck to the winery on hot summer days
- A lunch to celebrate the end of the noisy annual maintenance week.

### **Thoughts on the Expected Recession**

One thing the CFOs said they were not losing sleep over was an impending recession. "So I've heard there's going to be a recession, but 'I've chosen not to participate,' in the words of **Walt Disney**. I am not letting that keep me up at night," said McLaren.

Her rationale? Wine production has the inherent unpredictability of an agricultural enterprise subject to the whims of the weather, so wineries are accustomed to uncertainty. She said she was focused on finding the right ways to grow the business rather than bracing for tough times.

Fowles acknowledged that the economic expansion wouldn't last forever: "You know it's coming, but at the luxury end we usually skate through. Most of our consumers are not affected by macro-economic trends like the average consumers are. Even in the Great Recession we took a price increase, a modest 2 percent, in 2009, and it was an amazingly bold statement. We got feedback from the wholesalers that we were one of the few wineries that didn't do stupid things like offer BOGOs (buy one, get one at a discount). We never do that anyway.

"Once the recession ended, and it ended quickly, we did see some impact, but it was very short-lived," Fowles added. "If you're really wealthy and if spending \$1,000 on a bottle of wine from a restaurant wine list is normal, then you get tired of frugality really, really fast. We kind of laughed when pundits said that luxury is dead. Sure enough, in 2010 we were right back to feeling that the business was normal, selling everything easily. There's a value to doing everything the same way, staying true to your principles and not reacting to macro-economic trends if you can." When a recession is expected, it's important to build some "head room" into your planning, Owings said. "You'll need some flexibility to weather the recession. But we feel good about our brand, good about our consumers, good about our wine quality and our history. We want to make sure that people understand who we really are, that we are a family business, that we make really high-quality wine, that we have fun while we do it, and that we're going to continue for generations."

### Into the Future

All three CFOs said they spend about half their time planning for the future. But how far into the future and what sorts of plans? McLaren said she has used three-, five- and 10-year plans before; "but as long as you're looking forward, that's what's important."

Owings said he has created granular budgets for one year ahead, sales plans for five years and another high-level scenario further into the future. He acknowledged preparing different sets of forecasts for different audiences, including one for the sales team that "may be more of a stretch goal" and a more conservative, more moderate forecast that may consider outside forces, like an overdue recession.

Having worked with bosses that varied from aggressive to conservative in their planning mentalities, Owings stressed one bit of advice in particular: "I have to decide how I really tell the story financially so they understand that here is where we are and here is where we want to go, and if you're leading with a big spreadsheet, you're toast. You have to start from the top down—here's the story, and here's the details to whatever degree you need.

### "There is so much money and so much excitement in the Bay Area that it makes it hard to pull people up here. But that doesn't mean it's impossible."

Matthew Owings, CFO, Rombauer

Some want to look at them all, and others don't. How you tell that story is really important, and it depends on who you're telling it to. Coming from consulting, I know how to make up some slides, so I do a few of those. I show stuff that's measurable."

Fowles said that Opus One does not forecast beyond five years. "We make one wine. We've got an economic model in which demand exceeds supply. We aren't looking at the acquisitions of other wineries or brands because both the board of directors and the executive team at Opus One believe we haven't maximized the current model. If we could find more of the ultimate, high-quality **To Kalon**-type fruit from Oakville, we could make more Opus and sell it. But right now demand exceeds supply by a lot, and we always want that magic. That's part of the special sauce that makes Opus One what it is."

While not all CFOs are looking at a financial picture as rosy as the one described by Fowles, all of the finance people in attendance at the Wine Industry Financial Symposium surely picked up some tips from each of the CFOs in this session. The 2019 symposium is scheduled for Oct. 1 and 2 at the **CIA Copia** in Napa. **WBM** 



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### **Should Granholm Extend to Retailers?**

Supreme Court hears arguments challenging Tennessee's durational residency law for wine retailers

#### Kerana Todorov

**Kerana Todorov** is a staff writer/news editor for *Wine Business Monthly*. She can be reached at *ktodorov@winebusiness.com*.

**A U.S. SUPREME COURT** case argued on the 100th anniversary of the establishment of Prohibition may redefine how states regulate alcohol. In January 2019, the **Supreme Court** heard arguments in *Wine and Spirits Retailers Association v. Blair*, a case that may decide whether Tennessee's residency requirements for liquor stores are constitutional under the 21st Amendment, which gives states the right to regulate alcohol beverages.

The Jan. 16 case zeroed in on the state's ability to control liquor sales under the 21st Amendment without violating the dormant Commerce Clause, which prohibits discrimination against out-of-state businesses. Tennessee law requires applicants to be state residents for two years to be eligible for a liquor license. It also imposes a 10-year residency requirement to renew the license.

The **Tennessee Wine and Spirits Retailers Association**, a trade association that represents about 600 Tennessee liquor retailers, appealed a lower court ruling that had found the Tennessee durational residency requirement unconstitutional.

The case started in 2016 when **Total Wine & More**, a nationwide family-owned chain of liquor stores, and Utah residents **Doug** and **Mary Ketchum** applied for a liquor license to operate a store in Knoxville and Memphis, respectively. The Tennessee Wine and Spirits Retailers Association threatened to sue. The state went to court to settle the matter. Lower courts ruled the durational residency requirements unconstitutional. The stores opened.

In its decision, the U.S. Court of Appeals for the Sixth District cited *Granholm v. Heald*, the Supreme Court ruling that declared laws that discriminate against out-of-state wineries unconstitutional. That 2005 decision opened the door for wineries to ship wine directly to consumers living in other states.

Wine industry observers and others have wondered if *Tennessee Wine and Spirits Retailers Association v. Blair* will broaden the case and weigh in on whether retailers can ship wine to customers nationwide. Only 14 states allow retailers to ship wine directly to out-of-state consumers.

Eight Justices heard the case on Jan. 16. Associate Justice **Bader Ginsburg** was recovering from surgery and did not hear the arguments.

**Carter Phillips**, an attorney for Total Wine, argued for the respondents that the durational residency requirement is discriminatory.



PHOTO COURTESY OF COLLECTION OF THE SUPREME COURT OF THE UNITED STATES

"There is no rational basis for the two-year ban that they've put in place here," Phillips told the Justices. "The Tennessee Attorney General himself has twice looked at this ban and said it doesn't remotely serve any purpose that's designed under the 21st Amendment when we're dealing with alcohol or public safety, or public health or anything else. It's only designed to exclude us."

Justice **Neil Gorsuch** asked Phillips whether the next case would be about the three-tier system being discriminatory because of the states' physical presence requirement to operate in a state. "Why isn't this just the camel's nose under the tent?" he asked.

Phillips responded he was not challenging the three-tier system. "Well, if only because, under these circumstances, as the camel at least, or I guess I'm the nose of the camel, that's not what I'm looking for."

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Undoing the three-tier principle would be "fundamentally at odds" with his client's business model, Phillips said.

Gorsuch answered: "But isn't the business model just to—to try and operate as the **Amazon** of—of liquor?"

Phillips responded his client operates on a more "brick-and-mortar model that says we're perfectly comfortable operating within the sphere of regulation that the state imposes on every in-state operator. And all we are seeking to have is not to be discriminated against," Phillips said.

**Shay Dvoretzky**, the attorney for the Tennessee retailers who took the case to the Supreme Court, said the respondents "concede a residency requirement."

Dvoretzky added the state's "durational residency requirement follows that."

As Justices **Sonia Sotomayor**, **Samuel Alito**, **Stephen Breyer** and **Brett Kavanaugh** peppered him with questions, Dvoretzky argued that states under the 21st Amendment "enacted residency requirements, like Tennessee's, to regulate the sale of alcohol within their territory.

"All along the way, this Court recognized the states' power to do so as part of their virtually complete control over how to structure the liquor distribution system," Dvoretzky said. Alcohol, under the 21st Amendment, was to be "treated differently for dormant Commerce Clause purposes."

Durational residency requirements facilitate background checks, investigation and enforcement of the law, Dvoretzky said. Somebody who has been there "for a while," he noted, "is more likely to have substantial assets that can be enforced—that can be seized, and is less likely to flee at the first sign of trouble."

### Wine Industry Reactions

Wine industry lawyers have been following the case closely.

The duration residency requirement is a low-hanging fruit and is very vulnerable to being struck down, said **Tracy Genesen**, vice president and general counsel at **Wine Institute**. She stressed she was not taking a position on the case on behalf of Wine Institute.

Will the Supreme Court also rule on the physical presence requirements for wholesalers and retailers be in the state to do business? "I don't think they'll go that far," Genesen noted.

A ruling that retailers do not have to be physically present to reach consumers across the country would "definitely change the world," Genesen said. "But that's not within the confines of what they're supposed to be deciding on."

Still, the Court may signal views beyond the contours of the case before it and include language in their decision that could forecast other cases.

The Supreme Court may give a strong signal that in-state physical presence requirements for retailers and wholesalers are inherently suspect, Genesen said. They could even say, given the right case, that they could find in-state presence requirements unconstitutional.

**Todd Friedman**, partner with **Stoel Rives LLP** in Portland, anticipates the court will strike down the 10-year residency requirement for renewals and possibly the two-year residency requirement for new licenses. "I don't buy the argument, nor do I think the court will, that the 21st Amendment absolutely trumps the dormant commerce clause," Friedman noted. That said, Friedman anticipates the ruling will be narrow rather than "expansive."

"I think the most likely outcome is that the court says the [Tennessee] law and other similar, thinly veiled discriminatory laws against non-residents



violate the Commerce Clause, perhaps without providing a test of what is and what isn't discriminatory," Friedman said. "I doubt that any ruling will reach the physical presence requirements as that does not appear to be necessary to decide this case."

John Trinidad, partner at Dickenson Peatman & Fogarty in Napa, anticipates the Court to likely issue a narrow decision. "Prior to oral arguments, many thought the Court could issue a decision that would open the door up to retailers shipping wine directly to consumers in other states—a Granholm for retailers. That, of course, would have a significant impact on the wine market in the U.S.

"After oral arguments, most observers think that the decision will result

from out-of-state retailers. The state does not even allow out-of-state companies to apply for a shipping license. In 2016, Indiana wine retailer **Lebamoff Enterprises Inc.** filed a lawsuit against the State of Illinois as it sought the right to ship wine to customers in Illinois.

Lebamoff, which operates a chain of wine retail stores, argued the Grand Prairie state discriminated against out-of-state retailers in violation of the Commerce Clause, which prohibits discrimination in interstate commerce. The state responded the rules fall within the 21st Amendment and are necessary to protect the health and well-being of its residents.

A judge on Jan. 17 ordered the Lebamoff case stayed until the U.S. Supreme Court rules in *Tennessee Wine and Spirits Association v. Blair*. **WBM** 

in a ripple, not a tsunami. The Court will likely issue a narrow decision focused only on the immediate issue at hand: whether Tennessee's residency requirement for retail licensees is protected by the 21st Amendment," Trinidad said.

"The questions from the Justices indicated significant skepticism about the residency requirement. Some noted that it amounted to nothing more than economic protectionism, and a number of the Justices seemed inclined to find that such naked protectionism is not protected by the 21st Amendment," Trinidad added.

However, the attorney for the respondents "focused like a laser on the issue at hand and did not bite when questioned about the potential that the case would open states up to out-of-state or online retailers shipping wine in-state," Trinidad added.

"My bet is that the Court will strike down the residency requirement, but the decision will not directly address out-of-state retailer wine shipping. I also think we may see a concurring opinion, suggesting that state restrictions on out-of-state retailer shipping are consistent with the powers granted to states under the 21st Amendment," Trinidad said.

The Justices heard the arguments in *Tennessee Wine and Spirits Retailers Association v. Blair* a few weeks after the United States Court of Appeals for the Seventh Circuit in November reversed a lower court's decision over the ability of retailers to ship alcohol to Illinois residents.

Illinois allows in-state wine shipments from retailers to consumers. However, it refuses wine shipments



### Wine Companies and the California Consumer Privacy Act

Nate Garhart

**COMPANIES WITHIN AND OUTSIDE** the State of California who offer products and services to California residents are focusing on what they need to do to comply with the new California Consumer Privacy Act of 2018 (CCPA), which will come into effect January 1, 2020. Companies in the wine industry are no different. By turning attention to the issue now, such companies can be ready for the new law without significant disruption of business.

### Are You Subject to the Law?

A California wine company should start by determining whether the requirements of the law will actually apply to it. The act applies to for-profit companies that:

- 1. have annual gross revenues in excess of \$25,000,000; or
- 2. receive or sell/share the personal information of 50,000 or more California residents, households, or devices annually; or
- 3. derive at least 50 percent of their annual revenues from selling the personal information of California residents.

While we can assume that the third criteria doesn't apply to many wine companies, the first two will likely make many subject to the law.

It is important to note that the law applies and gives California residents privacy rights even vis-a-vis a company that is not itself located within California unless "every aspect of...commercial conduct takes place wholly outside of California." This would require that for a given California resident claiming rights under the act:

- the information was collected from the consumer while s/he was outside of California;
- no part of any sale of the personal information occurred in California; and
- no personal information collected, while the consumer was in California, was sold.

It is very unlikely that businesses selling goods and services to California residents will be able to avoid application of the law.

Nate Garhart is special counsel at Farella Braun + Martel. He counsels clients on internet issues, online privacy policies and customer communication compliance with current laws, such as the European Union's GDPR and the California Consumer Privacy Act. Garhart's practice also focuses on maximizing the value of trademark and copyright properties. He can be reached at 415-954-4425.



### What Does the Act Require?

The CCPA provides consumers with four basic rights that relate to their personal information:

- The right to know;
- The right to "opt out;"
- The right to control their information and be forgotten; and
- The right to not be prejudiced even if exercising rights under the act.

#### THE RIGHT TO KNOW

Companies must post general information, usually through a privacy policy (and with more specifics upon request), explaining what personal information is collected, where it was acquired (e.g., through cookies, by request, and/or if the company purchases personal information, the source of such purchase), what the information is used for (usually to fulfill customer purchases and to provide marketing information), whether it is being shared with third parties and to whom it is shared with.

Consumers also have the right to know specific information about their own personal data held by the company and may request, for example, the specific pieces of personal information collected about the consumer, the source of such information and the third parties with whom such information has been shared. Additionally, consumers must be informed that they may request that their personal information held by the company be provided to them in a portable and, where technically feasible, readily usable format that enables the consumer to easily transmit the information to a third party. Companies must provide at least two methods for a consumer to request such information including, at a minimum, a toll-free number and a link on the company website. Such a request will need to be fulfilled by the company without charge and within 45 days after receipt of the request (with the possibility of additional time where reasonably necessary and requested).

Similarly, the company must inform consumers of their "right to be forgotten," discussed further below. While the law only requires this disclosure to be in a "form that is reasonably accessible," the privacy policy is a natural location and will surely satisfy the requirement.

#### THE RIGHT TO OPT OUT

Companies that sell consumer personal information to third parties must enable consumers to "opt out" of having their information sold. While the opt-out/opt-in requirements are different for consumers under 16, such requirements should not be relevant to wine companies which don't knowingly permit consumers under 21 to utilize their sites/services. In short, though, companies may not sell personal information of consumers age 13 to 16 without express "opt in," and for consumers under age 13, the company may not sell her/his personal information without "opt in" from the consumer's parent or guardian.

The privacy policy posted on the site must provide information on how to opt out as discussed above and, additionally, must include a link labeled "Do Not Sell My Personal Information" on the home page.

#### THE RIGHT TO CONTROL AND BE FORGOTTEN

As noted above, consumers have the right to control their data by getting copies of it, enabling them to share it with third parties, and to request the deletion of their personal information. This latter right to be forgotten, however, is not a blanket right and has limitations. Personal information need not be deleted, even after a request for such deletion by a consumer, when the information is, among other things:

- needed to complete the transaction for which it is collected (e.g., completing a sale or delivery, etc.);
- used to detect security breaches;
- used solely for internal uses reasonably aligned with the expectations of the consumer; and/or
- required to comply with a legal obligation or applicable laws (e.g., age-verification laws).

It is important to note, though, that assuming a company has a need to hold personal information for a certain purpose that would except the company from deleting the information, it may only hold and use that data for that specific purpose. The exception does not enable the company to take additional actions with the data that would override the consumer's request. That is if, for example, the data must be held as evidence of compliance with age verification requirements, it may not be used to provide marketing materials to the consumer or any other purpose outside of storage for legal compliance.



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#### THE RIGHT TO EXERCISE PRIVACY RIGHTS WITHOUT PREJUDICE

Companies may not discriminate against consumers who exercise their rights under the CCPA. That is, a company may not deny customers services, provide different goods or services, or charge customers different prices, depending on whether they opt out or otherwise take advantage of their rights under the CCPA. That said, companies are permitted to provide "financial incentives" for allowing businesses to collect, sell or not delete personal information. For example, subject to other laws governing such incentives, a company could provide a discount incentive for providing personal information.

#### What is "Personal Information?"

Personal information, as defined by the CCPA, includes traditional forms of information that identify individuals (names, email addresses, etc.) and also non-traditional examples, including IP addresses, geolocation information and unique identifiers, such as device IDs, cookie IDs and internet activity information (browsing and search history). Additionally, inferences drawn from such personal information "to create a profile about a consumer reflecting the consumer's preferences, characteristics, psychological trends, preferences, predispositions, behavior, attitudes, intelligence, abilities, and aptitudes" would also amount to personal information subject to the rights under the CCPA.

### What Needs to Be Done to Get Ready?

As noted previously, the CCPA will take effect on January 1, 2020. At this time companies should be discussing the issues with stakeholders within the company, primarily those interested in collecting and using the information—the marketing department—and those that control the technical collection of data—the IT department. It is important that both stakeholders provide input and understand the issues as it is common for systems to collect information that, for example, marketers were not actually looking to collect.

Once it is clear what information is being collected and what is being done with that information, the privacy policy and other disclosure documents and links need to be drafted and included on the site to comply with the company's disclosure obligations under the CCPA.

The IT department must also be engaged to ensure that the company can respond to consumers' requests for information and/or to be forgotten. While seemingly simple, this often requires steps to be taken to create or optimize the ability to do so.

Once the privacy policy and required disclosures are posted and the company has a plan and process to respond to consumer and regulator requests concerning personal information, January 1, 2020 will present only the chance to toast the opportunities of the new year rather than worry about the effective date of the CCPA. **WBM** 



### Mobile State of Mind: Mobile Sales Count for More Than One-Third of Total E-Commerce Sales

Are you ready for it? Being mobile-friendly doesn't mean you're optimized for mobile commerce

Erin Kirschenmann

**Erin Kirschenmann** is senior editor for *Wine Business Monthly* and has been with the magazine since 2012. In addition to production responsibilities for the monthly trade magazine, she writes about wine industry trends, including business, technology and sales and marketing topics for *WBM* and *Winebusiness.com*. She graduated from Sonoma State University with a bachelor's degree in communications with a journalism emphasis. She can be reached at *erin@winebusiness.com*.



**EACH YEAR, WHEN RESEARCHING** the latest trends, statistics and updates in the mobile world, I feel like I'm preparing for a State-of-the-Union-type address—only the facts and figures point to a much rosier world. It's exciting to see the strides that retailers and the wine industry are making to bring more mobile-friendly, easy shopping experiences to their customers, most of whom are embracing a mobile mindset. There's still a great deal of work to be done: the technology behind smartphones and the apps and services that live and work within them are constantly changing and growing, but it seems that most companies are accepting of the challenge to keep up.

The biggest trend in mobile for 2019 is optimization: optimizing your website, your experience, your ways of doing business. Mobile commerce (m-commerce) has catapulted omni-channel shopping to the forefront and provided the ability to enhance website, app, social media and even in-person shopping.

### Why M-commerce?

There are an estimated 10 billion mobile-connected devices worldwide. Just let that sink in for a second.

In the United States, more than 230 million consumers have a smartphone, and 76 percent of those users have made a purchase online within the last six months, according to recent **Outerbox** reports. The Statistics Portal, citing **eMarketer** data, reported that m-commerce sales accounted for 34.5 percent of total e-commerce sales in 2017, the most recent data available as of print time. The average value of those orders was \$79, while tablet sales averaged eMarketer is also projecting that m-commerce will account for more than half of all e-commerce sales by 2021, just two years from now.

You can see why optimizing a website for mobile commerce has become such a big trend.

What we know about mobile shoppers is that they're fickle. They want easy, fast, personalized shopping. They're quick to abandon carts if the buying process is too difficult and they're unlikely to return if so. A small few might move to a desktop browser, but most companies have not enabled or facilitated this kind of omni-channel purchasing.

If you think a consumer will still purchase your wine online, even if you have a poor mobile shopping experience, simply because they love your brand or know your story, you're wrong. Eighty-four percent of shoppers have had difficult mobile shopping experiences and a recent study shows that 40 percent of mobile users will instead make a purchase from a competitor when that happens.

To counter this, there are a number of things you can do as a brand owner to optimize your site for the mobile experience.

### **Preparing Your Site for M-commerce**

Congratulations! You've made your site mobile-friendly through responsive design. It's likely been a long, arduous process. Unfortunately, your work is not over! Your website needs to consistently and constantly be optimized for mobile, meaning that you'll need to pay attention to new and advancing technologies, watch where your customers ditch a purchase and leave the site, as well as offer more options.

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### **Mobile State of Mind**

The first step in creating an m-commerce-friendly environment is to complete an audit. View your site through your mobile phone and attempt to make a purchase. Make a purchase of a single brand, then try another purchase with multiple brands and additions to your cart.

Are you ready for impulse buys? Try adding different SKUS from different windows and see whether that process is seamless. Judge how long it takes for your webpages to load, how long it takes you to enter credit card information, try to go back a step in the purchasing process—be creative. Think of all the ways in which you shop online and via a smartphone to try to suss out any discrepancies in the user experience.

From there, you'll need to remove the barriers to purchase you discovered in your problem-finding endeavors. Some of the most common are download speeds, poorly set-up navigation bars, hindrances to adding items to shopping carts and tedious credit card forms.

The glorious imagery of vineyards spread through rolling hills in the height of the growing season are beautiful and bring viewers a sense of place. But those pictures with which many prefer to tell their brand story take a long time to download, and if a mobile user is trying to access a site when not connected to WiFi, that download time is a hindrance.

In 2009, **Forrester** found that 40 percent of customers will abandon a site if it takes more than three seconds to load. In the same study, Forrester found that 52 percent of online shoppers feel that page speed is important to site loyalty. In July 2018, **Google** began using its mobile-first index, which takes mobile optimization and page speed into account in its rankings.

Don't forget to think about allowing alternative forms of payment, such as **Apple Pay** or **PayPal**. The use of these forms allows for perhaps the easiest checkouts of all. Users already have their information stored on their phones and can facilitate a purchase—especially an impulse purchase—with a push of a button or a very easy login. Some studies cite a 10 percent increase in mobile conversion with these platforms.

Embolden an impulse purchase with the addition of a "Buy Now with PayPal" type link or button that lives underneath your "Add to Cart" link. The ease of immediately moving to the shopping cart encourages those who are excited about a particular SKU, and cuts out the time for them to begin regretting the spend.

Now, all of this isn't to say you should accept and promote every form of payment under the sun—a couple of studies have shown that if prompted with too many choices in payment options, a number of customers will abandon the sale and a business can see a dip in customer satisfaction. If your analytics show that 65 percent of your mobile shoppers are doing so on an iPhone, then Apple Wallet would make sense for your brand and your customers, for example.

### **Social Shopping**

Two important questions:

- Are you selling everywhere your consumers want to buy?
- Are you actively selling everywhere your brand already has a presence?

These two questions are extremely important when considering how you optimize the m-commerce and online selling experience in the social media space: meaning **Facebook**, **Instagram** and the like.

If you are marketing to your customers on Facebook or Instagram, you should enable a purchase from those sites through direct links. With more than 700 million monthly users, Instagram has become a popular marketing and sales tool for many brands. A 2015 **Iconosquare** study found that 70 percent of Instagram's users look up businesses and brands through the platform, with 62 percent ending up following the brand.

Setting up a business account is simple, and from there you can optimize the page to do some selling for you. Promotional images posted to a feed are easy, and Instagram even now allows some options for clickable links within posts and stories for business accounts. Advertising through the platform is also available and good way to reach new audiences—just make sure you follow applicable legal requirements.

### **OmniChannel is OmniPresent**

**Shopify**, an e-commerce software, reported that 60 percent of internet users "start shopping on one device, but continue or finish on a different one, and 82 percent of smartphone users say they consult their phones on purchases they're about to make in a store." The report pointed out that smartphones are a tool that follow a customer around, whether they are in a brick and mortar store, a tasting room or at their friend's house.

This provides a high level of accessibility, particularly when it comes to price checking. It's easy for the wine drinker to, say, check the price of a bottle they're drinking on not only a winery website, but also on wine.com, their favorite liquor or grocery store, or even on a restaurant wine list. It builds transparency, but also a few challenges (try to explain the three-tier system to the average consumer).

The report also pointed out the high number of users who start a purchase on a mobile device and move to a desktop, or vice versa, or through some other combination. The key takeaway here is that a consumer needs to be able to easily pick up their shopping cart from any device, or even any new browser, right as they left it. Keeping this in mind is particularly important when considering how to develop log-in credentials, both for one-time purchasers, returning guests and wine club members.

### **Inspiration for the Future**

Digitally native brands and a number of fashion brands are incredibly adept at the m-commerce game. Quite frankly, they're rocking it. Borne from the capital to study and follow its customers and capitalize on m-commerce design, these sites are great examples of m-commerce optimization done right. Many, like **Warby Parker**, **Bonoboo** and others have made it seamless for users to jump from Instagram to the mobile site to desktop, as well as incorporate alternative forms of payment and easy-to-use shopping carts. Look to these sites for inspiration. **WBM** 



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# people

### Wineries & Winemaking

After 13 years, Dennis Hill will be stepping down as founding winemaker at SHARE A SPLASH wine co. (initially founded as Cannonball Wine Company), and handing the baton over to veteran winemaker Ondine Chattan. Chattan brings more than 20 years of winemaking experience from high profile wineries such as Ridge, Cline and Geyser Peak. Hill will hand over winemaking responsibilities to Ondine Chattan and Lynne Chao. Chao will serve as production manager under Chattan and is an integral part of the business model. Yoav Gilat and Dennis Hill established SHARE A SPLASH wine co. in 2006. Founded with the



**Ondine Chattan** 

goal of creating one of the best sub \$20 California Cabernet Sauvignons, the company has prospered over the last 13 years, and is now known for producing and marketing five brands (Cannonball, ELEVEN by Cannonball, Angels & Cowboys, High Dive Napa Valley, Astrolabe Wines from Marlborough, New Zealand).

**Free Public Wines**, the only intentionally curated West Coast canned wine, has hired **Pete Cabrera** as its first national sales director. Cabrera, a beverage industry veteran with 19 years of sales experience, joins Free Public Wines from **Terlato Wines International**, where he served as Northwest region manager since 2014. During his Terlato tenure, he won Region Manager of the Year for the 2018 fiscal year. Prior to joining Terlato, he held distribution management positions with **Nestle Waters North America**, **Rogue Ales Brewery & Distillery, Coca Cola** and **Columbia Distributing**. Launched in 2018 in Oregon, Free Public Wines are now available through **Winebow** in Oregon, California and Washington, and **Stem** in Arizona. Cabrera will oversee Free Public's expanding distribution partnerships and key accounts.



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260 California Street, Suite 700 San Francisco CA 94111 Telephone 415.362.1215 Facsimile 415.362.1494 beveragelaw.com Wente Family Estates announced the recent appointment of Tony Coleman to the position of vice president supply chain, joining the senior leadership team. The company is the country's oldest, continuously operated family-owned winery, focused on producing top quality, appellation-driven California wines with strong distribution in a competitive marketplace both domestically and internationally. Coleman brings to Wente Family Estates a wealth of



**Tony Coleman** 

industry experience over the last 27 years. Prior to joining the team, he was director of bottling at Trinchero Family Estates and also held operations leadership positions at Diageo Chateau & Estates and E&J Gallo Winery. He has spent 18 years focused on the wine and spirits business, and his areas of expertise including engineering and maintenance, plant operations, project management, training and lean manufacturing principles. As vice president of supply chain at Wente Family Estates, reporting to COO and chief winemaker Karl D. Wente, Coleman will work to streamline processes, communications and set best practices to deliver the family's wines to the marketplace of trade and consumers. He joins the current senior leadership team comprised of fourth generation winegrowers, including CEO Carolyn Wente, Chairman of the Board Eric Wente, Vice Chairman Phil Wente, Fifth Generation Winegrower, COO and Chief Winemaker Karl D. Wente, Fifth Generation Winegrower and President of Wente Foundation for Arts Education Christine Wente, President Amy Hoopes, CFO Arthur Jeannet, EVP and Chief Sales Officer Tyson Overton and EVP of Hospitality and DTC Retail Brendan Finley.

Fetzer Vineyards, a leader in sustainable and organic winegrowing committed to restoring, revitalizing and regenerating ecosystems and communities while producing premium wines, has hired Stephanie Peachey to develop and lead the company's Fine Wine Division. Peachey will report directly to Fetzer Vineyards CEO Giancarlo Bianchetti and hold the title of vice president. In addition to its own fine wine brands, including Sanctuary, The Elysian Collection by Bonterra Organic Vineyards, Fringe Collective, and the estate Biodynamic® vineyard line from Bonterra, Fetzer Vineyards also oversees U.S. marketing and distribution for the fine wine portfolio of its parent company, Viña Concha y Toro, headquartered in Chile. The nation's largest importer of South American wines, Fetzer Vineyards markets Chile's iconic Cabernet Sauvignon from Puente Alto, Don Melchor, and the Cono Sur, Marques de Casa Concha, and Terrunyo lines from Chile, as well as the Trivento Golden Reserve collection from Argentina. Under Peachey's leadership, the Fine Wine Division will give these exceptional wines from California and South America focus and strategic direction to further develop in the U.S. Peachey comes to Fetzer Vineyards from Kosta Browne winery. Prior to her time at Kosta Browne, Peachey was vice president of direct-toconsumer at Vintage Wine Estates, overseeing the strategic operations and sales for nearly a dozen tasting rooms and DTC brands. Peachey holds an MBA in Wine Business Management from Sonoma State University and a B.A. in business administration from Stephen F. Austin State University. She is based in the Healdsburg, California offices of Fetzer Vineyards.

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# people

Dry Creek Vineyard announced the hiring of Brad Bartram as the new national accounts director. Previously the fine wine strategic account manager, central division, with Delicato Family Vineyards, Bartram joins the 47-year-old family winery with nearly 25 years of experience in sales and will report to John Doxon, director of sales. He will be responsible for Dry Creek Vineyard's thriving national off-premise accounts business, as well as the regional wholesale business in Arizona, Colorado and New Mexico. Bartram previously represented Dry Creek Vineyard as one of his many brands while he was with V2 Wine Group



Brad Bartram

prior to Delicato Family Vineyards. Established in 1972, Dry Creek Vineyard is Dry Creek Valley's flagship winery located in the heart of Sonoma County, California. Second-generation owner **Kim Stare Wallace**, serves as president overseeing a successful family winery that includes 185 acres of sustainably farmed vineyards. Ehlers Estate, a 42-acre contiguous organically farmed estate vineyard based in Napa Valley's Saint Helena AVA, is pleased to welcome Galen **Hegarty** to the winery as hospitality manager. Galen brings nearly 15 years of hospitality experience to his new role at Ehlers Estate. Most recently, Galen spent six years with Saintsbury Winery in Napa as the director of hospitality. A Florida native, Galen began his career in Orlando. He spent six years as head waiter and bartender at the Hyatt Regency Grand Cypress and then as an assistant restaurant and outlets manager at The Grand Bohemian Hotel where he was involved with curating the restaurant wine list and planning winemaker dinners. In his new role, Galen will work closely alongside winemaker and director of operations Laura Díaz Muñoz to implement thoughtful tasting experiences and continue Ehlers Estate's commitment to offering bespoke experiences tailored to each guest's interests. Ehlers Estate is a picturesque 42-acre vineyard with a stone barn winery dating back to 1886. All of the wines are 100% estate-grown and produced, and the vineyards, which are planted to Bordeaux varietals, are certified organic by the CCOF.

The Family Coppola announces the appointment of Allison Westhoven to president of sales. Westhoven earned her promotion after 16 years progressing through The Family Coppola sales team while showcasing her ability to achieve profitability-driven goals. In her new role on the executive team, she will bring her passion for, dedication to, and expertise of the wine





**Allison Westhoven** 

industry, while overseeing the domestic and international sales teams for The Family Coppola wines, Great Women Spirits and Mammarella Foods as well as all functions of the sales support teams, including customer service, trade marketing and analytics. She holds a Bachelor of Science in Hotel Administration from Cornell University, a WSET Level III and is a Certified Specialist of Wine. Westhoven is now among the 12 percent of female sales executives in the wine industry, according to a study in the December 2018 edition of Wine Business Monthly. However, she joins numerous long-tenured female leaders at The Family Coppola. In Westhoven's new role she is part of a diverse, progressive team which includes several female executives, including people operations executive vice president Gina Charbonneau, marketing executive vice president Jennifer Leitman and direct-to-consumer executive vice president Janiene Ullrich. Inclusiveness and women's achievement are authentic to The Family Coppola, and it has impacted its business and influenced its culture for more than 40 years. Westhoven succeeds Wendy Putman, who retired from The Family Coppola after 19 years of invaluable leadership. During her tenure, Putman guided the growth and success of Coppola wine sales, in addition to overseeing two businesses in The Family Coppola portfolio: Mammarella Foods, the organic Italian food brand featuring authentic pastas, sauces and spices with no additives or preservatives; and Great Women Spirits, the award-winning collection of small-batch, house-crafted, and classically-styled gin, vodka and brandy, as unique and remarkable as the women they honor.

Silverado Vineyards has appointed Bianca Lucchetti as Northern California sales manager. Reporting to Kimberli Rogers, sales director, west, she will be responsible for sales to independent key accounts, on and off-premise, in Northern California. Lucchetti was most recently the import specialist in San Francisco with the Estates Group at Young's Market Company, and prior to that, for four years she was an account manager based in San Francisco. She holds a Level III WSET With Distinction certificate for wine and sake. She graduated from San Francisco State University with a Bachelor's Degree in International Relations that was useful when she moved to Argentina after graduation, working as a hospitality manager at Septima Winery in Mendoza. She also worked in Australia as a wine director for San Telmo Wine Bar & Restaurant in Melbourne and for Kamen Estate Wines in Sonoma.







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# people

Ehlers Estate, a 42-acre contiguous organically farmed estate vineyard in Napa Valley's Saint Helena AVA, has hired Leila Faghani as its new national sales manager. She will oversee the winery's 39 domestic markets and 16 export markets. Faghani comes to Ehlers with more than 12 years of experience in ultra-premium wine sales and has spent the last 10 years managing and growing sales specifically for family owned Napa Valley wineries. Most recently, Faghani served as eastern regional sales director for Truchard Vineyards & Winery, from 2015 through 2018. She previously held roles as national accounts and southeastern regional manager for Flora Springs Winery & Vineyards, and



Leila Faghani

eastern regional manager for Chappellet Vineyards and Winery.

Wedding Oak Winery, in the Texas Hill Country, recently promoted three team members and hired an operations manager. The winery, named for the centuries old Wedding Oak Tree in San Saba, Texas, is set to expand its operations in 2019. Penny Adams was promoted to viticulturist, director of vineyard operations. Adams joined Wedding Oak Winery in early 2012 and has led the winemaking team as well as served as viticulturist. She is widely recognized as a vineyard management expert in the wine industry with experience in all aspects of viticulture, from site and varietal selection through proper pruning techniques, controlled irrigation, canopy management and careful harvesting. In her new role, Adams will manage all Wedding Oak Winery estate vineyards, as well as vineyards under contract, and will continue to serve as vineyard consultant. Seth Urbanek was promoted to winemaker. Urbanek joined Wedding Oak Winery as assistant winemaker in 2017. As winemaker, he will continue to focus on making vineyard specific wines with Texas-grown grapes, as well as the Italian and Spanish style blends that Wedding Oak is known for. Before joining Wedding Oak Winery, he worked in the wine industry at Sheldrake Point Winery, Ovid, NY, MollyDooker Winery in McLaren Vale, South Australia, and Champagne Bollinger, Aÿ, France. Dyana Pemberton was promoted to wine club manager and events coordinator. Pemberton joined

Wedding Oak Winery in 2016. She was tasked to lead numerous aspects of winery operations including tasting room management, events and wine club management. **Doug Winter** joins Wedding Oak Winery as operations manager. Winter, a skilled entrepreneur and manager of multi-unit operations in Idaho and Utah, joins Wedding Oak Winery to oversee operations of its tasting room and hospitality facilities in San Saba, and soon to open locations in Fredericksburg and Burnet, Texas.

Mt. Boucherie Estate Winery announced the appointment of Jeff Hundertmark as its new head winemaker. Having been the winemaker at sister-winery Rust Wine Co. since January 2018, Hundertmark will now be overseeing winemaking operations for both properties and is recruiting a winemaker to oversee day-to-day operations at Rust in Oliver. Hundertmark relocated to B.C. in 2017 after an illustrious career in Ontario, including Marynissen Estate Winery and Stoney Ridge Estate Winery where he was able to produce Estate wines as well as the successful celebrity brand for the Tragically Hip and his own label 100Marks. The appointment of Hundertmark as winemaker is one of many exciting developments in 2019 for Mt. Boucherie as construction is under way for an expanded tasting room and new winery restaurant set to open this fall. The expansion also comes with increased cellar capacity at the winery and, while loyal fans can expect the consistent, quality wines that Mt. Boucherie has become known for, Hundertmark does plan to introduce more innovation into the winemaking program including skin-contact Gewürztraminer and Pinot Gris and a fresh Chablis-style Chardonnay.

Integrated Beverage Group (IBG), owners of Great Oregon Wine Company, Duck Pond Cellars, Rascal and Replica, announced the appointment of Patrick Larkin as president, reporting into CEO Ari Walker. Larkin joins IBG from VOSS Water, where he served as senior vice president for the Americas. In his new role, Larkin will prioritize growth of IBG's on premise business. Prior to his pivotal role at VOSS, Larkin had a successful career as a leader in beer wholesale distribution, including executive roles with New York-based Manhattan Beer Distributors and The Coors Brewing Company. In the past 12 months, IBG has made a number of significant moves in the market, including the purchase of more than 300 acres of mature vineyards in Oregon. With this purchase, IBG established estate vineyards for their Rascal, Great Oregon Wine Company and Duck Pond

 Image: Second state sta



Cellars brands. The company also acquired Oregon's iconic Duck Pond Cellars brand along with the company's Dundee winery, now the winery's headquarters. With these acquisitions, IBG estimates they are among the top five producers of wine in the state of Oregon.

Constellation Brands, Inc., a leading beverage alcohol company, announced that Mike McGrew has been promoted to senior vice president, corporate communications. McGrew is responsible for providing leadership and strategic direction to the company's communications teams, which develop and execute internal and external communication strategies designed to enhance Constellation's reputation with key stakeholders and support the company's business objectives across beer, wine, spirits and cannabis. McGrew joined Constellation Brands in 2014 as senior director, communications for the beer division. Progressively taking on more responsibilities and contributing his expertise to a broader range of projects across the division, he was promoted to vice president, communications for the beer division in 2015. In 2017, McGrew assumed expanded responsibility as vice president, corporate communications for Constellation Brands, focusing on C-level communications strategy and messaging support, crisis communications, and corporate social responsibility strategy. Before joining Constellation Brands, McGrew held a number of roles in corporate communications with increasing responsibility at Grainger, Alliant Foodservice and Morton International.

Signorello Estate, founded in 1977 by father-son duo Ray Signorello, Sr. and Ray Signorello, Jr., announced the appointment of Tanna Massar as national sales manager, Southeast Division. In her new role, Massar will be responsible for the on and off premises sales for Signorello Estate, as well as FUSE, Edge and Trim, for the Southeast United States. Massar, who relocated from Colorado to Florida in 2008, brings extensive sales experience to her new role. Most recently, she was the eastern regional sales manager for Cuvaison Wine Estates and has also served as southeast regional sales manager for Goelet Wine Estates/Clos du Val Wine Co. and national sales manager for Van Duzer Vineyards. Hawk and Horse Vineyards' co-owners and founders Mitch Hawkins and Tracey Hawkins announce the appointment of Jerry M. Baker as vice president, sales and marketing. This is a newly created position for this up and coming Red Hills appellation winery. Baker has been a prominent senior executive in the wine industry for several decades. He has served in senior sales and marketing roles for Ladera Vineyards, White Oak Vineyards, Grgich Hills Cellars, Trefethen and Chateau Montelena. Before coming to Napa Valley, he held senior sales positions at American Wine & Spirits and Bohemian Distributing Company in Los Angeles. His introduction into the wine business was in Los Angeles at the Gallo Wine Company. He rounded out his Gallo experience as the West Central District Manager for the newly created E&J Gallo Winery Hotel Restaurant Division. He also owned, managed and marketed the proprietary brand, Casaeda Wines.

### **Industry Services & Suppliers**

**Christian Liagre**, CEO of **Tonnellerie Radoux**, announced the appointment of **Martin McCarthy** as sales manager of **Tonnellerie Radoux USA Inc.** for Radoux barrels and Pronektar alternative products for oenology. McCarthy has more than 10 years of winery and cooperage experience. He has been with Santa Rosa, California-based Radoux USA for the last seven years and on top of his new responsibilities, will keep his role as Radoux Regional Sales Manager for Napa Valley, North East California as well as product manager of Pronektar.

The Charlois Group announced the appointment of Steve Blais, North American sales manager for Tonnellerie Ermitage-Berthomieu, Tonnellerie La Grange as well as Oenosylva alternative oak products for enology. A native of Quebec, Blais holds degrees in Enology and Chemical Engineering. He comes to the group with more than 20 years of winemaking experience. Blais spent the last 20 years living in France where he was working with one of the world's most prominent winemaking consulting firms, consulting in France and abroad. His depth and breadth of knowledge of our industry makes him a valuable new member of our team. WBM

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### winemaker of the month

### Billo Naravane MW, winemaker/consulting winemaker, Rasa Vineyards, Walla Walla, WA

"With so many new technological innovations happening in the wine industry each year it is hard to stay current. I really like the Cool Products at the Unified Wine & Grape Symposium article in the April issues as well as the Top Products article in the December issues. These articles succinctly cover the most innovative new products on the market today. This helps me to provide the best current solution for a client's technical needs.

I also enjoy reading the monthly Wine Trial articles. These articles provide excellent analysis of controlled experiments and allows one to possibly incorporate some specific strategies into their winemaking protocols for achieving an intended style of wine. For me, it encourages experimentation and reminds me to remain open to various techniques in winemaking."

NAME AND TITLE: Billo Naravane MW, winemaker/consulting winemaker

**WINERY NAME AND LOCATION:** I am the winemaker and owner of Rasa Vineyards in Walla Walla, WA and a consulting winemaker at Delmas, Sinclair Estate Vineyards and Mackey Vineyards in Walla Walla, as well as Echo Ridge Cellars in Echo, OR.

**ANNUAL CASE PRODUCTION:** 2,200 cases for Rasa Vineyards, 5,500 cases for consulting clients

**PLANTED ACRES:** Three acres are currently planted to Syrah in the Rocks District of Milton-Freewater (3 different clones, 1 acre each). We plan to plant another 16 acres over the next several years, approximately 3 to 4 acres per year. More Syrah will be planted as well as Grenache, Mourvedre, Viognier and Cabernet Sauvignon.

**CAREER BACKGROUND:** My brother and I started Rasa Vineyards, an artisanal, world-class winery in Walla Walla, WA in 2007. At that time, I was approximately halfway through my master's degree in viticulture and enology at UC Davis. Prior to making the transition to the wine industry, I studied mathematics and computer science at MIT and electrical engineering at Stanford University. I worked in the computer industry as a consultant and manager at several technology companies including Oracle, Netscape, and Hewlett Packard. **WHAT HAS BEEN YOUR BIGGEST PROFESSIONAL CHALLENGE?** Finding distribution partners that can effectively communicate the story and artisanal aspect of Rasa Vineyards has been more difficult than it should be. We have some great partners now and we are looking for a few more, but both, my brother and I, greatly underestimated the effort involved in establishing and maintaining great distributor relationships.

Completing all requirements to become a Master of Wine was incredibly challenging. For successful completion, the MW program requires a multi-year rigorous effort to gain the in-depth knowledge in all facets of the wine industry. Despite some frustrations along the way, which most candidates in the program experience at one point or another, I am very grateful for completing the program. It really has taught me a lot about the wine industry, and the friends and mentors you meet on the journey all make it worthwhile.

**VARIETALS THAT YOUR WINERY IS KNOWN FOR:** Syrah, Cabernet Sauvignon, Grenache, Riesling, Chardonnay

### jake lorenzo

# Winter

**"JAKE, YOU LOOK LIKE** a giant sloth with a Cheshire cat grin on his face," says Chuy as he places a steaming bowl of pozole in front of me. I inhale deeply of the complex pork, chile, hominy, lime and oregano aromas, and delight in patient, excited anticipation of that luscious first spoonful. I motion to my empty glass and Chuy refills with a generous amount of Pura Sangre Blanco tequila.

I gesture to the filled room, "Congratulations amigo, looks like Carne and Caldo is a roaring success."

"Well, it's nothing fancy, just good, stick-to-your-ribs food at fair prices. What's not to like?" he asks, pouring himself a bit of tequila. We clink glasses in a toast, and then Chuy gets back to serving, and I dig into my bowl of pozole.

It's winter in Wine Country, a time when everything slows down and takes a deep breath. Cold, grey skies leak drizzles of rain, but the weatherman promises a good-sized storm is coming. Perfect weather for a hot bowl of pozole, menudo or whatever Chuy is serving at his restaurant. The vineyards

are dormant except for that bit of sap oozing from the cuts made by pruners. Weeds grow between the rows, dappled with bright yellow mustard flowers. Wineries have barreled down most of last year's wines and are waiting to start bottling this year's whites.

Jake Lorenzo loves himself a good Wine Country winter. There's the day toward the end of January when a bunch of us turn up at some vineyard to do a little pruning and then sit around eating and drinking while we tell stories for most of the afternoon. Or those weekday evenings when I go to Sonoma restaurants with Jakelyn's mother to partake in Happy Hour cocktails and appetizers before we go home to a beef bourguignon dinner that's been simmering for the entire day. I appreciate cranking some

music to keep me company while I stock and inventory the wine cellar, and I enjoy opening two or three bottles of wine that have somehow gotten past 20 years old to see which, if any, are still drinkable.

Jake Lorenzo cut and split a lot of wood from the oak tree that came down in the winds sparking the Wine Country fires. I relish reading a good book in front of my fireplace while burning that wood. For some reason this detective prefers crisp Chablis in front of the fire before dinner and a glass of good cognac or aged tequila after. I love the smell of slow braised meat cooking on the stove or the gooey warmth of melted raclette over potatoes with a racy dry Gewürztraminer. Jakelyn's mom and I take joy in all the guests that come over for dinner and then stay the night for a breakfast, featuring my homemade chorizo and eggs.

Jake Lorenzo takes delight from all these winter pursuits, but the one I like most is the pursuit away from the Wine Country's winter chill to warmer climates. If your wineries are filled with iced tanks for cold stabilization, then this detective is looking for airfare bargains. We always make a winter trip to New Orleans, being careful not to brush up against the Mardi Gras madness. The town is at its most empty and its most intensely local configuration. Tourists don't show up between New Year's and Mardi Gras. It's like we have the place to ourselves with the locals. We can get into any restaurant we like and visit whatever club we wish to hear great local musicians. When we get to wherever we are going, they are happy to see us and eager to give great service. Sadly, they don't reduce their ridiculous wine prices, but we find ways to manage. Another annual trek we make every winter is to some beach in Mexico. This year we went to San Pancho, just north of Puerto Vallarta. We stayed right on the beach in a gorgeous home owned by our cousins. On the way to the house, we stopped at the new La Comer market to buy wine. The selection was astonishing with wines from all over the world and a special section for wines from



Mexico. Based on our recent visit to Valle de Guadalupe, we were able to cherry-pick some real treasures, like a Paoloni Nebbiolo, an Adobe Guadalupe Serafiel and a Vinisterra Pies de Tierra.

Our friend and tequilero, Enrique Fonseca, drove down with his family from Guadalajara, bringing Queso de Arte cheese. We sat on the beach in the warm sun each afternoon, drinking fine red wine with those scrumptious Mexican cheeses. We'd have wonderful home-cooked dinners and finish the evening with some of Enrique's tequila. It made this detective so happy to sit in that warm sun, especially when a quick weather check showed it rainy and

...This detective will take his winters in Wine Country, with brief excursions to sandy beaches and French Quarter dining. We'll sit in front of our fireplace, reading entertaining novels and sipping bottles of wine until it is spring.

cold back in Sonoma. Vacation in good weather is always better when the weather at home sucks.

We returned home tanned and relaxed just as the camellias burst into bloom alongside the Green Goddess lilies. It was still raining regularly, so I got my walking stick and spent a few days foraging mushrooms. This detective loves hunting mushrooms. You get plenty of exercise while hiking through the stunning hills of Sonoma, and there's the fun of cooking your chanterelles, trumpets or porcinis to serve your friends, who come over for dinner when they find out you've had a successful hunt.

Mushrooms are an equal opportunity dish. Their earthy flavors speak of the soil and winter. It doesn't hurt if you cook them in butter and use some cheese, but no matter how you cook mushrooms, they always go with wine. The flavors brighten when paired with white wine and deepen when paired with reds. Mushrooms can make a Rosé blush and a Champagne sparkle, and they are enhanced by both young and old wines.

Jake Lorenzo is a native Californian. I'm not a big fan of snow. Blizzards are not fun. Waiting on a runway, while they de-ice your plane, does not give me confidence. So, this detective will take his winters in Wine Country, with brief excursions to sandy beaches and French Quarter dining. We'll sit in front of our fireplace, reading entertaining novels and sipping bottles of wine until it is spring. After that, things won't change much, but we'll move to the outside table while eating our meals and drinking our wine, and we'll watch the garden grow. **WBM** 



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