JUNE 2022

WINE BUSINESS MONTHLY

THE WATER ISSUE + M&A

# WINE BUSINESS MONTHLY

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## The Water Issue

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# Inside the June Issue

**WHEN IT RAINS, IT POURS.**

As an editor and writer, I've always tried to avoid water metaphors—they're too cliché for me—but that's water under the bridge. The dam is breaking.

This is a water-themed issue, so I'm getting my feet wet, so to speak, and jumping in with both feet. We've dedicated several articles in every section of this issue to water issues to help you get your ducks in a row as the drought continues.

Seriously though, as this issue goes to press, we're hearing a lot of concerning news about a lack of water, not so much to the east, but throughout the west. It's sounding dire. I was surprised to read in this month's article about vineyard lending, for instance, that banks are not only asking lots of questions about water, but that some are even hedging their bets by asking that there be two sources of water available to properties they finance.

Not to go on and on about the severity of the situation, because Wine Business Monthly isn't just about publishing "worry with me" stories—we're more about solutions. Wineries and growers need to be up to speed about managing an increasingly finite resource. Vineyard owners are looking for answers.

One article inside this issue discusses how if managed correctly, recycled water has a place in vineyards. There's a fair amount of work being done on this front by researchers, wineries and growers. Using recycled water takes care and attention but have found creative ways to make it work. Another article has useful information about various options for sourcing and installing water holding tanks.

While water is an important subject, that's not all we cover in this issue. The winemakers quoted in the piece about small lot winemaking had interesting observations about vineyard expression and about coping with smoke-threatened vintages.

If you're even thinking about putting wine in cans, this month's winemaker trial write-up is required reading. Cans are trendy, but since aluminum cans do not allow for oxygen ingress into the package, the challenge lies in creating a reductive or oxidative environment within the first six months of canning. Making wine for cans is different than making it for a bottle. Winemaker Cara Morrison found that putting wine in can breaks all the traditional winemaking rules.

Speaking of breaking rules, I trust I've whetted your appetite. Dive in.

*Cyril Penn – editor*


## WINE BUSINESS MONTHLY

June 2022 ▪ Volume XXIX No. 6

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# CONTENTS

## winemaking



## grape growing



## sales & marketing



## technology & business



### Departments



WINEMAKER OF THE MONTH . . . . . .

**Joe Bechard, winemaker and partner, Chateau Tumbleweed, Clarkdale AZ**

COVER PHOTO: ANDREA JOHNSON PHOTOGRAPHY


**Wine Business Monthly** (ISSN 1075-7058) is published monthly by Wine Communications Group, Inc., 584 First St. E, Sonoma, CA 95476. Subscription rates are $39 for domestic; US$49 for Canadian and US$89 for foreign subscribers. Periodicals Postage Paid at Sonoma, CA, and at additional mailing offices. POSTMASTER: Send address changes to: Wine Business Monthly, 584 First St. E, Sonoma, CA, 95476.

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## Maayan Koschitzky

director of winemaking, Atelier Melka, "Did Wildfires Fuel a Long-term Shift Toward Smaller Fermentation Vessels?," page 20

"It's a New World thing, breaking everything into pieces and doing small lots. … The micro-lots are how we're learning about the site."

## Cara Morrison

Chardonnay winemaker, Sonoma-Cutrer Winery, "Winemaker Trial: Canning Barrel-aged Chardonnay," page38.

"I found that putting wine in cans breaks all the rules that you think you have for winemaking. More $SO_2$ is a bad thing, making it an additional challenge to canning."

## Maya Dalla Valle

winemaker, Dalla Valle Vineyards, "Modern Amphorae and New Oak Barrels: Blending the Two Vessels to Achieve Better Wood Integration and Fruit Expression," page 28

"Our new barrels provide body to the wine, filling out over time to create richness. The used barrels and amphora provide different textures and tools with which to work in creating blends."

## Mario Zepponi

principal, Zepponi & Co, "M&A Market Remains Strong Though Inflation, Conflicts Create Questions" page 64

"When it comes to wine growth, the 'real strike zone' is $15 to $20 a bottle."

## Erik McLaughlin

CEO, Metis LLC, "M&A Market Remains Strong Though Inflation, Conflicts Create Questions" page 64

"National and international strategic operators are expanding into the Pacific Northwest. Regional strategic operators are bolting on other businesses within the region. Successful wineries are adding more vineyard land to their portfolios."

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

## Jackson Family Wines Purchases First Vineyard in Walla Walla Valley, Washington

Jackson Family Wines announced the purchase of 61 acres of an existing 117-acre property located in Mill Creek in the eastern region of Washington's Walla Walla Valley. JFW purchased the property, of which 40 acres are planted to vine, from Abeja, an artisan Walla Walla Winery. Abeja, originally developed and planted the site in 2016, and will retain ownership of 56 unplanted acres and will plant new vines there next year. Jackson Family Wines and Abeja will jointly announce a name for the vineyard at a later date. This is the first acquisition in Washington for the Jackson family. Over the next several years the family plans to develop a Washington-based operation. Wines produced from the vineyard will be made by winemaker Chris Carpenter and his team as part of a new brand under development.


## Constellation Purchases First Winery in Oregon

Constellation Brands acquired Oregon's Lingua Franca, the Willamette Valley producer founded by Master Sommelier Larry Stone. The deal includes the brand, winery, vineyards and inventory. Lingua Franca's winemaking team, led by Thomas Savre and French consultant Dominique Lafon, will reportedly remain on board, while Stone will serve as brand ambassador. Stone was quoted as saying he chose to sell the operation following the "one-two punch" of COVID-19 and wildfires in 2020. Constellation, meanwhile, has been acquiring premium wine brands in an effort to reshape its portfolio toward high end wines.

## Rippey Family Purchases Clarksburg Winery and 100-acre Vineyard

The Rippey family, owners of Carneros Vintners, Lodi Vintners and Rippey Family Vineyards, announced the acquisition of a winery facility and 100-acre vineyard in the Clarksburg area of California. The property was previously owned by another Napa winemaking family, The Baldacci family, and was home to California Cellars. The vineyards are planted to Chardonnay and Pinot Noir. With this investment, the Rippey family has further expanded their portfolio of vineyards and wineries in Northern California, adding to holdings in the Lodi, Napa and Sonoma areas. The Rippey family process approximately 50,000 tons per year with about 20 percent of it for bulk wine contracts and the family's own label. The balance is for custom crush contracts.

## New Owners for Goosecross Cellars in Napa Valley

Dave and Christi Ficeli are the new owners of Goosecross Cellars in Yountville in Napa Valley. The acquisition establishes the eleven-acre Goosecross Cellars estate as a family-owned, boutique winery – realizing a long-held dream for the husband and wife duo. Goosecross Cellars was  stablished in 1985 by Ray and Pat Gorsuch and later sold to a family investment group in 2013. Christi and Dave Ficeli bring considerable wine industry experience as both are alums of E&J Gallo Winery. Dave Ficeli also held senior roles with Beringer-Blass Wine Estates (now Treasury), Jackson Family Wines and in a separate family wine enterprise, Cellar D Wines.

## Grape Growers in California and Oregon Assessing April Frost Damage

Growers near Lodi, the Sierra Foothills and other areas are evaluating crop losses after an unusual frost event hit vineyards in mid-April. Temperatures dipped below freezing a few days after reaching 90-plus degrees Fahrenheit in some places. Vulnerable grape buds were emerging from winter dormancy. Areas most affected included the Delta, as well as Clarksburg, Thornton, Sloughhouse, Linden and Farmington. Frost also descended on vineyards. **WBM**

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WHAT'S COOL

# The Business of Water Storage

How to choose the right tank to serve as your winery's water lifeline

*Bill Pregler*

**WATER IS THE LIFE** blood of a winery. From the vineyards to the crush pad, barrel washing to bottling, wine cannot be made without water. As many facilities are rural, maintaining sufficient process water requires collection, as well as storage. Storage is your insurance.

But to store water, three things must happen. Sourcing reliable water is step one and in many places this means managing an increasingly finite resource. Holding tanks are the answer, and there are plenty of options available for every size winery and any checkbook balance.

Step two is to have an accurate assessment of annual water usage, or benchmark, based on flowmeter data from well heads and water lines throughout your facility. Lastly, you must comply with evolving local building codes.

## Codes and Regulations

The climate flux we see today means regulating water use is high on many governments' to-do lists, but those regulations can vary by state—even county by county. Increasingly, water districts are looking at usage, and many counties have threatened to limit it through allocation. By monitoring and measuring current water use, you are establishing benchmarks, therefore documenting how much water is necessary to run your business and increasing your odds of receiving higher allocations.

Today, there is also a new requirement to consider when looking at water storage: Fire suppression. County jurisdictions are increasingly revisiting building code requirements for emergency water in cellars and public areas, like tasting rooms. Make sure your new tank will comply with the NFPA-22 standards, which will be an important consideration by counties and soon by insurance carriers. The National Fire Protection Association standard #22 is specific to fire protection and storage tanks. They will address tank capacities and elevations, water sources, locations and building materials. Typically, storage capacity is based on the square footage of the structures to be protected.

Finally, as more people look to the ever-illusive concept of rainwater harvesting, it is a good idea to visit the American Rainwater Catchment Systems Association (ARSCA) to determine the actual permitting allowed in your area. Recent regulations have revised NSF-61 rules established by the National Sanitation Foundation, but not every state is on board when cutting permits for potable process water and human consumption.

It is more important than ever to monitor, measure and manage your water, and ultimately, this will help you determine the right type of water storagtank based on size, cost and sanitation requirements.

## Buying a Tank

Water tanks range from inexpensive and entry-level to expensive with million-gallon capacities, from aesthetically-pleasing, above-ground behemoths to hidden below-ground, and even NSF-61 drinking water-rated. You can buy whatever you need.  Fortunately, the history of water containment is ubiquitous, from farms in Oklahoma to municipal requirements in Paso Robles. We are not re-inventing the wheel here.

Dealing with local distributors is recommended as they will represent any number of original equipment manufacturers of different tanks and understand the necessary certifications and permitting processes in your particular region. Tornado specifications in the Midwest are different from seismic concerns in a #4 zone in California.

These certifications are required by county jurisdictions, usually in accordance with American Society of Civil Engineers (ASCE) "wet-stamp" standards. Insurers will also look this when considering policies and limits.

Furthermore, your distributor should also understand the wine industry's water needs (potable/non-potable) and have American Water Works Association (AWWA) approval.

While there are roughly 11,000 wineries in the U.S., the vast majority produce less than 5,000 cases per year. When securing a water storage tank, the key is to find a balance between what is needed and what can be afforded—and there are plenty of affordable options.

Once you have determined your annual water usage, how many gallons you need to store and have the blessing of the county permit people, what tanks are available?

Primarily, there are two kinds recommended for wine country: Poly tanks and corrugated steel. The more affordable poly tank is a great place for the beginning winery or the small vineyard to start.

## Poly Tanks

You cannot be more cost-effective and flexible than a poly tank. This type of tank is easy to install, has most certifications in place and is available in a wide range of sizes. You can buy now and add more later as demand grows.

Polyethylene manufacturers make everything from mailboxes and horse troughs to 15,000-gallon water tanks. Since the 1950s, poly tanks have become a mainstay for homeowners and small business operators. As could be expected, over the years, consolidation has reduced the number of producers, with RMI, Norwesco and Snyder Industries being the survivors that handle most of the United States. Today Tank Holding Corporation is the parent company of most of these manufacturers and controls the bulk of the business. The good news is the base products and individual vendors, such as home improvement, garden or farm supply centers, have stayed the same.

Poly tanks are created through rotational molding (aka roto-molded), whereby the appropriate resins are put into a two-piece mold and then into an autoclave oven. The rotation is bi-axial, which means it both rolls and tumbles, spreading the heated resins throughout the interior of the mold. The result is 100-percent coverage and the ability to produce almost any hollow shape. The molds are cooled, and a tank is removed.


The final product is a "seamless," lightweight, impact-resistant tank from 50 to 15,000 gallons in varying colors—from white to green or black. However, never use a white water tank in an outdoor setting as it promotes interior algae growth. Visually, green is the color of choice—with a few trees planted around it, the tank all but disappears. In vineyards white tanks are used mostly as chemical tanks so you can literally see through and determine a water line.

Poly tanks come with different certifications based on the liquid to be contained. Depending on the resins, you can have HD or crosslink, which is relegated to petroleum or harsh chemical use—definitely not for drinking water or winery process water. For that you want linear polyethylene for NSF-61 certification. Poly tanks can also be UV-stabilized with the inclusion of an inhibitor in the resin's formula. For outdoor locations, this is recommended and will help prolong the life of your tank.

Tanks come with different warrantees, but generally, 15 years is an average lifespan. Most exclude abuse, but patch kits are available. Maintenance is essentially zero.

The big plus with poly tanks is their ease of handling. A 5,000-gallon tank generally weighs about 850 pounds, can be pushed over on its side and rolled around like a big tire. Foundation requirements are nothing more than a smooth, dirt surface without anything sharp, like rocks. They will usually come from the manufacturer with a single manway on top. Any fittings, valves or external plumbing is installed with a hole saw and simple hand drill. They are the easiest to maneuver and install in remote locations, such as vineyards. Should your water storage demand increase, you can simply buy another and connect the two. I have seen poly tank "farms" of five or more.

Again, check with county codes, depending on application. Some counties do not allow poly tanks for fire water (called hydrant tanks) as they will literally melt in a wildfire event. Some counties in California will also require seismic restraints.

Other limitations apply, including size. Poly tanks are made of a single piece, so you will be limited to dimensions that can be legally transported down the road. Some will not like the look of the plastic and opt for a steel tank, especially if it will be near the winery or tasting room. Poly tanks cannot be installed underground as they lack sidewall rigidity and, if half full, can collapse, thereby voiding any warranty.

As a petroleum-based product, today's poly tank pricing is all over the geopolitical map. Most resins are often imported, so international situations complicate matters. Regardless, they are still a great starting point for small wineries with a limited budget.

# Corrugated Steel Tanks

When people think of steel tanks, they often envision massive bolted or welded municipal tanks on hilltops—holding literally millions of gallons—or small, home-sized versions. Somewhere in the middle is the bolted, galvanized, corrugated steel tank, which is perfect for the wine industry.

A time-tested technology, corrugated steel tanks can be built to handle 500 to 200,000 gallons of water, sometimes even more. The big advantage corrugated tanks have over "flat panel" welded steel tanks is that the corrugation process results in increased wall strength. The strength-to-material weight ratio is incredibly high.

Regardless of type, all steel tanks are built like a wine barrel. They consist of individual panels called staves. These are then assembled by welding, bolting or riveting. In corrugated tank production, the flat steel panels pass through the corrugator, producing the "wavy" pattern we see in farm country tanks. That flat steel panel, now corrugated into the wavy pattern, has eight times the tensile-bearing strength of flat steel. The advantages are huge, particularly because you can now use lighter gauge steel yet still have tremendous strength. Gross weight savings are often half, making for sizeable savings in material, transportation and assembly costs.

Once on location, off-loading individual staves from a flatbed trailer is easy, requiring little manpower or machinery. If access to your remote location is a problem, a crew can off-load and transport the corrugated tank, stave-by-stave, manually. Typically, an individual stave for a 68,000-gallon tank weighs 130 pounds and is roughly 3' x 10'.

This green, corrugated steel water storage tank is what most people think about when tanks are mentioned. It's color is intended to help it blend in with the

A corrugated tank is built from the top down. Once on location, the roof is first assembled atop the foundation. Then it is raised by jacks, and the first ring of staves is attached. These will be the lesser 16- to 18-gauge steel to save weight. The process continues until the final, bottom rings are attached, using the heavier 12- to 14-gauge steel for strength. These specifications will be determined in advance by your design engineers.

I have personally known of a 120,000-gallon corrugated tank being prefabricated, stacked on a truck and then shipped across the country. Assembly is now easier and requires less scaffolding and smaller crews. Foundation requirements are simple: the tanks usually sit on a bed of crushed 3/4-inch rock surrounded by galvanized steel rings. The owner will level an area, assemble the ring, fill it with rock and wait for the truck. For those in

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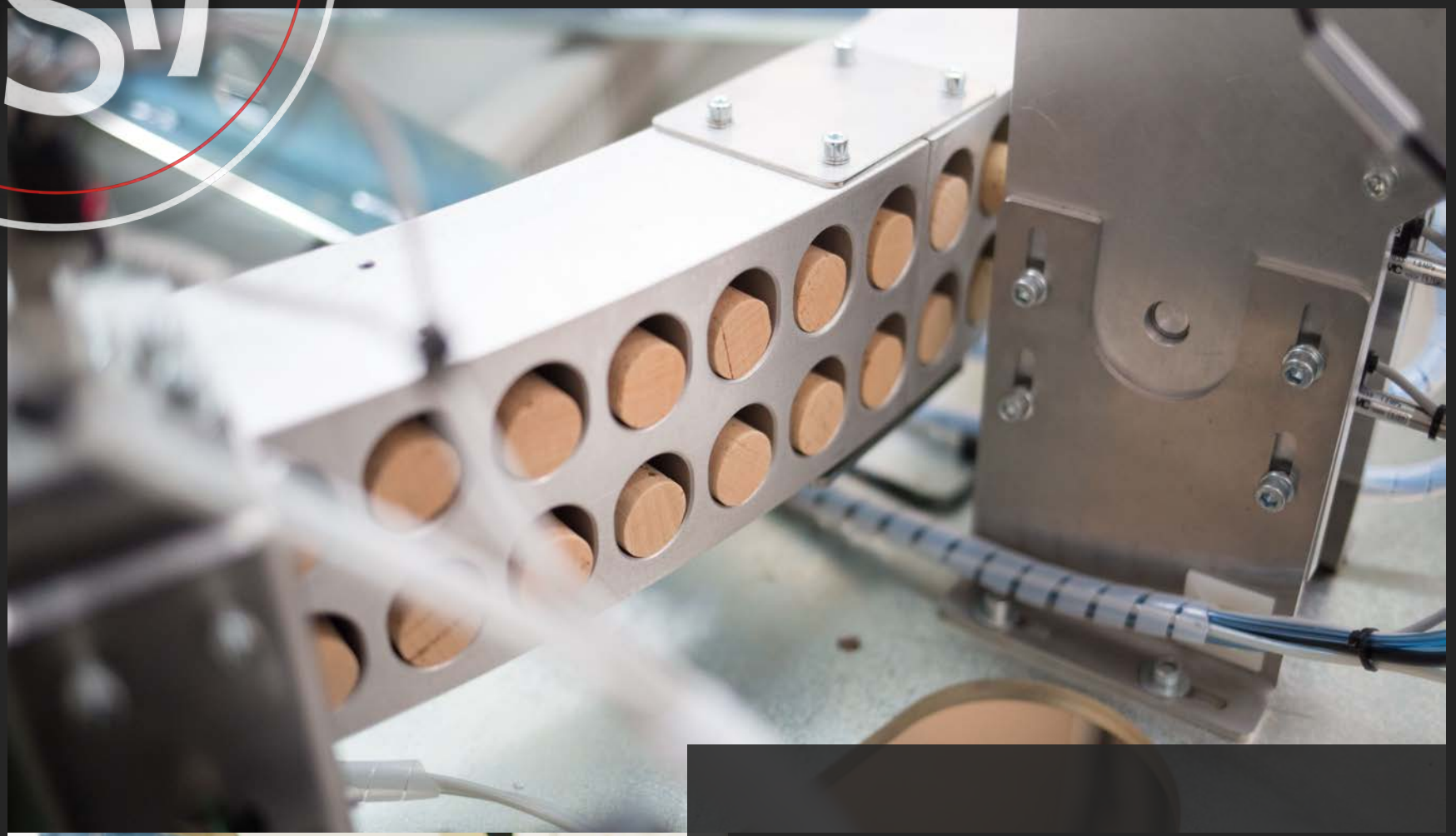

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California's seismic zone #4, this foundation is replaced with a concrete perimeter and anchor bolts.

Corrugated steel tanks can be custom-designed for low and wide or tall and narrow profiles. They have several roof designs, according to seasonal weather issues. Snow loads are important here, and you can even visit the ASCE website to get your specific zone rating. Roofs increase in pitch and strength, depending on the snow. Is your snow zone light and fluffy, requiring a 10-percent pitch to handle 10 PSF (pounds per square foot) or heavy and wet, like "lake-effect" snow in northern New York by Lake Erie, requiring a 30-percent pitch for 85 PSF?

The type of liner chosen for the interior of a water storage tank is critical. It will determine water quality and needs to meet any requirements set by local goverments or certification agencies.

What's also cool is that now hese tanks can be ordered in specific colors while meeting all safety codes for the AWWA and ASCE. There are six interior liners available based on the liquid being stored.

Your distributor will address these needs and coordinate permitting. Costs will also depend on size but remember, in all tank capacity calculations, the larger the tank, the less cents per gallon.

Corrugated tanks are a terrific option for smaller wineries that plan to grow, as well as for medium-sized wineries, vineyard water storage and even larger installations. With proper maintenance, they can easily last 50 years. And for the sustainability-minded, most tanks available today contain 50 percent or more recycled steel.

Finally, you might be concerned over lead times. Fire tanks are a hot commodity now, and tank distributors, like National Storage, call them the "sweet spot" of their business. Fully 60 percent of their business is corrugated.

## Heavy Metal

Usually relegated to very large municipal or government installations, flat panel, bolted or welded tanks are generally not designed for the wine industry unless you have substantial vineyard irrigation needs. They use considerably more effort and heavier equipment to assemble. Staves can

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easily be 3/8" thick and 5' x 10' in size. Using modern technologies, the staves can be fabricated in controlled environments with powder coating or glass fusion lining. Being custom-built, they can be any size, though if visuals are a concern, some wineries might opt for a low profile (8-foot) tank hidden behind a fence. These tanks are generally relegated to very large wineries with facilities that produce millions of gallons of wine. Your distributor can get these for you if necessary.

## Underground Fiberglass

When visual concerns for a winery are a major issue, the only alternative is an underground, commercial-grade, fiberglass tank. Buying and installing one entail additional transportation costs, installation protocol and permitting, but they are so well-engineered that keeping one for decades is common. And don't forget, you will also need a contractor to dig a really big hole and have a crane handy to off-load and set the tank in place.

The size of these tanks can be a major issue, specifically because of the potential challenges in getting one to your building site. As they can only be delivered via a flatbed trailer, the size of the tank will be limited to legal highway clearance, and both diameter and length will ultimately affect final storage capacity. A 10' x 50' tank only holds about 30,000 gallons.

However, fiberglass tanks are incredibly strong because the integral ribs and walls are formed as a single piece. An H-20 rating means you can literally drive a fully-loaded, 80,000-pound big rig over one, and there won't be any damage. During fabrication, NSF-61-certified resin can be applied, resulting in a completely integrated tank, both inside and out. They are impermeable, certainly fire-proof, and will never leak or rust. They generally come with a 30-year warranty. Xerxes and Containment Solutions are the major players but contact your distributor to see which is right for you.

## Other Tanks

Depending on your circumstances and codes, other tank types are available, but many may not be fire-safe. Pillow tanks are available up to 50,000 gallons, pumpkin tanks up to 30,000 gallons and, of course, ponds can take up as many acres as you have available.

## The Wrap

If you are grandfathered next to a bottomless lake, you probably will not need a storage tank. But for the other 10,999 wineries in the United States, the water storage tank is becoming almost essential. Shifting weather patterns are now affecting all wine regions, and water, the life blood of the winery, is in peril. It's time to get proactive and secure your resources.

Today I would not consider purchasing a tank from anyone else but a certified dealer/distributor. It is worth your effort to secure a master distributor who handles one-stop-shopping for all your specific needs. Lastly, if possible, shop local and source your tank from a distributor who knows the wine industry. **WBM**

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# Did Wildfires Fuel a Long-term Shift Toward Smaller Fermentation Vessels?

Smoke taint concerns sparked interest in small-lot winemaking, but some winemakers aren't convinced it's the right way forward.

*W. Blake Gray*

PHOTO BY FRANK GUTIERREZ

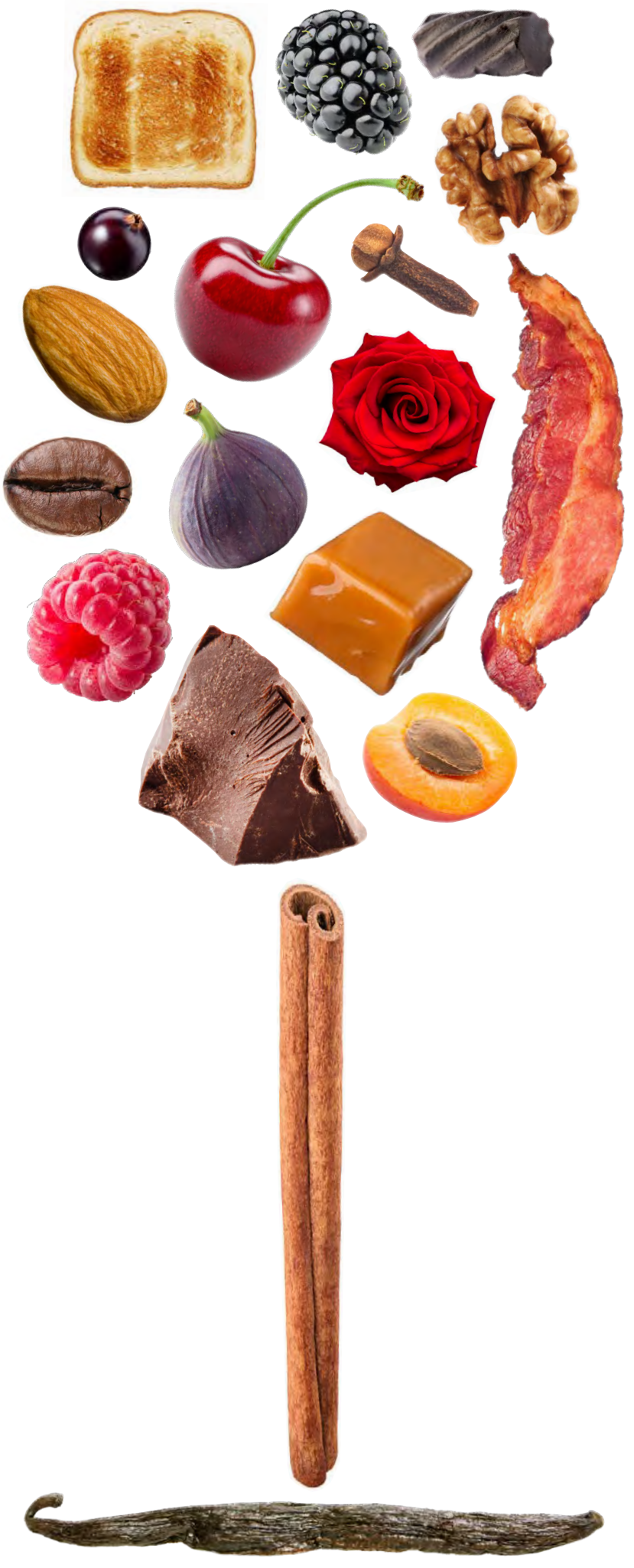
**COMPARED TO OTHER PARTS** of the world, West Coast wineries have always been about small-lot winemaking. While you will find industrial-sized tanks in larger wineries, 2-ton fermenters are more commonplace, and grapes are also fermented in barrels and concrete eggs for some of the premium brands.

In 2020, though, fermentations got smaller than ever. The Glass Fire roared through Napa and Sonoma counties. Wildfires in Oregon burned more than 1 million acres. Both tragedies happened in September, when there were still many grapes on the vine.

Unable to decide whether to pick grapes that might have been affected by smoke, many winemakers instead made tiny fermentations in the smallest vessels they could, even doing test fermentations in buckets, not intending to do anything with the finished wine other than test it for smoke taint.

More subtly than that, some wineries attempted to segregate their grapes more than usual—as much as they could given the other constraints of harvest. Vineyard blocks normally harvested together were kept apart, the better to isolate them if one turned out to be problematic.

There have been many articles on smoke taint, and there will be many more, but this article is not about that. *Wine Business Monthly* wanted to know if making wine in smaller lots by necessity during the fiery, uncertain harvests of the last seven years, would lead to longer-term changes in winemaking. We wanted to find out what winemakers like about small-lot winemaking and what they don't like.



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"It's a New World thing, breaking everything into pieces and doing small lots," said Maayan Koschitzky, director of winemaking for Atelier Melka, which consults for more than a dozen high-end wineries in Napa Valley. "Throughout the years, people in California explored with a lot of rootstocks and clones. You have a lot of variation on every site. You have a lot of vineyards with six or seven different clones and rootstocks. We started with the small lots because we wanted to learn something. We tried to do something scientific to keep track of what we were doing. We look at different clones and different rootstocks, and that's where we tried to collect the data to see if we have a trend. The micro-lots are how we're learning something about the site."

But Koschitzky warned that while small fermentations are useful as a learning tool, he doesn't see them as ultimately making better wine than larger fermentations.

"Personally, on my side, I don't believe in very small lots," Koschitzky admitted. "I don't like half-ton fermenters. We prefer going into a stainless steel tank. We think we'll have a better kinetic fermentation. With enough volume, you have more juice to work with. The yeast naturally will generate more heat. You have more energy in the fermentation. You have more extraction, more natural extraction."

Koschitzky said that his small-lot fermentation goal is simply to better learn the vineyard so that he can eventually harvest more lots simultaneously and ferment them together.

"It's about timing of picking," Koschitzky noted. "We can try to create a more homogenized vineyard with better timed irrigation and more precise farming. It's canopy management but also irrigation management. When you go to a vineyard, it's easier to recognize the better areas than the weak areas. In the end, we make wine from these lots to identify the quality."

## The Simple Matter of Logistics

In theory, a winery could ferment endlessly smaller lots: a single row of grapes or maybe different lots for two sides of a row. But in practice, the desire for this precision is counterbalanced at most wineries by a very prosaic concern: logistics. A winemaker might want to make 100 different lots but then would need 100 different fermentation vessels and a place for them all to be used at once.

"So much of what you end up doing is based on your infrastructure," said Aron Weinkauf, winemaker and vineyard manager for Spottswoode Winery in St. Helena. "We only have 20 tanks to run everything through. Those determine what our capacity is. Some are 1 or 2 tons. Some are 12 or 14 tons. We have that kind of spectrum."

Weinkauf added that when he separates one lot from the rest for fermentation, it is to isolate that vineyard block.

"Perhaps it's a new block," he explained. "Perhaps it's a block that had different pest pressures or mildew pressures. Maybe it's a block where the smoke taint risk might be higher than another. We also work with some small growers where we'll bring in their entire crop and it's 2 tons. You don't typically bring in a couple tons on day 1 and put more in (the same fermenter) a day later. A lot of times people like isolating varietals. I tend to not. I'll do a lot of co-ferments. We have a vineyard where we buy fruit, and


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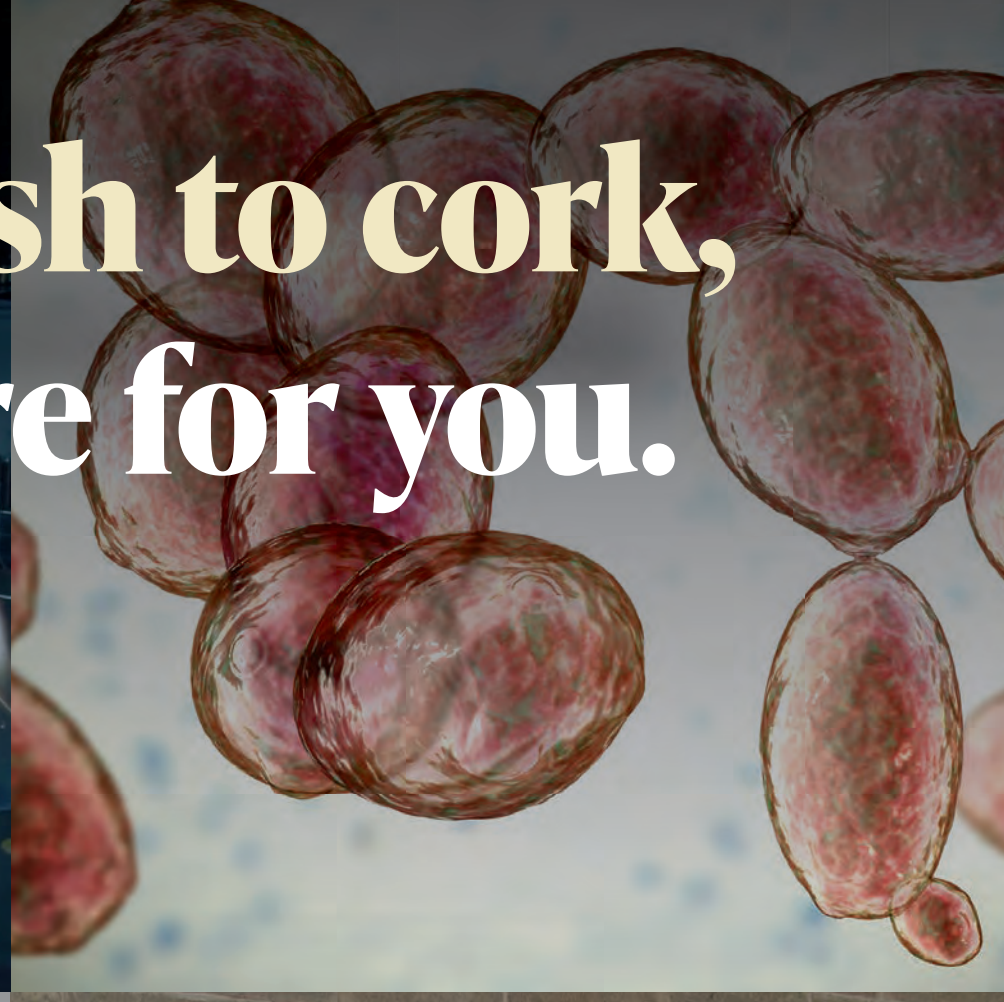


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I'll co-ferment four varietals together. I like how different varietals co-ferment together."

Weinkauf said that whenever possible, he co-ferments different lots for both logistical and aesthetic reasons, and in 2020 he actually co-fermented more than usual because the yield was down.

"When we know yields are low—you know if your block normally produces 7 tons and it's only going to produce 2 tons—you can't ferment it separately anymore," Weinkauf observed. "You have to co-ferment it with something. Otherwise, you can't use your infrastructure—your tanks—efficiently. In '20 and '21 we were co-fermenting a lot of blocks that hadn't been co-fermented before.

"I think of co-fermentation loosely along the lines of why we blend wines," Weinkauf added. "We are ultimately going to be blending these wines to make a singular wine. We'd just as soon start those processes as early as possible and have them marry up. I believe in the synergistic effects of having those blocks ferment together. I think about it just like people. We're all better working together and holding hands. There can be individual strengths, and those strengths are compounded by individual components. A more dynamic wine is filled in by the broader spectrum."

Spottswoode was a bit of a contrarian in 2020 when compared to much of the Napa Valley. While many wineries at its high-end level decided not to release a 2020 Cabernet Sauvignon, Spottswoode not only made one, but apparently, according to the results from the Premiere Napa Valley wine trade auction, made a very good one. Its Premiere lot garnered the highest bid for a 2020 wine at the 2022 auction, and it's worth restating that this is a trade auction, so the bidders were experienced, professional tasters.

"We did nothing differently. We just weren't ready to dismiss the vintage," Weinkauf said. "If we want this to be a representation of what the vintage is, then we need to operate in a vacuum and analyze it later. You couldn't get timely analysis on anything. And there's such a limited understanding of what smoke taint is. There's a big reason why you shouldn't dismiss the vintage immediately."

In fact, Weinkauf made more wine in smaller lots in 2021 than he did in 2020 but not because he is sold on it as a system: it was about logistics.

"We have brought in a handful of small tanks," Weinkauf explained. "We still do look at some smaller ferments, usually in 1 to 2½ tons. Last year, with yields down even more, we had a handful of lots where we said, 'We don't have the space for this.' So, we did some ferments in puncheons and barrels. But it's a matter of looking at your entire infrastructure and figuring out what your best use of it is. We did more barrel ferments and more micro-bin ferments last year than we had in 12 years."

## Limitless Blending Options

In contrast to Weinkauf's blend-early approach, Brent Stone, winemaker and COO of King Estate in Willamette Valley, Oregon, prefers what might be the more commonplace method on the West Coast: he makes many small lots and doesn't blend them until he has to.

"Through harvest, we'll probably have 400 active fermentations," Stone told *Wine Business Monthly*. "Not all 400 will go to barrel. The advantage there is that when it comes to blending, you have a ton of versatility. Particularly in Oregon, with vineyard variation and different clones, they're

FRANK GUTIERREZ

going to show very differently, depending on the vintage. In Oregon you have all these microclimates. Not only can you maximize quality, but you can also minimize downside."

Stone said the winery's red fermenters are 8-, 5- and 2-ton sizes, "and we bring in 4,000 tons," he added. "As we've grown over the years, rather than increase our fermenter size, we've just added more and more of these small fermenters."

King Estate does have 25-ton presses and a 50-ton fermenter for white wines.

"We've never really graduated to the larger fermenter sizes," Stone said. "Smoke taint was never on our radar when we put that together. When you have those smaller fermenters, you can pick at the block level. Every variety, every clone, every block—they all get their own fermenter. Rather than trying to cobble together a whole bunch of picks to fill a single fermenter, you can pick whenever that block is ready to go. There's no way to not make concessions the other way. When you have a 100-ton fermenter and your block is 6 to 8 tons, you're inevitably going to pick some when they're overripe and some when they're underripe. The biggest downside is efficiency. We'll bring in 300 tons in a day, and we have to put that across so many tanks. The model is built around quality, not efficiency."

Stephen Cruzan, winemaker for Titus Vineyards in Napa Valley, stated that he did lots of trial bucket fermentations in 2020 and saw potential for using the system even in a non-fire year.

"We were so focused on the smoke taint aspect that we weren't really making great model fermentations in terms of evaluating flavors and phenolic ripeness," Cruzan told *Wine Business Monthly*. "We were picking at 19° to 20° Brix. It wasn't a great model for a truly ripe pick. It wasn't what we would think of as a production pick. But if you really wanted to, you could come up with a program where you might go out and pick a week before. You could go out and pick a batch and see if you liked the flavors and the phenolic ripeness. You could make it closer to a true model fermentation. The only problem is it's just kind of time-consuming."

Cruzan said his typical lot size is 5 to 6 tons.

"That's the tank size we have the most of," Cruzan noted. "We have a lot of 2- to 3-acre blocks. In a typical vintage, that sets up to where we get what's ripe out of a block at a certain time. We have 4-ton tanks, and we can go down to 1 ton in them."

Cruzan, like many Napa winemakers, does not make the finished blend until the summer after harvest.

"We'll keep everything separate from (the) 2021 (harvest) until June or July this year," Cruzan said. "Those are 85- to 90-percent finished blends. We'll come back in the winter of 2022 to go back and make any final adjustments we have to make. We'll see how the wine has aged through the fall."

## Micro-Picks, Not Fermentations

Steve Matthiasson, winemaker for his own eponymous winery in Napa Valley and consultant for more than 15 others, does plenty of small-lot winemaking by necessity.

"We do small lots of stuff that we just don't have very much of, like Refosco," Matthiasson told *Wine Business Monthly*. "And then we do small

*"We're not trying to do small fermentations. We're trying to do small picks."*

Steve Matthiasson - Matthiasson Wines.

lots on purpose by splitting up vineyards. We choose to do small lots on vineyards because that way we can pick vines exactly when we think they're ready. With our style, trying to get ripe Cabernet at lower sugar levels is really tricky. We might go into a Cab vineyard five times. Sometimes it's zones, which is not unusual in high-end Cabernet winemaking. You go out there, and you taste and say, 'We're only going to pick from here to there.' We take it to an extreme. We go vine-by-vine because we have an in-house crew and we pay by the hour [instead of by the ton]. We'll say, 'These have yellow leaves. We'll pick all the ones that have yellow leaves.' We set our winery up with a lot of small tanks. It's like a modular winery.

"We try to avoid fermenting in plastic," Matthiasson added. "We have a lot of small stainless steel tanks. Our biggest tank is a 5-ton. Last year we did 140 tons of reds. Most of it's in 1- and 2-ton lots. We end up with a gazillion lots."

But Matthiasson said there is a big difference between micro-picks and micro-fermentations.

"We're not trying to do small fermentations. We're trying to do small picks," Matthiasson clarified. "We're not keeping all the stuff separate the whole time. We either combine at the fermenter or combine at the press. We might put two lots in one tank when we know it's going to go into our Napa Cab. We want it to marry. If we can get it back together before malolactic fermentation, that's our perfect world."

Matthiasson believes the wine comes together texturally in the first two or three months after harvest.

"I picture all of these like a contra dance," Matthiasson explained. "You have a window of time for the tannins and anthocyanins to come together and find their match. If they don't have anything to latch onto, they settle

out, and you lose it. Or it stays rough. Aromatically, sometimes it's nice to blend later and see how the wine's going to develop as it settles into what it is. But then you give up the marrying. There's no perfect way. We're a lower alcohol wine, so I'm hyper focused about the mid-palate filling out."

There is an interesting aspect of sake production that also applies to wine—there appears to be a tradeoff that producers need to make between greater aroma or better mouthfeel. Matthiasson said there is no such tradeoff necessary with his wine production because he harvests early.

"Our wines are very aromatic," Matthiasson said. "It's part of the beauty of an earlier harvest. We have these very aromatic wines, so now I can focus on texture. It's a little bit of a tradeoff with hang time. With longer hang time, you're losing aromatics, but you gain texture. If we're going to pick earlier, we have to focus on texture in our winemaking."

Matthiasson's personal experience with picking wines under threat of smoke taint in 2017 gave him confidence in 2020 because, from his perspective, wines that seemed clean in 2017 at harvest did not show smoke taint in subsequent years. But he further noted that his style of early-marriage winemaking complicates decisions about blocks with potential smoke taint.

"Let's say you worry about a block so you keep it separate," Matthiasson said. "Now you just bought insurance. But there's a cost to insurance. Your cost is it's not as integrated into the blend because you put it in later. You might be worried about different lots for different reasons. We don't create a 'bad tank.' We call them our problem children, and we keep them separate. Stuck fermentation, VA, just doesn't have any mid-palate this year. Picked it a bit too late and it's a little too hot. Picked it a little too early and it's thin. We have another use for that wine."

Matthiasson said the problem children end up in a second-label wine.

As for his first label, Matthiasson expects his 2020 Napa Cabernet to have an alcohol level unseen in years—about 12 percent—because he started picking as soon as the fires broke out and were still miles away.

"Our 2020 vintage is our lowest alcohol ever because we just started picking, picking, picking before the wind change," he stated. "We're so focused on lower alcohol and moderate alcohol wines. But I've never pushed it that hard. We picked most of our Cab at 21° Brix. That was a first for me. When we started Matthiasson in 2004, I was picking earlier than everyone else at 24°. Working for Warren Winiarski, he picked at 23.5°. He told stories about how he got a lot of shit in the '70s for picking so ripe at 22.5°. I thought, in 2020, we're going to have wine, so we picked. I said I wasn't going to not pick our best vineyard. When you try those old bottles of Napa Cab that are still kicking around from the '70s and '80s, our 2020 wines kind of remind me of that." **WBM**"

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**MODERN AMPHORAE NO LONGER** resemble their ancient ancestors. New functionality (with an aesthetic upgrade) is making the description "ancient vessel" obsolete. We have entered a new era, one in which technically advanced amphorae, those with similar oxygen transfer rates to oak barrels, are playing a key role in aging (not just fermenting) high-quality, broadly popular wines. That is why Chateau Durfort-Vivens, a second-growth estate in Margaux, has 150 amphorae in its cellar alongside 200 new oak barrels for aging its red wines.

Wineries throughout Europe have embraced the use of amphorae–even in regions deeply rooted in tradition and prestige (not to mention cooperage) such as Bordeaux and Burgundy. Yet in the U.S., amphorae are still seen as experimental. Most wineries that use amphorae have less than 10, and only two wineries, to my knowledge, have close to 20.

But why? The Europeans have seen the future and know that these are not your grandfather's (great-, great-, great-grandfather's?) amphorae. Not all amphorae are the same. The significant difference that determines an amphora's usefulness in a winery is the oxygen transfer rate (OTR), which can vary wildly across producers. Ancient amphorae, and most of their modern-day look-alikes, have high permeability and allow in too much oxygen for long-term aging. They can also have inconsistent OTRs among amphorae from the same producer. Lower-porosity amphorae can be used for long-term aging, and they can be more consistent, but they have not been heavily marketed in the U.S. Many winemakers do not know they exist or, honestly, why they exist.

Adding to this knowledge gap is the fact that most amphora producers do not share (or even know) the OTR of their amphorae, and winemakers rarely know what to ask. It requires a leap of faith. Will the amphora work with their wines? Who knows? Even if the data were available, there is not one standardized method for testing, making it impossible for winemakers to accurately compare vessels.

The good news is that there are some compelling reasons to consider amphorae, and soon winemakers will have all the tools they need to choose the right one for their wines: standardized testing, low- and high-OTR options (with more consistency) and an understanding of an amphora's practical application in the winery prior to purchase. Instead of buying an amphora, using it for two or three years and then choosing a wine to suit the amphora, winemakers can buy an amphora with the OTR that allows for the best expression of their wine.

## Amphorae to Replace Neutral Barrels?

As wine trends move toward less new oak, the search for alternatives to wood barrels has become important. Older barrels that are considered "neutral" can impart undesirable compounds. Due to cleaning processes involving heat and water, particularly steaming, compounds from unseasoned, unoxidized wood are brought to the surface. According to Alban Petiteaux of Oenowood International, a barrel wood buyer and broker in France, "These deep wood compounds can be unoxidized tannins, which can be harsh and dry indeed, and methyl-octa-lactone. It is always surprising to smell fresh coconut milk in a five-year-old barrel that has just been cleaned and steamed, but I have personally experienced it many times."

Chateau Durfort-Vivens replaced all its neutral barrels with amphorae and found the quality of their blends improved. Winemaker Leopold Valentin says amphorae promote a more delicate tannic touch without dryness, and the wood (from their new oak barrels) is better integrated.

## Micro-Oxygenation in Alternative Vessels

It will be helpful to understand a few concepts before moving on: For a wine to evolve and reach its full potential of flavors and aromas, texture and body, it needs small amounts of oxygen delivered gradually over time (micro-oxygenation). In theory, new oak barrels deliver this perfectly, but they impart flavors and tannins. Winemakers often seek out alternative vessels that supply similar levels of oxygen to new oak barrels but do not impart flavor.

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PHOTO BY NATHALIE COIPEL

Château Anthonic in Moulis-en-Médoc (Bordeaux) uses amphoras alongside oak barrels to age its red wines.

In *Recent Advances in the Evaluation of the Oxygen Transfer Rate in Oak Barrels* (2014), Ignacio Nevares and Maria del Alamo-Sanza extrapolated from the most recent testing that the average OTR of oak barrels is around 10 mg per liter per year. We can use this number as a general reference although the topic is complex with many variables and research is ongoing.

Nevares and del Alamo-Sanza also found that the OTR of an oak barrel is dynamic and decreases over time with 50 percent of the total oxygen a wine receives transferring in the first four months of a one-year barrel-aging period. With modern clay amphorae, there are fewer variables.

The OTR can be set, during production, by adjusting the firing gradient, and it will remain consistent and predictable throughout the year, as well as for the lifetime of the amphora (forever, if well maintained).

Most amphorae used for winemaking are made with terracotta. Terracotta is a type of ceramic primarily made of clay and often a few other elements. "Classic" terracotta is only stable when fired at temperatures ranging from 960°C to 1,040°C, which result in amphorae with high porosity that are best used for fermentation and/or short periods of aging. Some choose to line the inside with a coating, such as beeswax, to limit the permeability, but this might lower it too much or be inconsistent over time.

In 2010, Francesco Tava, founder of TAVA, the largest amphora-for-wine producer in Italy today, developed a material that is 100-percent natural clay and can be fired at higher temperatures, between 1,200°C and 1,260°C. They call it "modern terracotta." Since firing at higher temperatures creates smaller pores, TAVA was able to produce amphorae with an OTR similar to an oak barrel starting in 2013. The product has been evolving ever since. Using intelligent equipment, they now have enough temperature control to target a precise porosity level, achieving an OTR that meets the specific needs of each client.

Other alternative vessels are those made from concrete and/or ceramic mixes that, at times, include some clay. Concrete is porous, but it is not inherently permeable. Manufacturing techniques and treatment of the vessel walls will determine OTR early on, but then it becomes less predictable. Concrete favors the adherence of layers of tartrates more than clay (particularly low-porosity clay), and this will block oxygen.

According to David Jenson, director of research and development at Sonoma Cast Stone, in untreated concrete (as with their fermenters), oxygen that resides within the cells of the walls is released during an initial chemical reaction between the wine (acid) and the concrete (alkaline). As a result, the wine receives most of the oxygen upfront, and then micro-oxygenation decreases to almost zero as tartrates form a barrier.

UVaMOX, an agri-food industry research group in Madrid, studied concrete treated with tartaric acid, which prevents a chemical reaction, and found the OTR was at least double that of an oak barrel in small vessels and similar to an oak barrel in vessels above 7,000 liters, but this was after just one week of aging and did not address the issue of tartrates. Since the timing and amount of tartrate layering will differ with every wine, it is challenging, if not impossible, to predict the OTR of concrete over time.

Some vessels fall under the category of stoneware, also known as "grès," which generally includes quartz/silica and feldspar mixed with a white clay. When fired, vessels made with these materials have a low porosity, typically with 80 to 90 percent lower OTR than that of a wood barrel, according to TAVA. Some producers might add in terracotta, marl and other materials to make it more permeable. Since the final material has undergone more manufacturing steps, a winemaker must take extra caution to ensure the vessel is completely safe for the wine. In fact, in the case of any alternative vessel, a winemaker should ask the supplier for proof of FDA compliance.

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In short, there are several variables that determine the micro-oxygenation level of a non-oak wine vessel. It starts with the raw materials and their inherent potential for porosity, as well as stability during processing (mainly heat). Temperature of firing and gradient are also key. Higher temperatures create smaller pores and decrease permeability to oxygen, which translates to a lower OTR. The equipment and/or computer system used to control the firing process can impact the level of precision in achieving the desired OTR. It will also dictate the consistency from vessel to vessel, which ensures winemakers get the results they are expecting.

## Winemaker Experiences

Amphorae do not need to replace new oak barrels to have a positive impact on a wine. In Chateau Durfort-Vivens' most prestigious red wine, 30 percent of the blend is aged in TAVA amphorae and 70 percent in new oak barrels, both for 18 months. Valentin explains how amphorae and new oak barrels are complementary in the cellar. "The new barrels are essential for polymerization of the tannins in the wine (they harmonize the structure of the wine). The amphorae will help preserve the aroma of the wine."

Valentin says the wines are more aromatically complex with the use of amphorae, and he largely attributes this to being able to use less sulfur. "The amphora, by virtue of its microporosity, allows a perfect oxidation-reduction balance. This tool makes it possible to very significantly reduce the contribution of sulfites," he noted. In their top two red wines, he has reduced sulfites by 50 percent since using amphorae. Sulfur, he says, acts as a filter on the tannic and aromatic potential of a wine. "The barrels/amphorae's complementary [relationship] allows us to remove the filter and reveal the true tannic and aromatic nature of our wines."

Dalla Valle Vineyards has been working with the same amphorae as Durfort-Vivens since 2018. The Napa winery has six amphorae in the cellar that are used to age Cabernet Franc and Cabernet Sauvignon for 22 months. In their two bottled vintages where they used the amphorae, those wines have gone into their Estate Cabernet Sauvignon.

Each year they separate one lot of wine to compare new and used oak barrels and an amphora. Winemaker Maya Dalla Valle says that when the wood has more of a wide-grained tannic profile and is more rustic. "We find that with amphora-aging, the wine becomes more precise, and the texture becomes quite mineral and elegant.

"Our new barrels provide body to the wine, filling out over time to create richness," Dalla Valle continued. "The used barrels and amphora provide different textures and tools with which to work in creating blends. In the blending process, we believe it [the amphora] adds to the complexity of the wine without introducing higher quantities of new oak to overpower the fruit and nuances it contains."

Dalla Valle has three 320-liter amphorae per vintage–each equivalent to about a barrel and a half of wine–effectively replacing 4.5 barrels per year. "I have done a trial where I hand-bottled two cases of wine aged in amphora to observe the evolution with age. Perhaps in the future it could be of interest to label a singularly-aged amphora wine."

In Napa, Marc Gagnon, winemaker for Caldwell Vineyard, is aging Cabernet Sauvignon in four amphorae. When he discovered amphorae with low porosity at Chateau Pontet-Canet in Bordeaux several years ago, he had been impressed by the "energy retention" of the wines. After returning to Napa, prior to working at Caldwell, he experimented with a couple of amphorae but was disappointed by the porosity and inconsistency, even when lined with beeswax. Finally, years later, he found what he was looking for with a modern amphora. The 2019 Caldwell Cabernet Sauvignon was the first to be aged in amphorae. The winery released 50 cases and quickly sold out.

The wine does spend a few months in new and once-used barrels during malolactic fermentation, which is for practical reasons rather than preference. The whole lot is transferred to amphorae and aged for 15 months before bottling. Gagnon explains that the wine benefits in terms of the

Château Durfort-Vivens ages wine for its top blend made up of Cabernet Sauvignon, Merlot and Cabernet Franc in a combination of 70 percent new oak barrels and 30 percent amphoras.

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Desparada in Paso Robles compares amphoras from different producers. TAVA (middle) and Artenova (right and left).

aforementioned energy, freshness and purity of the fruit, and he swears there is a fresh blood/iron component in the wines that is not present with oak-aged wine. Despite the time in barrel, he says there is no obvious oak sweetness.

Jacuzzi Family Wines in Sonoma has 15 classic amphorae from Artenova and three qvevri that are built into the ground. Tom Gendall, director of winemaking and viticulture, reports using the amphorae for aging tannic red wines, such as Nebbiolo where he wants to speed up the aging. For whites, Viognier and Pinot Gris, he plays with several variables: fermenting, short-term aging, with or without skin contact, with or without barrel-aging post-amphora.

Sometimes Gendall looks for a mildly oxidative character and does not mind losing some of the fresh fruit to gain texture and body. "You have to understand what you are gaining and what you are losing." With these small lots, Tom's goal is to make a "different wine" which will be offered to Jacuzzi's wine club.

Vailia From of Desparada Wines in Paso Robles has six amphorae from four different manufacturers in her 4,000-case production winery. She has witnessed practically how much the micro-oxygenation varies across manufacturers, and this has dictated how she uses each amphora in the winery. Her Barbera and Nebbiolo are highly tannic and acidic–the Barbera never goes through malolactic fermentation–she ages both in Artenova amphorae for 18 months as they need a lot of oxygen. "These wines would take years to soften in a barrel," noted From.

From has compared aging Sauvignon Blanc for five months in amphorae, French oak barrels (new and neutral), acacia barrels and a stainless-steel tank, and has bottled a few of them separately.

"In the steel tank, the wine is racy and linear with pretty aromatics," From observed. "In the Artenova amphora, I lose some of the bright aromatics, but I like its contribution of earthiness and rusticity, as well as a softer, rounder mouthfeel. I prefer the micro-oxygenation level of neutral barrels and their ability to retain aromatics and the personality of the wine. Acacia adds body, especially on the finish, as well as wildflower aromas."

From recently acquired one TAVA amphora, and based on the freshness and brightness of the wine during the first few months, she plans to test out longer aging, perhaps nine or 10 months, in the future.

## Power of Controlled Oxygen

Giotto Consulting is an oenology and viticulture consulting laboratory and research center in Italy that has worked closely with TAVA on research, testing and product development. According to Fabrizio Minute, head of research and development, the key question is: "How much oxygen does my wine need to express its full potential?" He says to answer this question, you have to consider the grape variety, vinification protocol, expected aging time, etc.

To get the benefits of amphorae, a winemaker does not need to completely replace oak barrels in the cellar, but it is important to understand how barrels and amphorae can each be used to access the full potential of a given wine. According to Fabrizio, "Any controlled differences in oxygen permeability between amphorae of different sizes and/or different ceramic material therefore represent a huge opportunity for producers."

## Results of OTR Testing

Early in 2021, Ignacio Nevares and Maria del Alamo-Sanza of UVaMOX published *Characterization of the Oxygen Transmission Rate of New-Ancient Natural Materials for Wine Maturation Containers*, in which they revealed UVaMOX's new, patented methodology for testing the OTR of alternative materials. The study included two ancient vessels made of clay but not a modern clay amphora. Later, UVaMOX performed testing on samples


**FIGURE 1** Comparison of the OTR potential (mg/L) of the analyzed pieces of the Campione series ceramics used in amphorae of different volumes.

provided by TAVA, and now there is a more complete picture of the range in permeability levels possible with clay amphorae.

These are the three variables that determine the OTR in ceramic vessels:

1. Maximum firing temperature: As the maximum firing temperature increases, porosity and, therefore, oxygen permeability decreases.

2. Temperature gradient (temperature variation over time): The combination of timing and temperature is important but also the precision and reliability of the equipment used to control the temperature gradient.

3. Surface to volume ratio: The OTR is higher in smaller size amphorae and lower in larger size amphorae.

The relationship between these variables and OTR is demonstrated in **FIGURE 1**. Each "Campione" series represents a set of samples supplied by TAVA that were fired at the same temperature, so the only difference within the sets is the size. The series labeled "Campione 4" was fired at the highest temperature, resulting in the lowest OTR. Subsequent sets were fired at decreasingly lower temperatures (except between 0 and 3). For Campione 0 and 3, the firing temperature was the same for both sets, but each had a slightly different temperature gradient applied, which helps to understand the significance of this particular variable in achieving a precise outcome.

## Extremes of Permeability

Testing done by UVaMOX represents the two ends of the spectrum: the ancient vessels that were so porous they could not even hold liquid without beeswax or other lining, and TAVA, the most modern amphorae available today.

Château Durfort-Vivens, a second-growth estate in Margaux, has 150 amphoras in its cellar.



Expressing the true OTR of ceramics from the winemaker's viewpoint needs to be done by using the liquid measurement method (contact with liquid) as that is most representative of real-life wine aging, according to Nevares. However, since the ancient vessels are too porous in their original state to hold liquid, the dry mode (expressed as $cm^3/m^2 \cdot day$) is the only option that allows a comparison of all the vessels tested. The results are shown in **TABLE 1.**

| | |
|---|---|
| Spanish earthenware | 5,173,500 |
| Georgian Qvevri | 309,700 |
| TAVA campione 0: | 5,952 |

**TABLE 1** OTR in dry mode ($cm^3/m^2$ per day)

This testing was performed on raw, untreated samples and shows the inherent permeability of the materials but not the real-life application of the vessels. Although the Spanish earthenware and the Qvevri could never be used to age wine without treatment, the TAVA amphorae are always used to age wine without coating or treatment due to the small pores.

## Other Types of Data

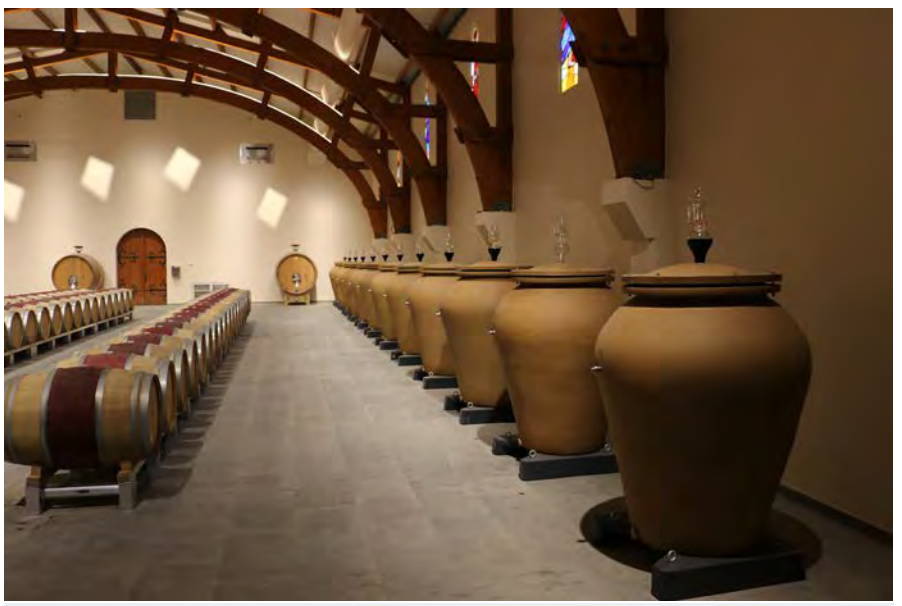
Some manufacturers share porosity percentage or pore size as a tool for comparing the micro-oxygenation potential for different amphorae. The data tell you if one amphora supplies more oxygen than another, but without knowing the OTR of at least one of the amphorae, the practical application is limited. Porosity is defined by the radius of pores in units of microns, also known as micrometers (μm).

These are the measurements supplied by Artenova and TAVA:

**Artenova** 0.4 to 1.1 µm

**TAVA** 0.05 +/- µm

Novum Ceramics in Oregon uses a dissolved oxygen meter to compare the micro-oxygenation level of its amphorae to that of an oak barrel. The producer's most recent testing shows 2 percent more dissolved oxygen in the amphora-aged wine than the barrel-aged wine, but knowing this is a less scientific method, owner Andrew Beckham plans to submit samples to UVaMOX for testing OTR in the future.



Chateau Fleur de Lisse, a Grand Cru in Saint Emilion, ages Merlot and Cabernet Franc using a combination of oak barrels, foudres and amphoras.

# Practical Implications

It is worth repeating: all amphorae are not the same. The physical and chemical characteristics of amphorae depend on the selection of raw materials and the firing temperature and gradient applied. This determines the porosity and, therefore, the OTR. Just as with winemaking, amphorae have improved a great deal since the first ancient vessels were designed. Now technically advanced amphorae, those with an OTR similar to oak barrels, are playing a key role in aging high-quality wine and adding complexity to a blend.

UVaMOX has established a replicable methodology for testing to determine the OTR of amphorae and other aging vessels, so standardized testing is now available. It is up to the amphora producers to have their vessels tested and share this information with potential buyers. Winemakers can benefit by asking for the data to get a better understanding of the OTR and how the amphora can be used before they buy.

While some winemakers will want to replace all of their new barrels with amphorae, most wineries will use a combination of the two and replace some or all of their neutral barrels with amphorae. Regardless, the use of modern amphorae can greatly improve wine quality. When shopping for an amphora, remember to start with this one question: How much oxygen does my wine need to express its full potential? This will guide your decisions and allow you to find the right vessel for your wine. So now you know what Chateau Durfort-Vivens knows. The right amphora from the right decade can be an excellent choice for aging high-quality wine. **WBM**

WINEMAKER TRIAL

# Canning Barrel Aged Chardonnay

## Sonoma County winemaker explores the reduction-oxidation tightrope to bottle Sonoma Coast Chardonnay using sulfites, carbon dioxide and Claril HM

*Bryan Avila*

**Bryan Avila** is a seasoned commercial winemaker, educator and applied research facilitator. He is the Co-Founder of the Vintners Institute which is dedicated to the advancement of grape and wine production in the United States. The Institute raises the bar by creating a platform that brings wine industry stakeholders together to innovate, train and develop new leaders. He writes about good research in the industry by spotlighting good works by viticulturists and winemakers in the industry via *WBM*'s Winemaker Trials section. Say hello: *bryan@vintnersinstitute.com*

**Trial Partner: Cara Morrison,** Chardonnay winemaker, Sonoma-Cutrer Winery

When it comes to crafting wine, Morrison brings an uncommon wealth of knowledge and passion to Sonoma-Cutrer. A native of San Jose, she earned her Bachelor of Science degree in fermentation science from the University of California at Davis. Morrison joined Sonoma-Cutrer in 2005 and immersed herself in crafting Chardonnay in the classic, Burgundian style. She considers Chardonnay a special grape that allows the winemaker more versatility than any other; Sonoma-Cutrer's intense focus on Chardonnay is what attracted her to the brand. Today, Morrison loves that her role allows her to experiment with barrel maturation and the blending process of both of Sonoma-Cutrer's Burgundian grape varietals: Chardonnay and Pinot Noir.


### Background:

The canned, ready-to-drink alcoholic beverage market was exploding even before the pandemic. But two years of lockdowns and a heightened awareness of viral transmission made drinking high-end wine in a can as normal as a video conference. Canned wine drinkers not only wanted a way to "drink less but better" but also needed a means of minimizing contact when the world began to open back up after the pandemic.

Many winemakers have experienced growing pains moving to screw caps, with all its complexities, including screw cap liners, oxidation and reductive characters. These winemakers will also tell you that cans are on another level. This issue highlights Cara Morrison's journey of transitioning a portion of an iconic Chardonnay brand from a screw-capped, dead leaf green, Burgundy bottle with a paper label into a single-serve can. Since aluminum cans do not allow for oxygen ingress into the package, as with some screw caps or cork closures, the greatest challenge that canning presents is creating a reductive or oxidative environment within the first six months of canning.

The analytical quality parameters in wine are aluminum, sulfides ($H_2S$), chlorides, sulfites ($SO_2$) and copper. Since acid and aluminum do not go well together, manufacturers line their cans with plastic to ensure neither the product nor the package are compromised. A baseline aluminum check is important for comparison, especially if problems occur after canning. This also includes measurement of chlorides, which can cause degradation of the plastic liner. Once the liner is breached, acidity, sulfites and copper can react with the aluminum, creating off-flavors and aromas. When considering packaging wine into aluminum cans, be sure to visit your manufacturer for recommendations as they are best familiar with how your beverage will behave in their package.

Morrison teamed up with the Windsor-based enological products supplier, Enartis, for assistance in experimental design and evaluation, which prepared a presentation summarizing the results of this study.

### TRIAL OBJECTIVE:

This trial seeks to deliver the same quality of wine in the can as from the bottle. Unlike the forgiveness of bottling with a traditional cork, packaging

in cans forces winemakers to walk a thin line between oxidation and reduction. This trial evaluates the major parameters, preparations and techniques involved with the transition of a premium wine into a 250 ml can.

## TRIAL DESCRIPTION:

For this trial, Morrison selected a 2019 Sonoma Coast Chardonnay blend that was vinted and cellared in the classic Sonoma-Cutrer house style. Eighty-five percent of this wine was fermented in oak, 10 percent of which were new barrels. The chemistry of the starting wine was:

To evaluate the different options in wine preparation for the can, on June 29, 2020 a portion of the wine from this tank was bottled, and four 60-gallon aliquots were segregated into stainless steel drums for the following preparations:

**Control:** No action

**Lot 1:** Added 5 ppm $SO_2$

**Lot 2:** Adjusted wine to 1500 mg/L from 880 mg/L

**Lot 3:** Claril HM (added 25 g/hL, mixed for 30 minutes followed by a one-hour settle, nitrogen to displace rack wine)

Once these preparations were made in drum, they were canned by The Can Van mobile canning service. This service used liquid nitrogen to displace oxygen, and pressure testing was carried out to ensure the integrity of the cans' seams.

Once these lots were canned, they were stored on trays at three different temperatures:

48°F – Winemaker library temperature

58°F – Warehouse temperature

68°F – Retail shelf temperature

Four treatments stored at three different temperatures resulted in a total of 12 total treatments. These wines were then stored for five, eight and nine months and evaluated by Sonoma-Cutrer staff. Five wines were selected for further study in partnership with Enartis' clientele of trained wine professionals.

## CONCLUSIONS:

Canning was performed directly from the 60-gallon drums. Wine chemistries were run to determine the impact of each treatment after canning:

Following the aging of each treatment of wine, each stored at three different temperatures, they were evaluated in-house by Sonoma Cutrer staff. The in-house team blind-tasted each wine and determined that everyone liked the lower temperature Claril and $CO_2$ treatments the most. Additional sulfites added caused too much sulfide aroma, and the $CO_2$ addition at the highest temperature was noticeably effervescent.

According to the results of this study as summarized by Jasha Karasek of Enartis, some of the key takeaways were as follows:

- Can-to-can variability is significant as the liner can degrade or be damaged over time
- Warmer temperature accelerates reactions
- Minimize the time spent in can by canning small runs as needed

# Post-Mort Q&A

| Analysis | Wine | Pass |
|---|---|---|
| pH | 3.4 | ↄ |
| Free $SO_2$ (mg/L) | 22 | ↄ |
| Total $SO_2$ (mg/L) | 67 | ↄ |
| $CO_2$ (mg/L) | 880 | ↄ |
| Copper (mg/L) | 0.08 | ↄ |
| Dissolved Oxygen (DO in mg/L) | 0.24 | ✓ |
| Chlorides (mg/L) | <10 | ✓ |
| Temperature (°F) | 32 | ✓ |

Pre-Canning Wine Chemistry Check
2019 Sonoma Coast Chardonnay

Sonoma-Cutrer Initial Results Screening

| 2.23.21 | | Rank 1-10 | |
|---|---|---|---|
| Storage location | trial | total | ave |
| 58F, xfer to cans | Bottle | 25 | 3.1 |
| 48F | Claril | 26 | 3.3 |
| 58F | CO2 | 27 | 3.4 |
| 48F | CO2 | 40 | 5.0 |
| 58F | Claril | 41 | 5.1 |
| 48F | SO2 | 48 | 6.0 |
| 68F | Claril | 53 | 6.6 |
| 68F | SO2 | 58 | 7.3 |
| 58F | SO2 | 59 | 7.4 |
| 68F | CO2 | 63 | 7.9 |

### *What was the motivation to conduct this trial?*

**Morrison:** Our company was exploring different ways to do business. There has been much discussion about appealing to a younger customer. When the marketing department asked if I could put wine in a can, I had to take a pause and admit, "I don't know. I'll find out." I love to do research, and well, the pandemic provided plenty of space for it.

### *Why were you interested in studying canning in particular?*

**Morrison:** We wanted to appeal to Millennial consumers. We already do kegs and wanted to try a different container that would appeal to different, more active drinkers. Millennials are always on the go, and cans present a more portable alternative to glass bottle packaging. It's lighter, you don't need a corkscrew, and it's not going to break.

### *Who else worked with you on this trial?*

**Morrison:** During the pandemic, it was pretty much just me working on the project given all the social distancing requirements. I read articles from *Wine Business Monthly* and participated in Enartis' canning seminars, which were a huge help. We reached out to Francois Cordesse at Francis Ford Coppola Winery, and he and the Coppola team helped us quite a bit. I also worked with the folks from The Can Van, who provided some minimum specs for the wine; and since we needed to source "shiner" cans for the trial, our packaging procurement department helped to set up contracts with suppliers.

### *What were you and your team's initial hypotheses before beginning the experiment?*

**Morrison:** When we first decided to do cans, we bought all the canned wines that we could find on the market. When we tasted them, we found that a vast majority of the wines appeared to be reduced or oxidized. Fortunately, there were a few good wines in the bunch, so we knew that there was hope. Having done this trial, we totally understood why. We [winemakers] are really on the fence with oxidation and reduction with cans, and the can-to-can variability doesn't help.

### *How did you set up your monitoring trials?*

**Morrison:** Our goal was to preserve wine quality in 250 ml cans. We tested various wine treatments in cans to determine how to optimize wine-in-can quality. We compared both chemical and sensory analyses between canned treatments and bottle. For our wine to qualify for canning, The Can Van recommended that our wine chemistry was compatible with the recommendations provided by Ball, the can manufacturer.

Once we determined that the wine was fit for canning, we distributed wine from the tank into four 60-gallon, stainless steel drums then labeled and processed each accordingly: the control canned wine had no additional treatment compared to what we would have done for a standard glass package, the second barrel received an extra 5 ppm $SO_2$, the third barrel bumped its dissolved $CO_2$ level to 1,500 ppm $CO_2$, and the fourth barrel received a 25 g/hL treatment of Enartis' Claril HM additive, stirred for 30 minutes and settled for 60 minutes. These were also compared to a wine that was put into a can with no additional treatments and, of course, our standard bottle. Coppola's Francois said that "it's all about temperature"; so after we canned the wine, we stored these wines at three different temperatures: 48°F in the winemaker's wine library, 58°F which is normal for a wine warehouse, and finally 68°F which is a common grocery store temperature.

### *What did you measure? How do you determine success?*

**Morrison:** Once each trial lot was packaged, they were analyzed for free sulfites, total sulfites, dissolved carbon oioxide, DO in the drum and in the final can, then for total potential oxidation (TPO), turbidity (NTU) and copper to best characterize the chemical relationship between oxidation and reduction in term of numbers versus sensory. The Can Van also performed pressure in can and seam tests.

| Analysis | *Recommended* | Control | $CO_2$ | $SO_2$ | Clarity HM | Bottle |
|---|---|---|---|---|---|---|
| Free $SO_2$ (mg/L) | *<30* | 22 | 22 | 25 | 22 | 28 |
| Total $SO_2$ (mg/L) | *<70* | 67 | 67 | 84 | 67 | 81 |
| CO2 (mg/L) | *<2000* | 879 | 1659 | 880 | 860 | 850 |
| DO in Drum (mg/L) | *<0.5* | 0.24 | 0.16 | 0.37 | 0.43 | 0.46 tank |
| DO In Can (mg/L) | *<0.5* | 0.50 | 0.30 | 0.58 | 0.60 | 0.22 bottle |
| TPO (3-can average) (mg/L) | *<0.8* | 3 | 1.7 | 1.8 | 1.9 | x |
| Turbidity (NTU) | *<15* | 4.2 | 4.2 | 4.2 | 17.4 | x |
| Copper (mg/L) | *<0.5 ppm per TTB* | 0.08 | 0.08 | 0.08 | 0.06 | 0.08 |

Post-Canning Chemical Analysis
2019 Sonoma Coast Chardonnay

After canning each experimental lot, they were stored on trays and stored at three different practical temperatures fit for storage in the winery cellar (48°F), the warehouse (58°F) and the retail store (68°F). We tasted all 12 of these treatments in-house and ranked them from 1 to 10 based on our preference, with 1 being the best and 10 being the worst.

After the in-house screening of these treatments, we selected those that would yield the most practical results from the large-scale Enartis study. We sent 100 cans of five different treatments to Enartis. To ensure a completely blind and unbiased tasting, the cans were labeled only with 2019 Chardonnay, plus a three-digit code with no winery or appellation reference. The responses were given on Survey Monkey; and while we mostly asked for ratings on various characteristics and an overall ranking of the wines, we allowed space for optional descriptive feedback. The most interesting comments were that tasters assumed wines stored at higher temperatures were oakier and wine stored at lower temperatures had cleaner fruit (and assumption of less oak). All of the wines came from the same tank—only a few small treatments and temperature storages were different.

The great thing was to get feedback from the industry, in addition to just our own winemaking team. We had 143 people taste. Overall, the wines we sent out showed very well, and we got a lot of information out of the large-scale study.

### *Did you encounter any difficulties during the trial? If so, how did you address these complications?*

**Morrison:** I found that putting wine in cans breaks all the rules that you think you have for winemaking. More $SO_2$ is a bad thing, making it an additional challenge to canning.

When marketing said we want to try canning, winemaking insisted on trying it in a can on a small scale first because we had no idea what the differences would be. We never realized just how nice glass was until we used aluminum. You can't use copper or too much sulfur because you don't want to create a reductive environment. So basically, all the tools that you usually use to reduce oxidation cause reduction in cans, so you can't use them in the same way as you would when bottling. This means potentially huge oxygen pickup. We had to work closely with our quality control team to constantly test for $O_2$ pickup. It's such a thin line between being reductive or oxidative in cans.

### *What was the most important outcome of the trial that winemakers can use?*

**Morrison:** Chemically, there were no significant differences in DO, $CO_2$, $FSO_2$, $TSO_2$ or acetaldehyde. The major difference was in the hydrogen sulfide concentration. All trials were aged for nine months. Amber Benet, a sensory scientist with Brown Foreman, helped us analyze the samples, confirming that temperature had a major impact. While we preferred storing the wines at 48°F, the shelf at the grocery store is 68°F.

### *Were the results as you predicted, or did anything unexpected occur?*

**Morrison:** People preferred the higher levels of $CO_2$ in the can. People just expect it when they open a can. We also preferred higher $SO_2$ at 48°F and $CO_2$ at 58°F; however, we knew that our marketing department preferred treatments that could stand the test of grocery store temperatures.

### *What was your greatest learning from the canning trial?*

**Morrison:** We learned exactly just how different aluminum cans are from bottles. We can't just take our normal wine and put it in a can. Cans have a shorter shelf life than bottles because once the liner gets compromised, you get reduction. This leads to a high degree of can-to-can variability—so doing large runs is not ideal. Unfortunately, there is only one kind of liner for wine.

Since customers drink canned wines shortly after purchase, our rule of thumb is to can small amounts more often and can on an as-needed basis with only a short stock of canned inventory. This means that the majority of the unsold portion of the wine is still safe in our bulk inventory whereas bottled inventory could be maintained reasonably well in a warehouse, either on-site in our warehouse or within distribution.



### *Do you plan to conduct a follow-up trial to re-test these results?*

**Morrison:** Oh my gosh, no! That was a lot of work, and I think we got our process dialed in. We ultimately decided on a combination of $CO_2$, and Claril HM fining with lower $SO_2$ options.

Doing these small runs also allows us to study what is going on in the market. Just because the wine is ready doesn't mean we will have all the right supplies on hand for canning. We would like to have a Just-In-Time business model, but problems with the can shortage have demonstrated that we need to become best friends with our procurement person to ensure that all the canning logistics line up. Winemakers need to plan ahead and call the can people early and often. They've got such a huge demand that they don't really call you back. Not to mention that only certain types of cans have liners, such as the 250s and the 375s. **WBM**

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THE STATE OF WATER IN CALIFORNIA:

# As Drought Continues, Many Expect Further Conservation Measures

*Kerana Todorov*

**Kerana Todorov** is a freelance reporter based in Napa.

**THE SNOWPACK SURVEY—AN INDICATOR** of how much water will be in the state's reservoirs—showed little snow on the ground. The state's automated snow sensor network estimated the snowpack was just 38 percent of average—a record low—and the snowpack was expected to be at its highest on April 1.

"The big unknown is how much of that water will actually make it into the reservoirs," stated Sean de Guzman, manager of the snow surveys at DWR.

According to Guzman, January through March 2022 were the driest months on record in the Sierra Nevada in more than a century. The snowfall that occurred, after a couple of storms in December, did not outpace the amount of snowmelt. Only 2.5 inches of snow fell at Phillips Station, west of Lake Tahoe, from January 1, 2022 to April 1, 2022—or 4 percent of average.

"The conditions we are seeing today speak to how severe our drought remains," DWR director Karla Nemeth said. Her agency has planned for a third dry year. Still, water conservation remains the "best tool," Nemeth observed. "All Californians must focus on conserving water now."

What do California's extended dry conditions mean for winegrape growers?

"It's going to be a rough year all the way around," summed up Michael Miiller, director of government relations for the California Association of Winegrape Growers (CAWG).

In late March, Governor Gavin Newsom announced new restrictions and asked for more voluntary reductions in water use. These measures included fallowing farmland and cutting back on water diversions. The order also included the prohibition against issuing new well permits if they could potentially interfere with existing neighboring wells, cause land to sink or endanger the integrity of nearby infrastructure.

"There is no doubt much more to come. There will likely be more restrictions coming in every part of California," Miiller said.

In March, growers in the Anderson-Cottonwood Irrigation District in Shasta County were notified they will not receive any agricultural water this year because of low levels in Lake Shasta, which was only 38 percent full, reported CAWG.

Lake Shasta is the Golden State's biggest water reservoir and part of the Central Valley Project. Shasta's water levels affect growers that rely on water from the reservoir, Miiller said. The Central Valley Project is a network of reservoirs, dams, canals and power plants that runs from Lake Shasta to Bakersfield. It supplies water to anywhere from 29 or 58 California counties, according to the Bureau of Reclamation, the federal agency that oversees the system.

As of March, most Central Valley growers were slated to receive only 5 percent of their usual water allocations, putting extra pressure on the need to pump groundwater.

"We are still evaluating how the executive order will affect Central Valley growers, but we know that the demand for groundwater is going to be high in this drought," Miiller remarked. "This is true for all water users, not just agriculture."

## Water Remains a Top Issue

The construction of the $5.2 billion Sites Reservoir west of Colusa, has been under consideration for years. If built, it would capture and store runoff water.

"Central Valley growers are especially frustrated because the drought was foreseeable, and the effect of the drought could have been mitigated by increased surface storage," Miiller said. "Regulators cannot make it rain, but they were given the substantial financial resources to be better prepared for this lack of rain."

Sites Reservoir's annual economic benefits are about $260 million a year, according to Miiller. "Sites should have been completed years ago, yet construction hasn't even begun," he added.

In August 2021, state water regulators ordered hundreds of agricultural customers, including grape growers, to stop drawing water from the Russian River watershed. The curtailments were lifted in October after significant rainfall soaked the region.

However, curtailments may resume in April in some parts of the watershed, Sam Boland-Brien, supervising engineer for the California State Water Resources Control Board's Division of Water Rights, said in February at a virtual town hall on Sonoma's water situation. In May, state water regulators were scheduled to consider new rules on how to curtail water in the watershed.

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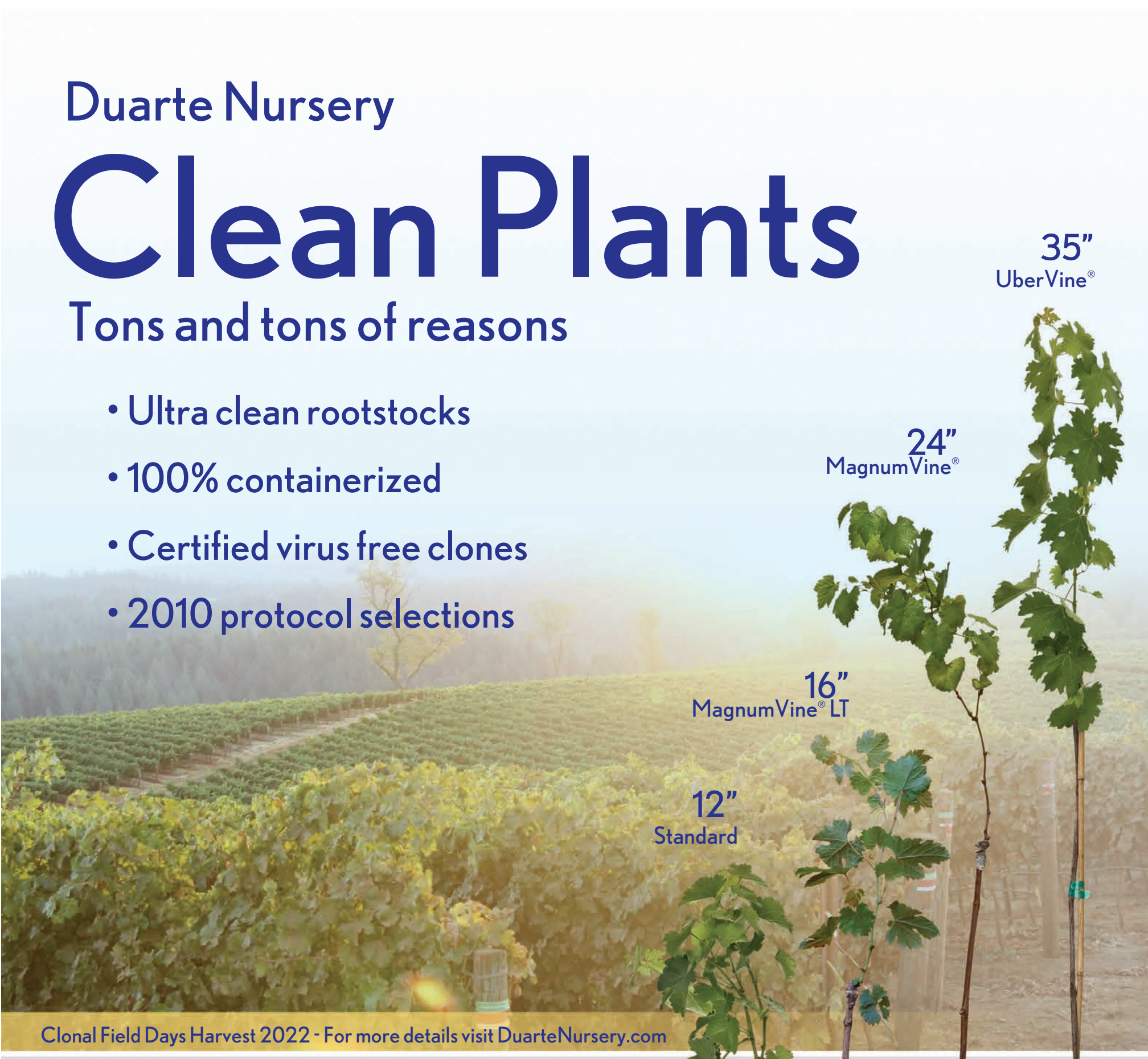


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During the same virtual town hall meeting, Grant Davis, general manager at Sonoma Water, the agency that supplies Russian River water to about 600,000 residents in parts of Sonoma and Marin counties, addressed the drought conditions facing Sonoma.

"You look at our county, depending on where you are situated, we are either in extreme drought or severe drought, and that's likely to get worse as we enter into the drier months of the year," Davis observed while showing a U.S. Drought Monitor map. By the end of March, most of Sonoma County was in the dark red zone.

Sonoma Water, formerly the Sonoma County Water Agency, has tackled a number of projects as drought conditions become the norm. The future of water storage, Grant said, is to have rainwater percolate into aquifers during rain events.

The county agency has received a $6.9 million state grant from the California Department of Water Resources to pay for part of the Santa Rosa Plain Drought Resiliency Project. Three wells, once running, will provide emergency water when sources go dry. "But at other times when there's high winter flows, we'll be able to put the water into those wells to percolate back down into the groundwater profile," Grant stated. According to Sonoma Water's website, the wells would work in "reverse-treated, high-quality drinking water" when there is plenty of it.

Water remains a top issue in Napa as well.

In March, Napa County's planning, building and environmental director David Morrison said the valley floor's aquifer had decreased during the drought of the past two years—some of the driest seasons seen since the 1890s.

"As we saw in 2021, rainfall was between a third and a half of what it should have been, and it was dry not only in the (Napa Valley) subbasin but throughout the county," Morrison noted.

In a presentation to the Napa County Board of Supervisors, Morrison explained: "We know that rainfall over the past winter has been well below average, and the 2022 annual report next year will likely show more problems than what this report shows." The board acted as the county's Groundwater Sustainability Agency.

## Looking Forward

The National Oceanic and Atmospheric Administration predicts the fourth year in a row of drought next winter. "We will need additional tools to respond to an increasingly worsening drought," Morrison said. The county has been recruiting volunteers to form a technical advisory committee and develop a plan on how to reduce groundwater pumping and conservation.



Morrison posits that one contributing factor is that landowners have increasingly pumped groundwater over the past two years because of the lack of rainfall and surface water supplies.

The Napa Valley floor is the only groundwater basin subject to the California mandate put in place to protect the state's aquifers from depletion. Under the law, Napa County must produce a Groundwater Sustainability Plan. The plan was submitted in January to the Department of Water Resources for review.

In the meantime, county officials have begun discussions on how to implement the plan. The 2014 California Sustainable Groundwater Management Act requires aquifers to reach healthy water levels by 2040.

## The Winery Response

Honig Vineyard and Winery farms about 50 acres in Rutherford on the Napa Valley floor.

"It looks like another year of dry conditions and limited soil moisture," commented Michael Honig, president of Honig Vineyard and Winery. "These conditions lead us to believe we will have another small crop in 2022.

"We usually dry-farm our vineyard and have done many things to limit our water requirements at the winery," Honig added. "Our wells seem to be holding up, and we will plan on giving the vines water by drip as needed.

"Until a few of our (politicians) realize we can't build or grow our way out of a drought, I do not see the water situation in Napa improving anytime soon," Honig concluded.

Honig has appealed the Napa County Planning Commission's decision in 2021 to approve the construction of a 475,000-gallon winery off Conn Creek Road by Frank Family Vineyards, a short drive from his winery. He and others had asked for an in-depth analysis on the environmental impacts of the proposed project. As of March, the appeal had not been heard before the Napa County Board of Supervisors. (Treasury Wine Estates purchased Frank Family Vineyards in November.)

The drought also concerns Stu Smith, founder and general partner at Smith-Madrone in the Spring Mountain District, who grows fruit at 1,400 to 1,800 feet. His vineyard is planted with drought-tolerant rootstock—1103 Paulsen and 140 Ruggeri. Smith hardly irrigated the blocks last year. "The vines did an amazing job of getting through and we're going to ask them to do another amazing job this year," he said.

Smith-Madrone's vineyard has received about 36 inches of precipitation this rainy season, mostly in October and December. Still, drought conditions persist. "There is more water but clearly the groundwater has not been replenished," Smith said. "We have a seasonal creek that should be flowing dramatically now—and it's dry as a bone."

Drought conditions and bark beetle infestations have killed numerous trees on the property. "That's creating a greater an additional fire hazard to an already extraordinarily hazardous fire season that we're looking toward," Smith added.

Dana Merrill, president of the Estrella-El Pomar-Creston Water District, encourages county and other water districts to develop long-term plans to offset water shortages in the Paso Robles area. These measures could include accessing water from Lake Nacimiento and recycled water from the city of Paso Robles.

"At some point we're going to have to get together on the same page to plan for the future, and I'm just afraid that time is going by, and we're not doing as much as we probably ought to be doing," Merrill said.

In the meantime, Merrill, who is also president of Mesa Vineyard Management, based in Templeton, explained that growers irrigate their

vineyards in dry years in the winter and early spring. They would rather not need to in part because of the energy and labor costs. Also, drip irrigation water does not flush out salts and reach the vines' root zones like rains do.

## A Global Phenomenon

Globally, 2021 was the sixth warmest year on record–1.51 degrees Fahrenheit above average. It was also the 45th year with temperatures above average, noted climatologist Greg Jones at the Oregon Wine Symposium in February. Ocean heat content was also at a record high in 2021. Both poles continue to lose ice masses at record paces, Jones added.

In Oregon, the 2021 growing season was 1.5 to 2.9 degrees Fahrenheit above average, Jones further stated. The dormant season was 0.3 degrees Fahrenheit above normal. The state experienced a record number of days with 90-plus to 100-degree temperatures.

One surprise was the unprecedented and deadly heat wave that hit the Northwest and western Canada in late June 2021, an event attributed to climate change. Some areas in Southern California were colder than parts of northern British Columbia. The heat event occurred during the vines' growth stage, Jones noted. But it did scorch other crop plants.

"Never, never in our record have so many all-time heat records fallen by such large margins in North America or really anywhere in the world," Jones said. "Most of the meteorological and climate science community is, frankly, very shocked and speechless."

Temperature records were broken by more than 8-degrees Fahrenheit over three days. Typically, heat or cold events break record temperatures by fractions of a degree or 1 or 2 degrees, according to Jones. "Words fail me in terms of the overall perspective here."

The timing of the heat wave was also unusual. They are much more likely to occur not in June but in mid-July to late August, he added.

Scientific models indicated in February that the Pacific Northwest would stay cooler than average through early May, with near-average precipitation during that period, Jones remarked at the Oregon Wine Symposium. That would be enough to augment the snowpack and reservoirs in the Pacific Northwest. California, on the other hand, is expected to have a dry spring, Jones stated.

## Conclusion

About 90 percent of the West is in "some level" of drought , climatologist Greg Jones said in his April report. "Chances for much or any drought improvement are not likely from here on into the summer," Jones said. Jones' "Weather and Climate Summary and Forecast" report is available at *abacela.com/Reports.* **WBM**

# Managed Correctly, Recycled Water Has a Place in Vineyards

*Denice Rackley*


COURTESY OF CERES IMAGING

Some vineyards can access recycled water from treatment facilities, sometimes mixing it with rainwater or their own well water.

**WITH ALL SIGNS POINTING** to more frequent drought conditions and more severe water restrictions, vineyard owners are looking to tools and techniques that can help them adapt in the long-term, increased use of recycled water among them.

"Increasing the available water from treatment plants, reducing the amount of domestic water used in facilities, and exploring efficient and cost-effective solutions to clean and recycle wastewater will be increasingly important for agricultural production in the years ahead," said Miguel Garcia, sustainable agriculture program manager for the Napa Resource Conservation District (RCD).

## Is Recycled Water Safe for Vines?

Even before considering costs or logistics, most growers have the same initial question about using recycled water in their vineyard: will it affect grape quality? The research indicates not—at least if it is managed correctly.

One recent study by UC Davis researchers David Hirzel, Kerri Steenwerth, Sanjai J. Parikh and Anita Oberholster compared conventional irrigation with well water to irrigation with recovered wastewater at two large-scale wineries in Northern California, each with different soil characteristics and varieties.[1] Researchers took samples from irrigation water, soil, leaves and grapes throughout the crop life cycle, including at veraison and harvest.

At both sites, researchers found very little difference in the chemical composition of the soil, vines or grapes because of recycled water use—and sensory analyses of wines produced at each site revealed no differences either. Leaf samples indicated minor sodium accumulations, but the study concluded these were not enough to affect vine health.

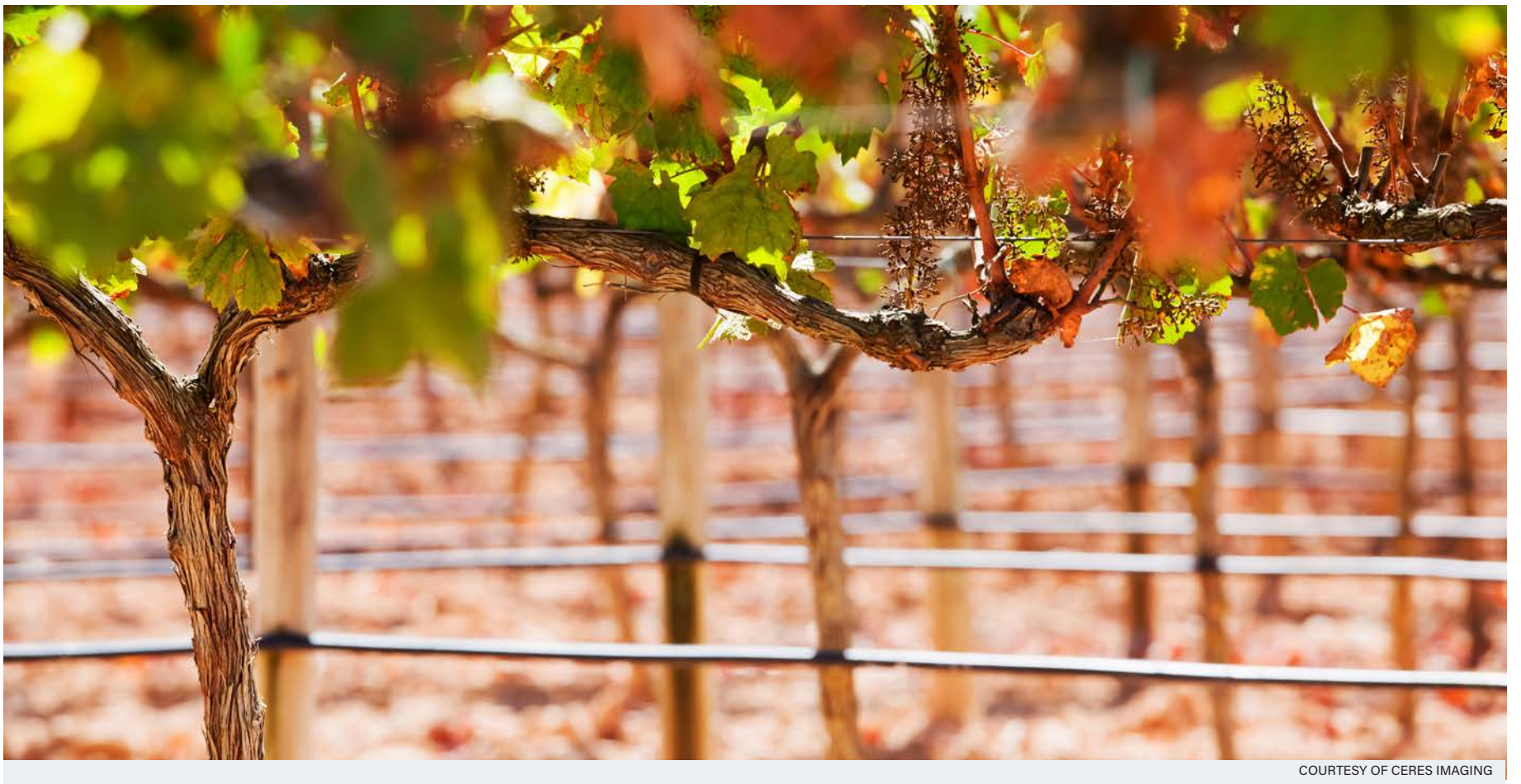
In another project, Maya Buelow, a researcher with the UC Davis Department of Land, Air and Water Resources, collected and compared nearly two years' worth of monthly samples of untreated and treated wastewater in Sonoma County and the cities of Ukiah, Napa, Lodi, King City and Paso Robles. She and her co-authors also concluded that wastewater was non-toxic for vines.[2]

"One potential area of concern is the sodium content of recycled water, which can be elevated as a result of the chemicals used in the treatment process," stated Buelow. "Over time and depending on the nature of the soil where the recycled water is applied, the accumulation of sodium and potassium in soil can cause crusting and ponding."

Garcia has experienced this issue at the Napa RCD's educational vineyard in Carneros, which has been using recycled water from a treatment plant in Sonoma. "Our biggest challenge is water quality and quantity," said Garcia. "Our wells have salt intrusion from the nearby marshes, and the treatment water contains chloride." Without fresh rainwater to help leach excess salts from the soil, vines may struggle to absorb the water and nutrients they need and become stunted.

However, the drip irrigation system used in many vineyards enables treatment water to be used with few concerns. "The water does not touch the part of the plant that is eaten," said Garcia, "and the soil acts as an added filter system, further cleaning the water."

Buelow stressed that testing wastewater and soil composition can help growers anticipate and mitigate how the two will interact—for example, with gypsum amendments or by switching to potassium-based wastewater cleaners. "You just need to have all the parts of the puzzle," Buelow told *Wines Vines Analytics*. "We really are convinced it is possible to safely use wastewater."



COURTESY OF CERES IMAGING

Water scarcity may motivate more vineyards to consider recycled water in the future.

## Reusing Water from Vineyard Operations

Some vineyards—like the Napa RCD educational vineyard—can access recycled water from treatment facilities, sometimes mixing it with rainwater or their own well water. Other vineyards recycle excess water from day-to-day operations on site, such as cleaning and sanitation or grape processing.

Producing 1 gallon of wine results in roughly 7 gallons of wastewater. Growers can pump that water, which contains grape residues and sugars, into a reservoir where solids sink to the bottom.

"The problem with this passive cleaning of water is that any solids remaining in the water can clog irrigation lines," said Garcia. For this reason, he recommends the use of biofilters. "Think of a biofilter as a miniature ecosystem. These natural filters, made of vegetation, root systems, rocks and sand, naturally clean the water to remove the excess solids and nutrients so it can easily pass through irrigation lines without clogging them."

As with those using recycled water from treatment plants, vineyards reusing their own wastewater must also be monitored for how that water interacts with the soil. Cleaning products may lead to sodium buildup while grape solids and juices can elevate potassium levels. Unmanaged, either can disturb soil structure or become toxic to vines.

## Recycling in Action: Trinchero Family Estates

Though implementing the use of recycled water takes care and attention, many growers are finding creative ways to make it work. Trinchero Family Estates, a long-time Ceres Imaging partner and one of the largest wineries in the U.S., is one example. The operation treats winery wastewater for cleaning equipment, landscaping and to grow crops and is also exploring ways to use treated wastewater in cooling towers.

Ted Wells, Trinchero's environmental compliance and engineering manager, noted that recycled water applied to the land must meet specific requirements to protect groundwater and grape quality. But even when recycled water cannot be used in the vineyards themselves, Trinchero has another solution: they partner with a local rancher, who grows corn, sorghum and rye for cattle feed.

These crops can take advantage of the nutrients in the treated wastewater, including the water available during the summer and after harvest. "Wastewater components vary, according to what processes are occurring," Wells explained. "The vines require very precise, consistent inputs, but the other crops and the landscaping readily accept the variability in nutrients."

Critically, recycling is just one aspect of the business' holistic approach to water conservation. "We focus on minimizing and optimizing water use," said Wells. "For example, winemakers plan to receive grapes on a schedule designed to minimize cleaning between varieties. Automation, pressure washing and air cleaning also play a role.

"Monitoring and tracking each part of the process enables us to know exactly how much water is used and where it's being used," concluded Wells. "We continually strive to streamline each step." **WBM**

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2 Buelow, Maya C., Kerri Steenwerth, Lucas C.R. Silva, Sanjai R. Parikh. 2015 Characterization of Winery Wastewater for Reuse in California, *Am. J. of Enol. & Vit.*, August 2015 66. *www.ajevonline.org/content/66/3/302.full*

COURTESY OF CERES IMAGING

Vineyards reusing their own wastewater must also be mindful of its interaction with the soil.

VITICULTURE IN NEW YORK:

# Past, Present and Going Forward

*Linda Jones McKee and Tim Martinson*

**THE WINE AND GRAPE** industry in New York has changed significantly in the last 40 years. In 1980, California produced over 90 percent of the nation's wine production, while New York was second with 7.3 percent.

Four wineries dominated the New York wine scene until the Farm Winery Act was passed in 1976, and within seven years, 47 wineries had opened. However, in the 1980s, the demand for labrusca wines declined and the large NY wineries reduced their grape purchases. In 1984, Taylor Wine Company announced that the contracts for grape purchases for both Taylor and Gold Seal Vineyards were being canceled, and the NY wine and grape industry slid downhill into a crisis.

While some growers who had planted grapes to sell to the large wineries left the industry in the 1980s, others started their own wineries. Dr. Konstantin Frank, founder of Dr. Konstantin Frank's Vinifera Wine Cellars on Keuka Lake, had been successfully growing vinifera grapes since the 1960s. Growers began to listen to him and planted vinifera varieties such as Riesling and Cabernet Franc. Other growers followed the lead of Monty Stamp, who planted French hybrid varieties in the late 1970s and opened Lakewood Vineyards on Seneca Lake in 1989.

By 1990, vineyard acreage in the Finger Lakes region had decreased by a third, from 14,000 to 10,000 acres. New York growers and winemakers, however, had several advantages that other grape growing and winemaking areas East of the Rockies did not. The region had a history of grape production dating back to the 1860s, experienced growers, access to grapes that major processors no longer needed, and expertise provided by Cornell University's longstanding grape and wine research and extension program.

The relationships between growers and winemakers and the researchers and extension personnel were not the same as they are today. At that time, researchers and extension specialists in New York organized the Grape Grower Convention and the Wine Industry Workshop for growers and winemakers to attend and learn new information to take home with them, which was then applied in the vineyards and the wineries. The researchers generated knowledge, extension disseminated that knowledge, and growers and winemakers adopted practices based on information that had been given to them (**FIGURE 1**).

## The Present

Today, the state of New York has approximately 35,000 acres of grapes [Note: the U.S. Department of Agriculture has not completed a count of vineyard acreage in New York since 2011] and 438 wineries, and the ways researchers, extension personnel, growers and winemakers interact has changed. Now there is more communication between these different groups: ideas are considered, and questions are raised by growers who grow the grapes, extension personnel have a broader, generalist focus, and researchers have a more specific, disciplinary focus.

These changes in approach had an impact on other means of communication such as conferences and publications. One important example was the implementation of the B.E.V. NY conference in 2014. The first B.E.V. NY conference combined the resources of Cornell's Enology Program, the Finger Lakes Grape Program and the Charles H. Dyson School of Applied Economics and Management. One day focused on business topics, a second day on enology, and a third on viticulture, with time for growers, researchers and extension personnel to talk with one another and discuss all sorts of problems and ideas for solution.

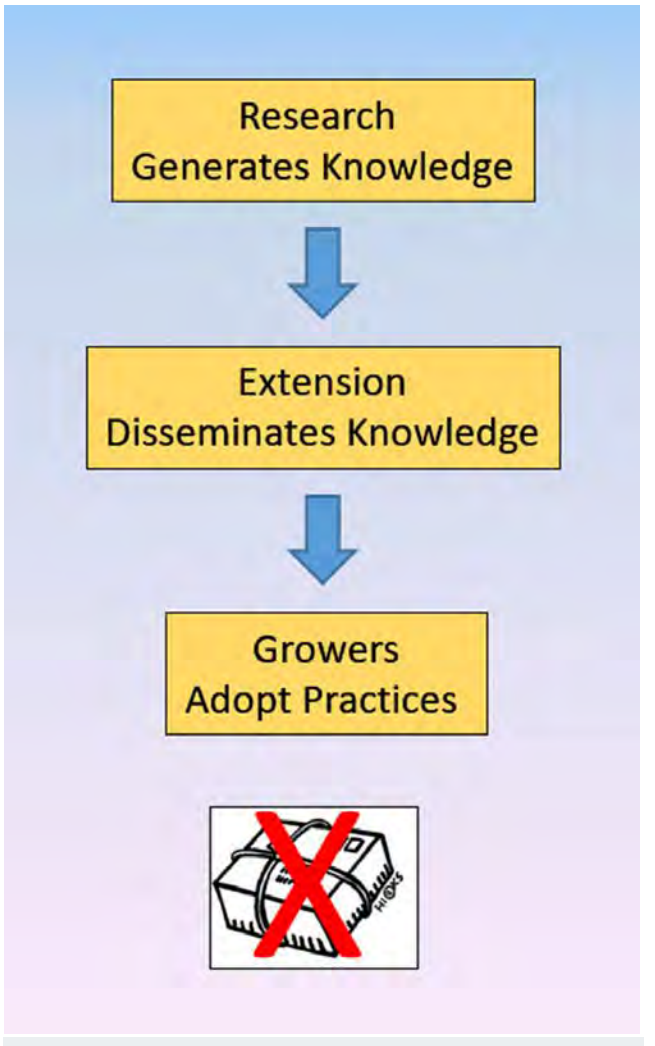


**FIGURE 1** The "package" way of delivering knowledge to grape growers.

Dr. **Tim Martinson** was appointed statewide viticulture extension associate at Cornell University's College of Agriculture and Life Sciences. In 2019 he received the American Society for Enology and viticulture – Eastern Section's Outstanding Achievement Award.

The 2022 B.E.V. NY took place on March 29 to March 31 via webinar. One of the presenters was Dr. Tim Martinson, who was hired in 1991 as a research associate with the grape entomology program at Cornell's NYS Agricultural Experiment Station in Geneva. He retired in January as senior extension associate of the Statewide Viticulture Extension Program in Cornell University's Department of Horticultural Sciences. His career in viticulture spanned the years of change from research and extension results being delivered to growers as a package to the more interactive, collaborative approach today.

Martinson had received his Ph.D. in entomology from Cornell in 1991 and spent the next five years learning about viticulture from the perspective of an entomologist working on insects such as the eastern grape leaf hopper, an insect that was affecting the yield and quality of Concord grapes.

In 1997, Martinson became the grape extension specialist for the Cornell Cooperative Extension's Finger Lakes Grape Program. One project he started that year was the development of "agricultural environmental management worksheets for the New York soil and water conservation districts." This project led to wine and grape industry groups requesting in 2004 that Cooperative Extension grape programs develop an outreach and education program to promote the adoption of sustainable viticulture practices in New York vineyards.

He also joined an on-going project in 1997 that focused on the grape set malady Millerandage, where developing florets would dry up in hedged vineyards and disappear before bloom or vines had no clusters at all. During the project, Martinson did hand pruning, as well as yield and cluster counts, and found that vines with a limited node number were cured.

Martinson worked with other extension personnel, including Alice Wise on Long Island, who had been involved in creating the Long Island Sustainable Practices Workbook, and focused on the development and production of The New York Guide to Sustainable Viticulture Practices Grower Self-assessment Workbook that was based in part on the workbook drafted on Long Island.

Another major project was the development of the VineBalance sustainable viticulture program. Funding from the Northeast Center for Risk Management Education got the project started in about 2004. A Farm Viability grant, written by Martinson, allowed the first VineBalance workbook to be completed in 2007. The workbook was based on the New York Agricultural Environmental Management (AEM) worksheets developed by Martinson in 1997 and 1998 at the Cornell Cooperative Extension Finger Lakes Grape Program, the Long Island Sustainable Viticulture Program draft workbook, and the Yates County Soil and Water Conservation District. In the years 2006-2008, the VineBalance program helped 100 juice and wine grape growers to reduce nitrogen applications by 40 percent, reducing fertilizer applications, and saving $455,000 annually.

## Viticulture Extension Goes Statewide

In 2007, Martinson became the statewide viticulture extension associate, a

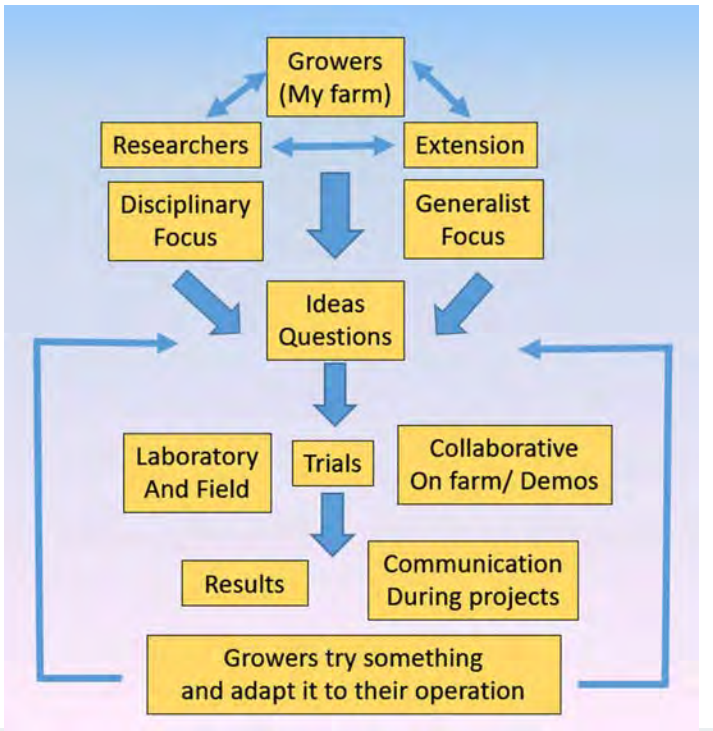


**FIGURE 2** The "process" of researchers, extension personnel and growers working together on a project.

position established for him, with the goal of creating a statewide viticulture extension program. According to Martinson, the VineBalance program got him to work with other grape growing areas in New York and helped him transition to a statewide extension program at AgriTech.

As part of that program, Martinson started to publish "Appellation Cornell," a quarterly online publication that features articles and news about viticulture and enology research, extension and teaching programs at Cornell. The first Research Focus column in "Appellation Cornell" reviewed a study conducted by Dr. Gavin Sacks and Dr. Justine Vanden Heuvel on leaf removal timing and green flavors. They found that early leaf removal, right after fruit set, is critical to reduce the potential for "green aromas" associated with methoxypyrazines. That column had a big impact on the quality of Finger Lakes red varieties, as growers put a higher priority on getting leaf removal done in a timely fashion. Some growers even bought machines to do the leaf removal.

Martinson also created and edited a second publication, "Viticulture to Harvest," in cooperation with New York's regional extension programs. This weekly electronic newsletter provides regional and statewide data concerning grape harvest in New York, from late August through early November.

During his years in the position of statewide viticulture extension associate, Martinson approached extension in a different way from the model mentioned above, where researchers gather the information, pass it on to extension personnel, who then disseminate it to growers, who put it into practice.

Getting growers to use the results presented by researchers is not a simple task. "It's more complicated," Martinson stated. "It starts with discussions among researchers, extensionists and growers. Researchers bring their disciplinary focus; extensionists are the generalists, and the growers have the perspective of managing their stuff and have ideas and questions, and this leads to trials and results. There's communication during the project, not just something that happens at the end, and growers adapt it to their operation. And then the process repeats. This is the key process that has been important to my extension career. It doesn't result in a package; it's more of a process that we go through" (**FIGURE 2**).

Martinson cited one project that increased his confidence in this approach to extension. A week after temperatures had been in the 50s in the Finger Lakes, temperatures went down to -12° to -18° on January 9 and 10, 2004. Growers

lost about 20 percent of the 1,647 acres of vinifera grown in the Finger Lakes, the most severe winter injury since the "Christmas Massacre" in 1980.

Subsequently, two surveys were conducted about the impact of the winter injury to vines. One survey was conducted by the Finger Lakes Grape Program that looked at a 30-vine sample in 219 vineyard blocks and a second survey was done by 47 growers in the Finger Lakes region who did a self-reporting survey of 328 vineyard blocks and a total of 2,144 acres of vineyard.

The results from these two surveys were remarkably consistent. Martinson and Dr. Gerald B. White, professor of agricultural, resource and managerial economics at Cornell University, used the results of the two surveys to generate a report that estimated there was a $10 million loss in the vineyards and a loss of $52 million for the value of the lost wine production.

The self-survey by the growers also provided information about the effectiveness of hilling up vines before winter arrived. Results showed that growers who didn't hill up had up to 100 percent vine loss; while those who did hill up to protect the graft union had a much narrower range, between 0 and 20 percent, vine loss. The following summer, Senator Hillary Clinton visited Lakewood Vineyards in Watkins Glen to see the damaged vines, with the result later that Congress funded a "tree assistance program" to replace the vines.

Lakewood Vineyards has acres of grapes on the hill sloping down to Seneca Lake. The vineyards were originally planted by Monty and Bev Stamp in the 1970s. Stamp added hybrid wine grapes to the vineyard in the 1980s, and the couple opened the winery in 1989. Currently Lakewood Vineyards produces 35,000 cases annually and is run by three generations of the Stamp family.

An outdoor tasting area and patio has a view of the vineyards planted on the hill from Lakewood Vineyards towards Seneca Lake.

# More Recent Extension Projects

## Northern Grapes Project, 2011-2016

The emergence of cold hardy varieties from the Swenson and University of Minnesota grape breeding programs in the 1990s stimulated a new and rapidly expanding industry of small vineyards and wineries in New England, northern New York and the Upper Midwest that helped to boost rural economies in those regions. The Northern Grapes Project, which started in September 2011, was based on two years of planning meetings led Martinson, Murli Dharmadhikari (University of Iowa) and Dr. Jim Luby (University of Minnesota). The program addressed four objectives:

- Varietal performance and resulting fruit and wine flavor attributes in different climates (the vine);
- Applying appropriate viticultural practices to achieve consistent fruit characteristics for ripening (the vineyard);
- Applying winemaking practices to their unique fruit composition to produce distinctive wines that consumers will like and purchase (the winery);
- Understanding consumer preferences, individual/regional marketing strategies to increase sales and sustained profitability of wineries and vineyards (the tasting room).

A Specialty Crop Research Initiative, funded by the U.S. Department of Agriculture National Institute of Food and Agriculture, allowed research and extension personnel in 11 universities in the Upper Midwest and the Northeast to work together on focus areas of production, distribution and processing, consumers and markets.

By the end of the project, a considerable amount of research data had been collected on subjects, ranging from the performance of Marquette, Frontenac, Frontenac Gris, La Crescent and St. Croix across different environments to studies evaluating tasting room customers and wine branding.

Art and Joyce Hunt opened Hunt Country Vineyards high above Keuka Lake in 1988. The Hunts have been leaders in vineyard sustainability for decades and started using hay to protect cold-sensitive vines when they took over the family farm in 1973.

## VitisGen2, 2017-2021

During the years 2017 to 2021, Martinson was the outreach coordinator for the USDA funded VitisGen2 project that has combined the efforts of grape geneticists, plant pathologists, enologists, and four grape breeding programs: the USDA in California, the University of Minnesota, Missouri State University, and Cornell University. The goal of the project was to identify genetic markers for disease resistance and fruit quality.

According to Martinson, his job as outreach/extension coordinator was to translate the jargon of genetics for an industry-wide audience. He stated, "Marker-assisted selection is a game-changing technique for grape breeders, but the ultimate product—grapevines you can plant—is still 15 to 20 years in the future. The overall message is that marker-assisted selection allows breeders to make better selections and discard more grape seedlings before planting them in the field."



## New York Wine & Grape Foundation Sustainability Program

In 2017, the New York Wine & Grape Foundation (NYWGF) participated with the California Sustainable Winegrowing Alliance in planning the first U.S. Sustainable Winegrowing Summit, and the two organizations organized the second Summit held virtually in April 2021. According to Sam Filler, executive director of NYWGF, planning these summits "instigated our own efforts to revitalize VineBalance and establish a statewide sustainability certification program. Sustainability presents our nation's grape growers the opportunity to seize a leadership position and demonstrate how agriculture can be part of the solution to climate change."

In April 2021, Sam Filler announced that Whitney Beaman had been chosen to be the Sustainability Program Manager for the Foundation's new sustainability program. By June, a grower sustainability survey had been conducted, with almost a quarter of the New York grape industry (representing 7,538 total acres across all seven major American Viticultural Areas) responding. A grower sustainability advisory committee and a technical review committee were established in August.

## VineBalance 2022

The "VineBalance 2022" workbook was released by the NYWGF in February 2022. Industry groups from across New York State, including juice grape cooperatives, large wineries based in the Finger Lakes and Lake Erie regions, to small wineries both in the Finger Lakes and on Long Island, requested that this workbook be developed, and all groups were represented on the steering committee for the project. It was based upon a VineBalance Gap Analysis that compared the original VineBalance self-assessment workbook from 2007 to leading sustainability certifications around the country.

The workbook offers guidance to grape growers in not only New York, but in all of the Northeastern United States on evaluating and adopting best management practices that include:

- Soil management to reduce erosion, runoff and leaching;
- Use of integrated pest management practices for insect, disease and weed management;
- Nutrient management, with a focus on nitrogen use;
- Pesticide management and spray technology; and
- Cultural practices used in viticulture.

Areas included in VineBalance 2022 that were not in the first edition in 2007 are 1. encouraging healthy ecosystems, biodiversity, and wildlife habitat; and 2. Fostering a socially equitable and economically viable industry.

## Sustainability Pilot Program

According to the NYWGF, the goal of the Sustainability Pilot Program is to conduct a trial of a system for third-party certification of sustainable vineyard practices in New York State. The VineBalance 2022 workbook will be the basis for this certification. On March 8, 2022, the NYWGF announced a partnership with two Vineyard Inspectors for the Sustainability Pilot Program, Martinson and Chris King, who has 24 years' experience managing sustainable, organic, biodynamic, and conventional vineyards in the Finger Lakes.

A group of 40 growers will participate in the Pilot Program from March to May 2022, and the results from that program will be the basis for the launch of the New York Sustainable Winegrowing Certification Program in 2023. When a grower becomes certified, they will be allowed to use the certification logo for special labeling and direct-to-consumer marketing.

## Future Challenges

At the conclusion of his talk during the B.E.V. NY webinar, Martinson commented on some of the challenges that growers, extension personnel, and researchers will be facing now and in the future. Those challenges include:

1. *Climate change:* Warmer temperatures will help grapes ripen more-consistently, but wetter conditions and warmer night-time temperatures are creating the ideal conditions for increased post-veraison fruit rots, as New York experienced in 2018 when sour rot increased explosively in many vineyards.

2. *Sustainable practices:* Martinson noted that carbon sequestration and greenhouse gas mitigation are goals now enshrined in the New York State Climate Protection Act. Reducing Ag greenhouse gas emissions can be accomplished by avoiding tillage, use of cover crops and reducing nitrogen inputs. While New York growers have been doing all these practices since the 1990s, third-party sustainability certification will help document this accomplishment.

3. *Precision AG:* More mechanization will happen in the future, with less hand work, in part because of a labor shortage for vineyards. Sensor based precision AG techniques will continue to be developed. The challenge will be integrating all this new information and data into practical management tools. No grower wants to spend hours each week in front of a computer!

4. *Invasive pests:* Martinson stated that there have been 4 or 5 new invasive species during his career. The spotted lanternfly is just the latest, and perhaps the one that will have the most significant impact on grape production. Coping with invasive pests will be a continual challenge for the industry. **WBM**

PACK DESIGN SHOWCASE

# Catching the Eye of E-Comm Shoppers


## Myth

Healdsburg, Calif. | *hemispheres.wine*
**AVG. BOTTLE PRICE:** $19.99
**VINEYARD ACREAGE:** 185

## Packaging Vendors

**DESIGNER:** Steve Sieler
**BOTTLE VENDOR:** Ardagh Group
**CLOSURE VENDOR:** Portocork America
**CAPSULE VENDOR:** Enoplastic USA
**LABEL VENDOR:** Labeltronix

**HEMISPHERES WAS FOUNDED IN** 2014 and is based in Morgan Hill, Calif. While the firm is a winery, importer and wholesaler, its primary focus is on creating brands for the direct-to-consumer (DTC) sector. The company's portfolio of brands includes Stone & Glass Cellars, Fair Oaks Ranch, Racine, Sierra Trails, Myth and several others. In addition to creating its own brands, Hemispheres has also partnered with Los Angeles-based Drinks, which specializes in brand development for e-commerce and DTC, as well as omnichannel sales and marketing.

An entry in the Classic category of the 2021 Pack Design Awards, the 2020 Myth California Red Blend features a colorful, dramatic image of a dragon framed by a label with torn edges on the top and bottom. While the artwork has a slightly medieval style, anachronistic elements add to the image's complexity and blend myths, both historic and current. The dragon clutches a rocket ship in its talons, two figures (one with a canine head) frame the lower corners of the label while what looks to be an example of an unidentifiable aerial phenomenon is in the upper right-hand corner.

The images and colors are all intended to capture the eye of shoppers who aren't perusing a retail aisle but clicking through a website. Hemispheres specializes in brand development for e-commerce retailers, and the Myth brand was designed by Steve Sieler specifically for the e-commerce and DTC market. According to the winery, the label's use of bold, eye-catching colors and patterns helps it "pop online" while the dragon alludes to the wine's flavor profile, and whimsical images draw shoppers in for another look or a few clicks to enlarge the image.

***Q: What are the main differences in design strategy for the two channels?***

***Q: A key part of the retail experience is picking up a bottle. Is there anything similar in the design considerations for e-commerce?***

***Q: What should one consider when positioning a brand for both retail and e-commerce?***

***Kristin Rozum,*** vice president of brand and creative for Drinks, discussed the differences in packaging strategy and brand development for e-commerce.

**Rozum:** When we develop e-commerce focused wine brands we design for screens of all sizes, from your mobile phone to a desktop monitor. Labels tend to be higher contrast, use bold design elements rather than fine details, and often incorporate vivid colors. We're always thinking about how a brand would look on Instagram and how it could fit into our customers' lifestyles.

**Rozum:** Consumers can't touch the bottle in the digital world, but they have a rich set of information to help inform their decision. E-commerce shoppers evaluate flavor descriptors, wine characteristics, the wine's story, awards earned, and reviews from other customers.

The most significant difference in developing online-first brands is that we first look to eco-friendly, lower-weight glass. Being heavy doesn't generally translate to a photograph or web page. Therefore, we gravitate to thinner packaging that reduces the carbon footprint of wine shipped to customers' homes.

**Rozum:** There is a wide range of finishes and design elements have a larger impact at retail than in e-commerce. Things like embossing, gloss, and micro-details are hard to convey with photography. Paper stock is important in both mediums, but the shape, size, and die-cut of a label takes on additional importance when a photograph plays a more significant role in the purchase decision. In addition, wine capsules have less importance online. In full-bottle photographs, capsules are a relatively small part of the overall branding. Our data suggest that consumers may be open to forgoing capsules altogether, which are very rarely recycled, in support of more sustainable packaging. **WBM**

WINES&VINES

# BUYER'S GUIDE

## Select Bottle Venders

**All American Containers, a Veritiv Company**
Santa Rosa, CA ✈707) 838-8864
*allamericancontainers.com*

All American Containers, a business of Veritiv

**Amcor Rigid Packaging**
Fairfield, CA (707) 637-4205
*amcor.com*

**Ardagh Group, Glass**
Indianapolis, IN (707) 200-9350
*ardaghgroup.com*

**Ball Corp.**
Westminster, CO (303) 469-3131
*ball.com*

**Berlin Packaging**
Fairfield, CA (707) 389-7600
*www.berlinpackaging.com*

**BPS Glass**
Miami, FL (305) 602-5644
*bpsglass.com*

**Brewmaster**
Pittsburg, CA (800) 288-8922
*bottlesandmore.com*

**Brewmaster**
Pittsburg, CA (800) 288-8922
*brewmasterwholesale.com*

**Brick Packaging, A Saxco Division**
Traverse City, MI (866) 770-7600
*brickpackaging.com*

**CFP Winemakers**
Pittsburgh, PA (412) 232-4507
*cfpwinemakers.com*

**CirclePak Bottle Supply**
St. Catharine, Ontario (855) 704-1708
circlepak.ca

**Dempsey International Packaging**
Centennial, CO (720) 405-9001
*dempseyinternational.com*

**Encore Glass**
Fairfield, CA (707) 745-4444
*encoreglass.com*

**Estal**
Barcelona, Spain (305) 213-2663
*www.estal.com/en*

**Four Lakes Label**
Sun Prairie, WI (800) 798-7989
*orderlabel.com*

**Gallo Glass Co.**
Modesto, CA (209) 341-4527
*www.galloglass.com*

**Glass and Growlers**
Las Vegas, NV ☎ (702) 644-8879
*glassandgrowlers.com*

**Global Package, LLC**
Napa, CA (707) 224-5670
*globalpackage.net*

**Hauser Packaging, Inc.**
Portland, ME ☎ 888-600-2671
*hauserpack.com*

**Innovative Sourcing, Inc.**
Yakima, WA ☎ 509-452-4800
*innovativesourcing.com*

**IPS, Inc. (International Packaging Supply)**
Fairfield, CA (707) 425-9910
*ipspkg.com*

**KinsBrae Packaging**
Cambridge, ON (519) 800-3521
*kinsbraegroup.com*

**Lodi Winery Laboratory**
Lodi, CA (209) 339-1990
*lodiwinelabs.com*

**M.A. Silva USA**
Santa Rosa, CA ☎ 707-636-2530
*masilva.com*

**National Packaging Services**
Secaucus, NJ (201) 488-670
*oaktradition.com*

**Nuance Winery Supplies**
St. Catharines (289) 929-1671
*nuancetrade.com*

**Oak Tradition**
Walla Walla, WA (509) 200-9157
*oaktradition.com*

**O-I**
Perrysburg, OH (469) 443-1000
*o-i.com*

**Phoenix Packaging International Corp.**
Montreal, QC (514) 487-6660
*phoenixpackaging.com*

**Pioneer Packaging**
Kent, WA (253) 872-9693
*pioneernort.west.com*

**Prestige Bottling Company**
Napa, CA (707) 771-6334
prestigebottling.com

**Rich Xiberta USA**
Cotati, CA (707) 795-1800
*www.xiberta.com*

**Saverglass, Inc.**
Fairfield, CA (707) 259-2930
*saverglass.com/en*

**Saxco International**
Concord, CA (877) 641-4003
*www.saxco.com*

**Spirited Packaging**
Stockton, CA ☎ 209-462-6705
*www.spiritedpackaging.com*

**TricorBraun WinePak**
Fairfield, CA (707) 399-5800
*tricorbraunwinepak.com*

**United Bottles & Packaging**
Laval, QC (450) 622-1600
unitedbottles.com

**Universal Packaging**
Vernon, BC (866) 549-1323
*thinkuniversal.com*

**Verallia**
Fairfield, CA (707) 419-7200
*us.verallia.com*

**Vetroelite**
New York, NY (646) 559-0674
*vetroelite.com*

**Vintner Vault**
Paso Robles, CA (805)226-8100
*thevintnervault.com*

**Waterloo Container Co.**
Waterloo, NY (315)-539-3922
*waterloocontainer.com*

Supplier of Wine Bottles, Caps, Corks and Closures

**West Coast Bottles, LLC**
West Sacramento, CA (800) 282-2028
*westcoastbottles.com*

**Wine and Beer Supply**
Ashland, VA ✈844) 482-9463
*wineandbeersupply.com*

**WP Bottle Supply**
Milwaukee, WI (414) 482-4300
*wbbottle.com*

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RETAIL SALES ANALYSIS

# Retail Wine Sales Down 6 Percent in March

*Wines Vines Analytics*

## SALES VALUE DOWN 6 PERCENT IN MARCH

Off-premise table wine sales fell 6 percent versus a year ago to just under $1.2 billion in the four weeks ended March 26, NielsenIQ scan data showed. Sales in the latest 52 weeks approached $16.1 billion, down nearly 9 percent from the previous year. All but a few segments of sales posted declines, with the exceptions being wines priced at $20 a bottle and up and those in 375ml glass bottles. The activity is establishing a new baseline characterized by more expensive wines packaged in smaller formats.

## SALES VOLUME DOWN 8 PERCENT IN MARCH

Off-premise table wine volumes dropped 8 percent versus a year ago in the four weeks ended March 26 to 11.6 million 9L cases. The decline contributed to a contraction of more than 12 percent in the latest 52 weeks versus a year earlier to 158 million 9L cases. The sharper drop in sales volume versus value underscored the shift in sales tow more expensive wines. This is highlighted in the fact that volume growth versus a year ago is concentrated in $25-plus wines and 375ml glass bottles, with the latter seeing volume growth outpacing growth in sales value.

## INTERNATIONAL WINES RETAIN MARKET SHARE

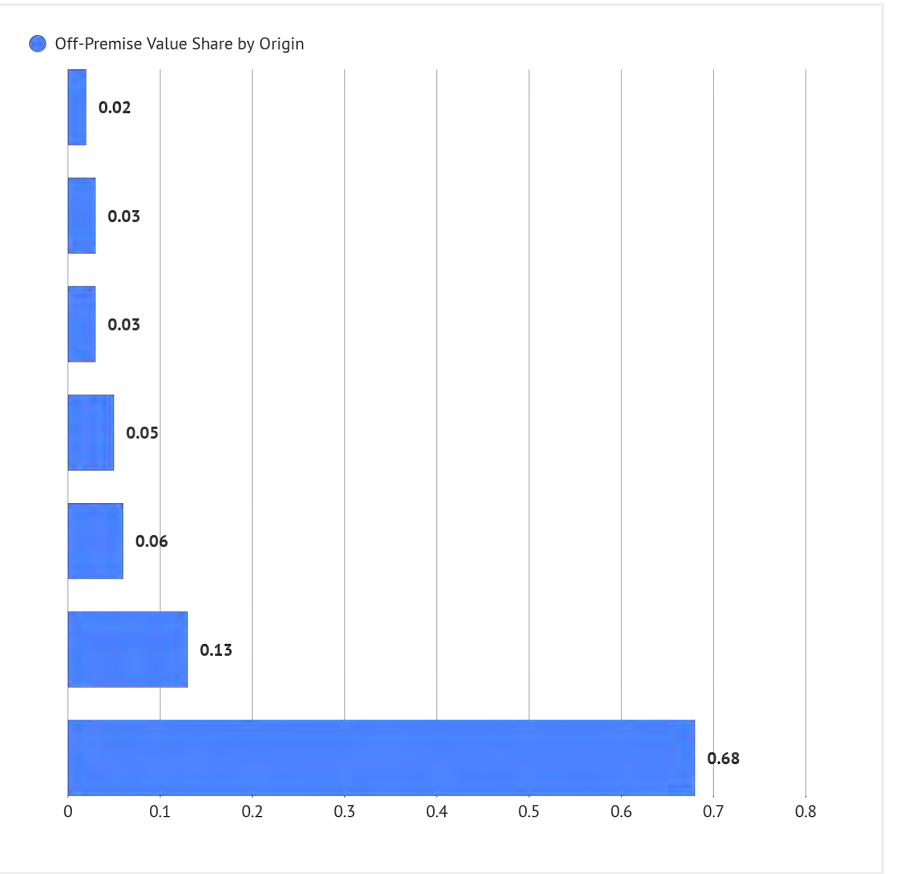
Domestic wines account for more than twice the value of sales through NielsenIQ outlets as imported wines, which tend to be more expensive. The average bottle price of imports is $5.04 versus $4.07 for domestic wines.

But the past two years have seen imports claim share within the retail channel, notwithstanding the effect of tariffs on certain EU table wines. With sales in the latest 52 weeks of $6.5 billion, imports hold 32percent of sales through NielsenIQ outlets while domestic wines at $13.6 billion claim nearly 68 percent.

This is a shift from two years ago when the split was 31 percent for imports and 69 percent for domesticwines.

Sparkling wines, French rosé and New Zealand Sauvignon Blanc have all been credited with givingimports a boost. Indeed, the non-domestic producers with the strongest sales growth a year ago wereFrance (up 35 percent), Italy (up 31 percent) and New Zealand (up 24 percent). With the marketstabilizing, these same countries have also seen the least drop in sales: French wines were down 2 percentto $1.3 billion, New Zealand was down 3 percent to $647 million and Italy saw sales drop 6 percent to $2.5 billion. However, Italy's drop still leaves it with 13 percent of total sales, up from 11 percent two years ago. France also gained a percentage point to claim a 6 percent share of the channel while New Zealand held steady at 3 percent.

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




SOURCE: NIELSENIQ, OFF-PREMISE SALES IN THE 52 WEEKS ENDED MARCH 26

### Methodology

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

## NielsenIQ Table Wine Category Segments **MARKET:** Total US xAOC+Conv+Military+Liquor Plus **PERIOD:** Week Ending February 26, 2022

| | | Dollar Value | | Dollar Value % Chg YA | | 9L Equivalent Volume | | 9L Equivalent Volume % Chg YA | | Avg Equivalent Price Per 750ML | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Latest 52 Wks - W/E 03/26/22 | Latest 4 Wks - W/E 03/26/22 | Latest 52 Wks - W/E 03/26/22 | Latest 4 Wks - W/E 03/26/22 | Latest 52 Wks - W/E 03/26/22 | Latest 4 Wks - W/E 02/26/22 | Latest 52 Wks - W/E 03/26/22 | Latest 4 Wks - W/E 03/26/22 | Latest 52 Wks - W/E 03/26/22 | Latest 4 Wks - W/E 02/26/22 |
| | **TOTAL TABLE WINE** | 16,061,489,610 | 1,179,742,958 | -8.7 | -5.9 | 158,097,510 | 11,645,273 | -12.5 | -8.2 | 8.47 | 8.44 |
| PRICE TIERS BY CONTAINERS | BOX | 1,570,524,038 | 121,522,258 | -10.4 | -2.3 | 35,407,192 | 2,698,872 | -11.3 | -4.6 | 3.70 | 3.75 |
| | $0-$3.99 | 559,034,287 | 43,440,510 | -13.3 | -5.0 | 18,645,302 | 1,406,909 | -13.6 | -8.2 | 2.50 | 2.57 |
| | $4+ | 1,010,751,721 | 78,015,123 | -8.8 | -0.8 | 16,747,982 | 1,290,738 | -8.7 | -0.4 | 5.03 | 5.04 |
| | Total Table Wine Glass | 14,153,872,876 | 1,033,540,068 | -8.7 | -6.3 | 118,963,569 | 8,677,298 | -13.1 | -9.4 | 9.92 | 9.93 |
| | Value Glass $0-$3.99 | 482,900,427 | 36,388,983 | -19.2 | -11.7 | 11,937,864 | 880,617 | -20.0 | -13.9 | 3.37 | 3.44 |
| | Popular Glass $4-$7.99 | 2,699,571,780 | 200,619,384 | -16.5 | -9.3 | 40,177,864 | 2,954,488 | -17.1 | -10.7 | 5.60 | 5.66 |
| | Premium Glass $8-$10.99 | 3,107,281,749 | 227,913,993 | -13.9 | -8.8 | 27,227,734 | 1,983,132 | -14.2 | -9.8 | 9.51 | 9.58 |
| | Super Premium Glass $11-$14.99 | 3,671,665,017 | 267,136,399 | -6.7 | -5.8 | 24,150,490 | 1,733,940 | -7.4 | -7.7 | 12.67 | 12.84 |
| | Ultra Premium Glass $15-$19.99 | 1,940,020,795 | 144,676,460 | -2.2 | -1.3 | 9,422,409 | 699,591 | -3.2 | -3.7 | 17.16 | 17.23 |
| | Luxury Glass $20-$24.99 | 826,897,412 | 58,800,379 | 0.7 | -2.9 | 3,136,441 | 220,506 | -0.4 | -4.5 | 21.97 | 22.22 |
| | Super Luxury Glass $25+ | 1,407,184,625 | 96,171,805 | 6.8 | -2.9 | 2,792,397 | 193,910 | 3.9 | -4.1 | 42.00 | 41.33 |
| IMPORTED | IMPORTED | 4,406,892,282 | 317,069,582 | -10.5 | -7.9 | 41,959,692 | 3,045,353 | -13.2 | -9.4 | 8.75 | 8.68 |
| | ITALY | 1,453,736,757 | 104,357,692 | -10.2 | -10.8 | 11,531,881 | 826,702 | -12.5 | -12.2 | 10.51 | 10.52 |
| | AUSTRALIA | 662,973,983 | 49,439,188 | -16.1 | -10.8 | 10,610,149 | 787,482 | -15.9 | -11.1 | 5.21 | 5.23 |
| | FRANCE | 630,342,145 | 40,427,357 | -6.6 | -6.3 | 3,405,204 | 215,625 | -10.6 | -11.3 | 15.43 | 15.62 |
| | CHILE | 359,728,536 | 27,515,339 | -14.9 | -4.4 | 6,189,611 | 475,375 | -13.8 | -3.6 | 4.84 | 4.82 |
| | SPAIN | 155,985,192 | 11,554,138 | -9.5 | -4.1 | 1,109,387 | 81,558 | -15.2 | -5.9 | 11.72 | 11.81 |
| | GERMANY | 79,627,430 | 5,516,585 | -12.4 | -8.2 | 678,876 | 47,532 | -14.3 | -9.0 | 9.77 | 9.67 |
| | NEW ZEALAND | 643,157,243 | 47,199,343 | -3.2 | 1.4 | 4,416,179 | 318,249 | -4.8 | -1.3 | 12.14 | 12.36 |
| | ARGENTINA | 307,602,597 | 22,736,551 | -15.5 | -10.4 | 3,091,447 | 227,669 | -18.0 | -12.1 | 8.29 | 8.32 |
| | SOUTH AFRICA | 26,103,237 | 1,891,062 | -11.5 | -10.0 | 216,585 | 15,798 | -10.8 | -9.3 | 10.04 | 9.98 |
| | PORTUGAL | 49,561,746 | 3,346,709 | -12.2 | -7.0 | 486,417 | 32,031 | -13.6 | -9.5 | 8.49 | 8.71 |
| DOMESTIC | DOMESTIC | 11,654,597,328 | 862,673,376 | -8.1 | -5.1 | 116,137,819 | 8,599,920 | -12.2 | -7.8 | 8.36 | 8.36 |
| | CALIFORNIA | 10,488,360,981 | 780,374,006 | -7.7 | -4.4 | 107,274,347 | 7,978,370 | -12.0 | -7.3 | 8.15 | 8.15 |
| | WASHINGTON | 593,064,014 | 41,986,241 | -15.4 | -14.4 | 4,691,379 | 331,519 | -16.2 | -15.2 | 10.54 | 10.55 |
| | OREGON | 304,045,712 | 21,824,327 | -3.7 | -2.9 | 1,481,554 | 104,286 | -5.8 | -5.0 | 17.10 | 17.44 |
| | TEXAS | 30,889,102 | 2,233,503 | -15.9 | -13.2 | 329,671 | 22,271 | -18.7 | -21.2 | 7.81 | 8.36 |
| | NEW YORK | 41,697,315 | 2,564,367 | -14.3 | -37.5 | 440,620 | 30,333 | -18.8 | -37.3 | 7.89 | 7.05 |
| | NORTH CAROLINA | 44,798,831 | 3,235,669 | -5.9 | -4.8 | 451,111 | 32,784 | -7.9 | -8.1 | 8.28 | 8.23 |
| | INDIANA | 25,187,298 | 1,866,335 | -10.9 | -6.4 | 270,794 | 19,458 | -10.8 | -10.2 | 7.75 | 7.99 |
| | MICHIGAN | 26,207,323 | 1,602,462 | -12.1 | -7.6 | 260,558 | 15,499 | -14.9 | -11.9 | 8.38 | 8.62 |
| TYPES | RED | 8,346,500,584 | 620,962,824 | -9.2 | -7.0 | 71,988,668 | 5,393,857 | -13.7 | -9.4 | 9.66 | 9.59 |
| | WHITE | 6,509,015,430 | 480,357,936 | -7.2 | -3.2 | 70,864,089 | 5,216,111 | -10.3 | -5.8 | 7.65 | 7.67 |
| | PINK | 1,199,074,477 | 78,326,657 | -13.4 | -11.9 | 15,177,441 | 1,034,366 | -16.2 | -13.9 | 6.58 | 6.31 |
| VARIETALS | TOTAL CHARDONNAY | 2,712,241,312 | 202,090,827 | -7.0 | -3.0 | 29,017,511 | 2,156,641 | -10.0 | -5.7 | 7.79 | 7.81 |
| | TOTAL CABERNET SAUVIGNON | 3,170,882,511 | 236,843,048 | -6.4 | -4.5 | 25,428,669 | 1,939,914 | -11.5 | -5.9 | 10.39 | 10.17 |
| | TOTAL PINOT GRIGIO/PINOT GRIS | 1,467,857,040 | 109,102,514 | -6.2 | -2.0 | 18,042,868 | 1,337,601 | -8.5 | -3.7 | 6.78 | 6.80 |
| | TOTAL PINOT NOIR | 1,331,917,153 | 100,040,401 | -6.0 | -2.9 | 9,052,329 | 681,298 | -10.0 | -5.0 | 12.26 | 12.24 |
| | TOTAL MERLOT | 631,941,686 | 46,905,387 | -14.2 | -10.5 | 7,972,162 | 593,202 | -16.9 | -11.7 | 6.61 | 6.59 |
| | TOTAL SAUV BLANC/FUME | 1,298,005,640 | 96,018,189 | -2.4 | 1.9 | 10,750,295 | 790,336 | -4.8 | -0.5 | 10.06 | 10.12 |
| | TOTAL MUSCAT/MOSCATO | 611,520,045 | 44,085,634 | -17.8 | -13.5 | 8,550,628 | 610,870 | -19.8 | -15.2 | 5.96 | 6.01 |
| | TOTAL WHITE ZINFANDEL | 230,151,481 | 16,613,317 | -16.5 | -12.5 | 4,464,033 | 318,391 | -17.5 | -14.1 | 4.30 | 4.35 |
| | TOTAL MALBEC | 241,136,944 | 18,014,385 | -14.6 | -9.1 | 2,130,967 | 159,980 | -16.5 | -9.3 | 9.43 | 9.38 |
| | TOTAL RIESLING | 232,829,622 | 16,301,992 | -14.7 | -11.0 | 2,310,257 | 161,545 | -17.2 | -12.6 | 8.40 | 8.41 |
| | TOTAL ZINFANDEL | 215,780,189 | 16,134,074 | -14.6 | -11.3 | 1,390,091 | 103,441 | -18.3 | -15.4 | 12.94 | 13.00 |
| | TOTAL SHIRAZ/SYRAH | 113,833,596 | 8,264,614 | -17.6 | -14.9 | 1,165,175 | 85,349 | -21.3 | -16.4 | 8.14 | 8.07 |
| | WHITE BLENDS (ex. 4/5L) | 250,422,267 | 17,770,169 | -10.7 | -9.3 | 2,668,706 | 194,788 | -13.9 | -9.5 | 7.82 | 7.60 |
| | RED BLENDS (ex. 4/5L + CHIANTI) | 2,165,626,154 | 158,886,173 | -10.9 | -9.5 | 17,675,962 | 1,300,111 | -14.9 | -11.6 | 10.21 | 10.18 |
| | ROSE BLEND | 697,821,824 | 41,788,009 | -10.8 | -11.8 | 5,370,024 | 327,156 | -14.1 | -14.7 | 10.83 | 10.64 |
| GLASS SIZES | 750ML | 11,993,289,293 | 873,305,350 | -7.6 | -6.1 | 83,713,149 | 6,074,797 | -11.7 | -9.2 | 11.94 | 11.98 |
| | 1.5L | 1,866,136,354 | 139,211,521 | -15.6 | -7.3 | 30,633,195 | 2,270,042 | -16.4 | -9.2 | 5.08 | 5.11 |
| | 3L | 51,114,787 | 3,935,117 | -17.3 | -9.4 | 1,183,783 | 86,624 | -17.7 | -16.1 | 3.60 | 3.79 |
| | 4L | 66,769,493 | 4,944,868 | -15.7 | -12.1 | 2,036,853 | 148,774 | -16.7 | -14.0 | 2.73 | 2.77 |
| | 187ML | 90,481,779 | 6,288,538 | -13.4 | -14.9 | 1,019,150 | 71,381 | -14.3 | -14.3 | 7.40 | 7.34 |
| | 375ML | 60,998,127 | 4,598,412 | 20.0 | 4.5 | 225,986 | 16,902 | 25.3 | 4.6 | 22.49 | 22.67 |
| BOX SIZES | ex. 4/5L | 1,105,212,944 | 85,637,341 | -9.4 | -1.0 | 19,252,721 | 1,489,791 | -9.4 | -0.9 | 4.78 | 4.79 |
| | 1L | 34,104,049 | 2,655,239 | -2.6 | 11.9 | 483,971 | 37,618 | -3.0 | 12.4 | 5.87 | 5.88 |
| | 1.5L | 18,620,543 | 1,359,580 | -24.1 | -17.3 | 343,076 | 24,518 | -28.0 | -20.0 | 4.52 | 4.62 |
| | 3L | 816,842,261 | 63,068,546 | -12.9 | -2.7 | 15,536,577 | 1,201,313 | -11.3 | -1.8 | 4.38 | 4.38 |
| | 5L | 465,307,543 | 35,884,766 | -12.9 | -5.3 | 16,154,385 | 1,209,077 | -13.5 | -8.8 | 2.40 | 2.47 |
| | TETRA | 270,332,620 | 21,254,984 | 4.8 | 5.9 | 3,378,915 | 264,420 | 3.7 | 5.9 | 6.67 | 6.70 |

Source: NielsenIQ

# M&A Market Remains Strong Though Inflation, Conflicts Create Questions

*Kerana Todorov*

**Kerana Todorov** is a freelance reporter based in Napa.

**THE MERGERS AND ACQUISITIONS** market has been on the fast track over the past year as deals continue to be made. Brokers reported an active M&A market during the first months of 2022; but while they remain optimistic for the remainder of this year, there are a number of new developments worth keeping an eye on.

"The breakout year that we had in 2021, I do believe, is going to carry forward. That momentum will carry forward in 2022," opined Mario Zepponi, principal at Zepponi & Co.

Robert Nicholson, president at International Wine Associates in Healdsburg, also predicts a busy year, with some prominent transactions.

However, rising inflation rates and the war in Ukraine are among the factors that could affect the market, Zepponi and others said.

"How is that going to mess up the momentum that we had in 2021 in terms of the general economy and, more specifically, the merger and acquisition environment in the wine industry? No one really knows. I wish I could tell you 'Oh, no, it's not going to interfere,'" Zepponi noted. "I think it would be highly disingenuous and reckless of me to say that it's not going to interfere… we don't know."

Pat DeLong, founder and principal at Azur Associates, said there are industry players who may have considered an initial public offering (IPO) but are now holding back. "Given the current conditions, the reality of that is quite different right now and not as likely."

The two significant IPO transactions in 2021 were Duckhorn Wine Company and Vintage Wine Estates. Duckhorn maintains a $2 billion market cap while Vintage Wine Estates maintains a $500 million market cap. "Both continue to pursue M&A and make investments with the increased access to capital, albeit with very different portfolios and approaches," DeLong stated.

Exciting Start to 2022 in the Northwest

"The last six months have been some of the busiest we have ever seen," said Erik McLaughlin, CEO of Metis LLC in Walla Walla, Wash. "We've closed a half dozen Northwest deals in that period, and things aren't slowing down."

The wine industry is doing well, particularly at the premium end, McLaughlin and other brokers noted. Top American Viticultural Area properties are "significantly" more in demand and command a stronger price premium than those in more "modest" AVAs, McLaughlin added.

> *"The further away from these highly attractive prime areas the vineyards are, the more unstable the valuations tend to be for vineyards, and in both secondary and outlying areas the more likely they can be in decline."*
>
> Pat DeLong, Azur Associates

"That said, there is very strong growth, specifically in Oregon wines between $15 and $30. There are very few vineyards that have been developed with the scale and infrastructure to reliably produce fruit at the price, volume and quality to support this growth, so the few such 'production vineyards' are also in high demand," McLaughlin remarked.

A variety of deal types are happening. "National and international strategic operators are expanding into the Pacific Northwest. Regional strategic operators are bolting on other businesses within the region. Successful wineries are adding more vineyard land to their portfolios. Financial investors are entering into the space (particularly for vineyards)," McLaughlin said, adding that the tight fruit supply in Oregon and tightening premium market in Washington were fueling interest in vineyard acquisitions.

The market remains robust in the Willamette Valley, according to Andy Steinman, financial advisor at Global Wine Partners. There was a "burst" of transaction closings in the third and fourth quarter of 2021 followed by several deals this year.

"We anticipate activity to continue to focus on the Willamette Valley. There is a great deal of buyer interest as Oregon has been a leading growth category in the U.S. wine trade," Steinman said.

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# M&A Market Remains Strong Though Inflation, Conflicts Create Questions

| CLOSING | TARGET | ASSETS AQUIRED | BUYER | LOCATION |
|---|---|---|---|---|
| YEAR 2021 | | | | |
| November | Redwood Ranch Vineyard | 160-acre property, including 100 vineyard acres | Silverado Investment Mgt. Co. | California |
| November | Seabreeze Vineyard | Vineyard | Grapevine Capital Inc. | Oregon |
| November | Frank Family Vineyards | Integrated Estate | Treasury Wine Estates | California |
| November | Ste. Michelle Wine Estates | Integrated Estate Portfolio | Sycamore Partners | Washington |
| November | Booker Vineyard, My Favorite Neighbor, Harvey & Harriet | Brand Portfolio | Constellation Brands | California |
| November | Wurtele Vineyard | Vineyards / Real Estate | Jackson Family Wines | California |
| November | ReserveBar | e-Commerce | Minibar Delivery | Virtual |
| November | Rancho La Gloria | Brand | The Wine Group | California |
| November | Provenance Winery and Vineyards (Real Property) | Winery / Vineyards | Far Niente | California |
| November | Provenance (Brand Only) | Brand / Inventory | Thomas Allen Vineyards and Winery | California |
| December | Elizabeth Spencer Winery | Brand / Real Estate | Boisset Collection | California |
| December | Olivet Road winery owned by Purple Brands | Production Facility | Refuge Wines | California |
| December | Buttonwood Farm Winery and Vineyard | Vineyards / Real Estate | Gleason Family Vineyards | California |
| December | Jada Vineyard & Winery | Integrated Estate | Riboli Family Wines | California |
| December | Roco Winery | Integrated Estate | Santa Margherita USA | Oregon |
| December | Chateau St. Jean | Integrated Estate | Foley Family Wines | California |
| December | Koosah Vineyard and Farm | Vineyards | Résonance (Maison Louis Jadot, France) | Oregon |
| YEAR 2022 | | | | |
| January | 850 Airport Road | Vineyards | Grapevine Capital Partners | California |
| January | Los Carneros vineyard (Stanly Ranch) | Vineyards / Real Estate | Duckhorn Wine Company | California |
| January | Red Wind Vineyard (St. Helena) | Vineyards / Real Estate | Duckhorn Wine Company | California |
| January | Edge Hill Winery | Integrated Estate | Joel Gott Wines | California |
| February | Paso Robles vineyard | Vineyards | Riboli Family Wines | California |
| February | Tertulia Vineyard and Winery | Integrated Estate | Patterson Cellars | Washington |
| February | Shafer Vineyards | Integrated Estate | Shinsegae Property | California |
| February | Confidential Paso Robles Winery | Vineyards / Real Estate | Confidential | California |
| February | Longoria Wines | Brand / Real Estate | Brooke and Lindsey Christian | California |
| February | Rack & Riddle | Custom Crush Facility | SBJ Capital | California |
| March | Rabbit Ridge Vineyard | Vineyards / Real Estate | Riboli Family Wines | California |
| March | Black Walnut Inn (& Vineyard) | Vineyards / Real Estate | Foley Entertainment Group | Oregon |
| March | Hoxie Spritzer | Brand | Scheid Family Wines | California |

SOURCES: GLOBAL WINE PARTNERS, INTERNATIONAL WINE ASSOCIATES, ZEPPONI & CO., METIS LLC, AZUR

Steinman added that the active market was due to growth in sales of Oregon wine, the relative affordability of land, cooler temperatures and capital availability from the stock market.

The deals are varied, Steinman said. They range from vertically integrated estate wineries to strategic assets.

## California's Hotspots

According to Zepponi, Napa, Sonoma and Oregon are the "hotspots" in the mergers and acquisitions market. In addition, the Central Coast "has seen a lot more activity over the last five years," he added, due, in part, to the growth in wine quality, as well as market value and the ability to scale within the area. Producers can scale production by sourcing fruit from third parties and still realize 45- to 55-percent gross margins. The hottest spots in the Central Coast, he said, are Monterey and the Paso Robles area.

DeLong noted that vineyards in sub-appellations in Napa and Oregon are still the most attractive and the most stable in terms of valuations.

"The further away from these highly attractive prime areas the vineyards are, the more unstable the valuations tend to be for vineyards, and in both secondary and outlying areas the more likely they can be in decline," DeLong said.

Values have to correlate with cash flow, DeLong noted. Farmers will pull vineyards to plant other crops if the grapes do not bring appropriate returns. "The decline of the sub-premium wine category—wines under $11 a bottle—has led to the pulling of many vineyard acres."

When it comes to wine growth, the "real strike zone" is $15 to $20 a bottle, Zepponi observed.

Companies sell to rebalance portfolios. In 2021, Treasury Wine Estates sold Chateau St. Jean in Sonoma County and Provenance in the Napa Valley while acquiring Frank Family Vineyards to "accelerate their share in luxury Chardonnay," DeLong said.

Strategic buyers also seek "marquee" vineyards to grow their luxury brands. Other strategic buyers pursue new channels and categories—for example, Vintage Wine Estates' purchase of ACE Cider in November and Meier's Beverage Group in January. In 2021, Constellation Brands completed the sale of 30 low-end brands and five production facilities to E. & J. Gallo Winery for $810 million.

## Central Coast Vineyard Prices Soar

Jenny Heinzen, a vineyard real estate broker in Paso Robles, stated in March that one of her recent listings had 21 showings and seven offers, including cash offers. Active buyers bid up by more than $1 million over the asking price for the property. The vineyard was leased.

"This is the best market I have seen for vineyard real estate and the first time in my 20 years that the real estate and grape market have converged [both are very healthy] to create a very hot market," Heinzen said.

"Vineyards and production facilities are also selling faster than what I have seen in my 20 years' brokering wineries and vineyards," Heinzen added. "Some of my recent listings have not even made it to the open market before they get snatched up by savvy wine groups."

Buyers pay full price for properties in the $5 million to $20 million range, she said. These properties are in the right location and with the right asset mix of vineyard, residences and production facilities.

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*"There is very strong growth, specifically in Oregon wines between $15 and $30. There are very few vineyards that have been developed with the scale and infrastructure to reliably produce fruit at the price, volume and quality to support this growth, so the few such 'production vineyards' are also in high demand."*

Erik McLaughlin, Metis, LLC

## Who Are the Buyers?

Deals involve strategic buyers, such as E. & J. Gallo and Vintage Wine Estates; private equity firms, such as GI Partners, Sycamore Partners and TSG Consumer Partners; international players, such as the Shinsegae group of South Korea; and lifestyle buyers, according to data from Azur Associates. There is also "significant" e-commerce investment.

McLaughlin noted that there is a wide range of active buyers, including national and international "multi-winery strategic operators." Other active buyers include a steady stream of high net-worth clients and their representatives, such as private wealth management firms that manage their investments. Increasingly, there are "regional strategic operators," he added.

"There are a variety of motivations causing people to buy, but mostly it boils down to some combination of: large companies achieving growth through acquisition, portfolio diversification, leveraging overhead, securing fruit supply or production capacity for successful businesses, and feeding a passion for an exciting industry," McLaughlin concluded.

The most notable private equity transactions in 2021 included New York-based firm Sycamore Partners' acquisition of Ste. Michelle Wine Estates from Altria Group Inc. for a reported $1.2 billion. The brokers interviewed by *Wine Business Monthly* anticipate more investment by private equity firms this year given the historic level of available liquidity.

Private equity firms, Zepponi noted, are aggressively pursuing acquisitions in the wine and spirits space—even more so than some of the larger, strategic wine companies—as many wine companies are large enough to meet the firms' acquisition criteria. Most private equity firms interested in the wine space only consider transactions that are more than $100 million in order to meet those criteria, he added.

"They need and they want to write big checks, but they are very aggressive because there's a lot of capital in our economy right now; and as a result of that, they're aggressively chasing deals, and they're competitive with the existing strategic wine companies that are chasing the same deals," Zepponi continued.

Private equity firms have had "great success, making investments in all various industries in the United States and internationally," Zepponi further stated. "And wine is a consumer product, and wine has that appeal, more so than other industries and other consumer products. That definitely drives the curiosity of investors."

Private equity firms see successful transactions by other private equity groups, Zepponi said. "That encourages more deployment of private equity capital." The wine industry "has been the big beneficiary of that."

Carol Collison, partner at Global Wine Partners in St. Helena, noted in March that "as long as the U.S. wine market remains strong, we should continue to see a lot of appetite for transactions this year from U.S.-based strategic and financial investors."

## International Buyers, Ag Funds Continue to Hunt for Properties

In Oregon, Steinman said buyers include European wine companies that are looking to "plant their flag" in the United States.

"Since the dominant varietal in the Willamette Valley is Pinot Noir, there has been a great deal of activity and ongoing interest from Burgundian winemakers and Champagne houses," Steinman remarked. "In the last few years, we've seen more interest from European buyers outside of France, like Santa Margherita's recent purchase of ROCO."

Other buyers include California producers as they also seek to add brands or SKUs to their portfolios, along with agricultural investment funds that want to buy a vineyard or substantial parcels for vineyard development, and individual investors, according to Steinman.

Moreover, there are established Oregon producers who seek strategic assets, such as a vineyard, to support their growth or others who want a brick-and-mortar home for their business, Steinman said. **WBM**

# Vineyard Values Reflect Water Realities

*Andrew Adams*

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

**THE RELATIONSHIP BETWEEN THE** value of agricultural land and the availability of water has become even more closely linked in the interior regions of California while coastal appellations with more sources of water continue to enjoy steady and rising values because of demand from a variety of investors.

Water has always been, and will continue to be, of paramount importance in vineyard transactions, but in coastal areas where the prices for winegrapes have largely rebounded following the bumper 2018 harvest, it is less of a deal maker or breaker whereas in the interior, water is the first point of consideration.

Coming regulatory oversight granted through California's Sustainable Groundwater Management Act (SGMA), widely referred to as "sigma," continues to dramatically affect the value of properties that are part of a local or regional groundwater district designated as being in "overdraft" status (pulling more groundwater than is naturally recharged) or not included in a district. These properties are expected to see stringent state restrictions on groundwater usage that could limit the land's potential uses.

Values for such properties throughout the Central Valley have fallen dramatically, and there is little demand for vineyards from buyers who continue to be motivated by the better returns offered by almonds and other nut crops. On the coast, purchases by wineries, institutional investors and even lifestyle buyers continue to bolster values while water availability is less of a concern and water costs haven't outpaced potential returns from winegrapes.

"Water is not valuable unless it's cheap," said Daniel Sumner, who is the Frank H. Buck Jr. Distinguished Professor of agricultural and resource economics at the University of California, Davis. In a place like Napa Valley, Sumner noted that the cost of water is much less important, when purchasing or developing a vineyard, because the expected returns are so lucrative and everything else costs significantly more too. "Water matters a hell of a lot more in the Central Valley than it does on the coast, in part, because everything costs more on the coast. Whatever the value of the water itself, from 50- to 100-acre feet, you don't blink an eye in the Napa Valley."

To make his case, Sumner used a hypothetical ranch of 100 acres that is supplied primarily by groundwater. Based on where that land falls under SGMA, it may have plenty of water now, but in five years that supply could be curtailed, and instead of being fully planted, it may only be able to support 80 acres. The lack of water not only limits how many acres are planted but what crops and how many harvests within a season are possible.

In evaluating a property, Sumner said it's also not just the availability and quality of water, but there's also the more important question of the market for one's products. One needs to calculate the long-term revenue potential of a property while discounting costs back to present. For winegrapes in the Central Valley, that calculation is frequently just not penciling out while it still does for pistachios and almonds despite their higher average water needs.

"Some of the old vineyards just aren't viable today," said Tony Correia, principal of the Sonoma, Calif.-based assessment firm Correia Co. "In the Central Valley, where you have some of the very large vineyard holdings, a lot of those are coming out of the ground. Some of them just won't be replanted because of the water supply situation."

The potential limits of SGMA are more acute for properties that are within "white areas," which aren't part of an established water district and will come under the direct management of the state.

"In a lot of those white areas, land values are suffering, in some cases fairly dramatically, and in the land values for the good properties that have dual sources of water–a good surface water supply from a district of some sort, plus good groundwater that's not going to be constrained by SGMA–well then, those land values have been escalating pretty dramatically," Correia noted. "There's a clear escalation to the better water sources. There's a lot of buyers for ground with good water supply. I would say 100 percent of the investment funds will only consider properties with dual sources of water–a surface water supply plus good groundwater."

That is the same assessment reached by members of the California chapter of the American Society of Farm Managers & Rural Appraisers in the group's 2022 Trends report that examines ag land values throughout the state and Nevada.

In the Northern San Joaquin Valley: "Land located in districts with strong water rights, lowest water costs and best delivery histories command the highest price. Properties that are solely reliant on pumped groundwater or are located within federal west-side irrigation districts define the lower end of the range in value."

While in the central part of the valley: "The market for winegrapes has strengthened slightly with stronger pricing; however, values for most vineyards continue to mirror land values. Demand remains driven by good quality soils and water conditions for redevelopment to nut crops."

And it's the same in the southern half of the valley where: "the amount of projected surface water deliveries and groundwater pumping safe yields

available to properties directly equates to how the market views and values the land."

Randy Heinzen is the president and owner of Vineyard Professional Services (VPS) in Paso Robles. The company manages more than 4,000 acres, has developed more than 60 properties, and regularly consults on vineyard acquisitions and sales.

Heinzen stated that banks typically now require two sources of water to secure any type of loan, and that's a pretty good indicator of just how valuable the resource has become. In terms of buying or selling a property, Heinzen said it's critical to understand not just the availability of water but the quality of that supply. "When buyers are coming in, their first question is, 'What is the current well pumping yield and can you give us records to back that up?' We're fairly aggressive and adamant with our client base to have real-time data so they always know where their water is and how much they're pumping."

Prior to his work with VPS, Heinzen managed vineyards in Napa Valley where he said water was, of course, vital, but it wasn't always the main concern because of all the ways to complement groundwater supply. That thinking used to be prevalent in the Central Coast, but growers there now view water in a similar way to farmers in the Central Valley.

In Paso Robles, where much of the region is under a moratorium on new plantings because of an overdraft, planning the water demand of a redeveloped vineyard has become crucial. That means water-efficient rootstocks, vine spacing, trellis, shade levels and even road direction. "All of that comes into the design process, and water is absolutely front of mind," Heinzen said. "As soon as you figure out who's going to buy (the grapes), then it comes down to how am I going to design this vineyard for a lifetime of water uncertainty and climate change?"

According to Nick Cadigan, senior appraiser at American AgCredit and the committee chair for the North Coast section of the Trends report, water does not yet appear to be having a significant impact on the market or value of vineyards in the region. When one considers the value of a ranch in Napa Valley, as well as its potential income over the life of a vineyard, adding an additional well for $30,000 to $100,000 still makes sense. "Up here, that's a pretty small fraction of the total cost," he remarked.

Grape losses from the 2020 wildfires helped spur interest in vineyards in the past year, and that was led by wineries looking to secure supply and institutional investors seeking regular returns. One region that received significant and

early interest was the Los Carneros AVA where Chardonnay vineyards were in particular demand or as stated in the Trends report: "Wineries and growers were active in (Carneros), attracted by market demand for Chardonnay and sparkling wines, relatively low land costs and Napa Valley branding."

The increase in buyer interest, however, did not lift values for the rest of Carneros where prices remained stable and in step with previous years. The best appellations of Napa Valley continue to fetch the highest prices, and demand for these rarefied properties hasn't tapered among the limited number of potential buyers.

The "secondary market"–properties at the northern and southern end of the valley and hillsides that aren't part of premium sub-appellations–haven't seen any significant rebound in interest since the glut of 2018 depressed grape prices and market demand, aside from people looking for a slice of the rural life. "Lifestyle buyers, on the other hand, continued to be active in these areas, in particular along Big Ranch Road in Oak Knoll and the Coombsville neighborhood, which saw a relatively high volume of transactions purchased for their residential appeal and proximity to Napa services," noted the report.

Lifestyle buyers were also driving demand for vineyards with home sites, but properties on hillsides near recent fires sold at mostly discounted prices, considering the cost and challenges to secure insurance. Napa County also saw strong interest from winery buyers as there were several notable deals, including Frank Family Wines, Lewis Cellars, Swanson and others. The main drivers of demand were larger, foreign or domestic wine companies filling specific brand or varietal slots within a portfolio or high net-worth individuals seeking to invest in Napa Valley. "Winery values continue to trend up due to the difficulty in obtaining a permit and high construction costs," the report stated, while "the relatively low cost of financing remained an attractive tool for buyers."

Over in neighboring Sonoma County, much of the same trends were in place, with the best vineyards retaining or increasing in value, whereas the secondary market saw moderate activity, putting aside interest from lifestyle buyers who sought a home plus a vineyard to defray some of the cost of the property. According to the report, "Highly improved estate parcels with a large amount of vineyard proved difficult to sell as the estate buyer found a large amount of vineyard difficult to manage, and the commercial vineyard buyer was unwilling to pay the price for an estate site and structures."

Based on winery sales in the past year, it appears there is little market for winery properties at simply the cost of assets and the land. "Wineries that sell without an established, successful brand would likely be discounted beyond normal levels of depreciation."

In Mendocino and Lake counties, the market was stable although there were no vineyard transactions in Mendocino's Anderson Valley, which commands the highest average prices. Grape growers drove the market for the better vineyard sites that averaged in the low $30,000s per acre while marginal vineyards priced at around $15,000 sold to mainly cannabis growers. While Lake County has enjoyed stronger demand and prices for its Sauvignon Blanc, that has not translated into a significant surge in vineyard demand or prices. Average quality vineyards in Lake County continue to sell in the mid to high $30,000s.

The winegrape market in the Central Coast has stabilized, and that helped stabilize land prices while motivating moderate buying activity, which was also bolstered by lifestyle buyers. Properties within the smaller appellations on the western half of the larger Paso Robles AVA continue to see escalating values and strong demand. "Overall vineyard and plantable land sales throughout the Central Coast in 2021 indicated a stable value trend for average vineyard sites while premium vineyard sites supported an increasing value trend," the report said. **WBM**

# Wineries and Winemaking

David S. Brown

C. Mondavi & Family promoted David S. Brown to the offices of president and CEO, and he will have a seat on the Board of Directors. Brown will continue to lead the national sales team at C. Mondavi & Family in addition to his new responsibilities at the over 160-year-old, family-owned wine company, which includes Charles Krug, Napa Valley's oldest winery and California's first tasting room. Brown brings three decades of sales, marketing, and operational leadership to his new position. Prior to joining the C. Mondavi & Family company in 2017, Brown served as chief sales officer at Pasternak Wine Imports. Before that he was vice-president of sales for Treasury Wine Estates, and held prior sales and marketing positions with Mars, Inc., Procter & Gamble and Johnson & Johnson. Brown earned his B.A. from The Ohio State University.

Angela Muscarella

Opus One Winery named Angela Muscarella as its new production manager. Muscarella now oversees, plans and schedules all production supplies, acts as safety manager, and maintains and enhances the sustainability program. Muscarella studied wine and viticulture at Cal Poly San Luis Obispo. Shortly after receiving her bachelor's degree, she joined the Opus One hospitality program and quickly developed an interest in viticulture and winemaking. She first joined the production team as production coordinator, where she provided support to the winemaker and production team.

J. Lohr Vineyards & Wines promoted industry veterans director of winemaking Steve Peck to the position of vice president, winemaking, and plant manager Ian Herdman to the position of vice president, production, with J. Lohr Vineyards & Wines. Signaling an efficient streamlining that also sees current chief executive officer Steve Lohr take on the additional position of president, this new structure recognizes the achievements and responsibilities of key individuals in the family-owned-and-operated winery after the retirement of president/COO Jeff Meier in December 2021. Peck and Herdman now report to president and CEO Steve Lohr.

Demeine Estates promoted John Vidal and Scott Leverenz to the roles of vice president of sales, west and vice president of sales, east respectively. Vidal and Leverenz have been integral to the company's leadership and growth over the last 18 months. Both began representing the core portfolio of Lawrence Wine Estates historic Napa Valley properties to the wholesale market, including Heitz Cellar, Stony Hill Vineyard, and Burgess, and have taken on additional launches Brendel and Ink Grade, as well as import properties Champagne Legras & Haas and Domaine de Montille. Vidal and Leverenz report to senior vice president of sales, Leila Pearson.

Jeff Zappelli

HALL Family Wines appointed Jeff Zappelli to vice president of sales. Along with his new role, Zappelli will continue to lead the direction and future as general manager of the WALT brand. He leads the winery's domestic and international wholesale sales efforts, driving growth of the company's dynamic wine portfolio that includes the HALL, WALT and BACA wine brands. Over the past 16 years at Hall Family Wines, Zappelli has led myriad

responsibilities at the winery, including efforts to build the direct-to-consumer sales organization overseeing the wine club, phone sales, ecommerce, tasting room and shipping departments.

John Anthony Family of Wines restructured sales regions and appointed industry-veteran Mike Gallo as director of sales, eastern U.S. region. A New Jersey native, Gallo brings more than 20 years of sales experience after a notable career with Banfi Vintners and other distinguished wine companies. In his new role, Gallo oversees the full John Anthony Family portfolio's Eastern U.S. presence, including JaM Cellars, John Anthony Vineyards, Serial Wines, Weather Wines, and FARM Napa Valley.

## Distributors, Importers & Retailers

Rachel Roberts

Pacific Highway Wines welcomed Rachel Roberts as the director, national accounts. Based in the San Diego area, she will focus primarily on retail national accounts chains headquartered in the western half of the U.S. Roberts is an experienced sales director with over twelve years of delivering sales results through analytical and strategic sales, building relationships and providing exceptional communication. She comes to Pacific Highway Wines after a decade with Ste Michelle Wine Estates, serving most recently as the senior national account executive, focused on retail accounts across the Southwest.

Breakthru Beverage Group named Erin Engels to the role of vice president, strategy and corporate development. Engels will manage the development and continuous

Erin Engels

evolution of Breakthru's multi-year strategy with initiatives that support innovation and growth and provide partners increased data insights and expertise. In this bolstered position for the company, Engels will play a key role in the company's expansion plan and further advance Breakthru's strategic priorities, charting the course for 2023 and beyond.  Engels comes to Breakthru from Sysco Corporation, where she held senior leadership positions in the areas of strategy, M&A integration, sales and general management.

Megan Hooff

Republic National Distributing Company appointed Megan Hooff to SVP, national and strategic accounts. Hooff is responsible for the RNDC initiatives related to on-premise sales strategy and execution for national accounts, as well as customer and supplier relations. Prior to joining RNDC, Megan was vice president of on-premise national accounts for the Total Beverage Alcohol (TBA) Division at Constellation Brands (CBI). During her 11 years at CBI, Hooff held several various national and regional sales leadership roles within the wine and spirits organization. In 2017 she joined the TBA division where she managed the national sales team dedicated to the full portfolio of beer, wine and spirits brands. She also spent almost a decade at E. & J. Gallo Winery working in both the southeast region in distributor management as well as inside their partner distributor, Johnson Brothers Liquor Company.

Savannah Pender

## Industry Services & Suppliers

P&L Specialties / Tom Beard Company / Revolution Equipment Sales announced new representation in the Texas Wine Market, Savannah Pender of consulting group sow Texas. Pender connected with wine while studying Bioenvironmental sciences at Texas A&M University. She learned wine-making through her cellar work experience in numerous wineries across Texas and through UC Davis certificate program. She launched sow Texas Winery Consulting in 2021 and covers 9 states from Texas to Kentucky and over to New Mexico.

The Boswell Company announced that Janice Boswell has risen to the role of president.  Janice assumes the role previously held by her father Jim who founded the company in 1975 in San Rafael, Calif. and is retiring. Boswell was raised in San Anselmo, Calif. and wines produced by clients were a regular part of family meals. She attended Fordham University in the Bronx, New York graduating in 2014 with a degree in environmental studies.  After graduation, Janice moved to Santa Rosa, Calif. and lived among the vines at Viluko Vineyards. Janice furthered her skill set working at wineries around the world including Hudson Vineyards in Carneros, Ridge Vineyards in Dry Creek Valley, Mulderbosch Vineyards in South Africa and with her cousins at Domaine Dujac in Burgundy.

# Associations & Education

Erin Larkin

Robert Parker Wine Advocate (RPWA) has reinforced its wine reviewing team and international coverage by adding Erin Larkin to the position of wine reviewer for Australia. An independent wine writer, judge and presenter based in Perth, Western Australia, Larkin's extensive experience in Australian wines includes tastings for Halliday Wine Companion and magazine, a weekly wine column since 2014 and a frequent judge at wine shows in Australia. She has also recently qualified as a Barossa Wine School Specialist Educator and has been a judge for the Australian Wine List of the Year and the China Wine List of the Year Awards, both for the last eight years.

Paul Turale

Wine Australia named its new general manager of marketing, Paul Turale. Turale joins Wine Australia from leading food packaging business Detmold Group, where he was general manager of business development, specialized products. He has more than 20 years' experience in the wine sector and has held leadership positions at multi-national listed corporate wine businesses and medium to large private wine companies, including Casella Family Brands/Peter Lehmann Wines; Orlando Wines/ Jacob's Creek and Pernod Ricard. **WBM**

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| **Amcor** | *amcor.com* | 43 |
| **American Society for Enology and Viticulture** | *asev.org* | 51 |
| **Amorim Cork America** | *amorimcorkamerica.com* | 5 |
| **Auction of Washington Wines** | *auctionofwawines.org* | 79 |
| **Barrels Unlimited** | *barrelsunlimited.com* | 35 |
| **BevZero Equipment (PolarClad)** | *www.bevzero.com* | 41 |
| **Boswell Co.** | *boswellcompany.com* | 53 |
| **Brick Packaging, A Saxco Division** | *brickpackaging.com* | 61 |
| **Brock University** | *brocku.ca* | 65 |
| **Carlsen & Associates** | *carlsenassociates.com* | 53 |
| **Castoro Bottling Co.** | *castorobottling.com* | 68 |
| **Coastal Viticultural Consultants, Inc.** | *coastalvit.com* | 54 |
| **Cork Supply USA** | *corksupply.com* | 9 |
| **Corteva Agriscience** | *corteva.us* | 47 |
| **Diam Closures USA** | *g3enterprises.com/closures* | 83 |
| **Duarte Nursery** | *duartenursery.com* | 45 |
| **ETS Laboratories** | *etslabs.com* | 84 |
| **Enartis USA** | *enartis.com/en-us/* | 18 |
| **Erbslöh Geisenheim GmbH** | *erbsloeh.com/en* | 27 |
| **Euro-Machines** | *euromachinesusa.com* | 37 |
| **Free Flow Wines** | *freeflowwines.com* | 32 |
| **Global Package** | *globalpackage.net* | 75 |
| **Gusmer Enterprises** | *gusmerwine.com* | 18, 25,42 |
| **Hinman & Carmichael, LLP** | *beveragelaw.com* | 27 |
| **Iron Heart Canning** | *ironheartcanning.com* | 25 |
| **Kennedy/Jenks Consultants, Inc.** | *kennedyjenks.com* | 69 |
| **La Garde (a division of SML Stainless Steel Group)** | *lagardeinox.com* | 7 |
| **Land Logistics** | *landlogistics.com* | 77 |

| Company | web address | page |
|---|---|---|
| **MA Silva USA** | *masilva.com* | 15 |
| **Maverick Enterprises** | *maverickcaps.com* | 19 |
| **Metis** | *metisnw.com* | 68 |
| **MUST Machining & Fabrication** | *mustfabricate.com* | 73 |
| **Napa Thrives** | *napagreen.org* | 81 |
| **Olavin Tank** | *olavin.com* | 54 |
| **Onguard** | *onguardgroup.com* | 72 |
| **Parsec srl** | *parsecsrl.srl* | 29 |
| **Portocork America** | *portocork.com* | 3 |
| **Prospero Equipment** | *prosperoequipment.com* | 39 |
| **Rutherford Equipment Rental** | *rutherfordrental.com* | 51 |
| **Saverglass, Inc.** | *saverglass.com* | 2 |
| **Saxco International** | *saxco.com* | 67 |
| **Scott Laboratories** | *scottlab.com* | 23 |
| **Seguin Moreau Napa Cooperage** | *seguinmoreaunapa.com* | 22 |
| **Shelco Filters** | *shelco.com* | 69 |
| **Sonoma Cast Stone** | *concretewinetanks.com* | 33 |
| **Spec Trellising** | *spectrellising.com* | 56 |
| **Speidel Tank und Behälterbau GmbH** | *speidel-behaelter.de* | 59 |
| **StaVin** | *www.stavin.com* | 21 |
| **Thermo Fisher Scientific** | *thermofisher.com/water* | 17 |
| **Tonnellerie de Mercurey USA** | *tonnellerie-de-mercurey.com* | 42 |
| **TricorBraun Wine Pak** | *tricorbraunwinepak.com* | 31 |
| **Verallia USA** | *us.verallia.com* | 11 |
| **Waterloo Container Co.** | *waterloocontainer.com* | 69 |
| **West Coast Bottles** | *westcoastbottles.com* | 26 |
| **WineDirect** | *winedirect.com* | 71 |
| **Wine-Searcher, Ltd.** | *wine-searcher.com* | 77 |
| **Wonderful Nurseries** | *wonderfulnurseries.com* | 49 |
| **World Cooperage** | *worldcooperage.com* | 57 |
| **Zenport Industries** | *zenportindustries.com* | 46 |

PRIVATE

# BARREL AUCTION

AUCTION OF WASHINGTON WINES

## AUGUST 8, 2022

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Betz Family Winery
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Canvasback Winery
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Leonetti Cellar
Matthews Winery
Mullan Road Cellars
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Novelty Hill Winery
Owen Roe
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Seven Hills
Sleight of Hand Cellars
Two Vintners
Walla Walla Vintners
Woodward Canyon

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# Celebrity

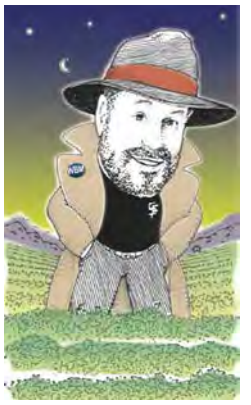


ILLUSTRATION BY BOB JOHNSON

**J.J. AUDIT WORKSHEET WAS** trying to convince Jake Lorenzo to start a celebrity wine label. "You've got the experience, Mr. Lorenzo, both with the winemaking end and handling tender egos of rich people. I've a list of more than a dozen wealthy clients, exhibiting a passion to get into the wine business with an experienced wine professional such as yourself. Add in the private-eye dynamics and this could be a marketer's dream."

Chuy slid a shot of the new Fuenteseca seven-year Reserva across the table to me. We clinked glasses and sipped the nectar. "You sure you don't want to try this?" I asked Worksheet. "It's one of the best tequilas you'll ever taste."

"Never drink when I am on the job," he said. "Drinking is for after the contracts are signed."

Jake Lorenzo thought, "If I waited for signed contracts to drink, I'd be a teetotaler." I took another sip of the Fuenteseca, savoring the earthy, roasted agave flavors. "I don't think your offer is for me, but I am curious. If I agreed to this, what would my role be?"

Worksheet leaned back in his chair. "It's pretty straightforward, really. You would locate the vineyard, contract for the grapes, supervise the vineyard, arrange picking and delivery of the grapes, and develop fermentation and oak aging regimens. The celebrity would come in to taste blends under your direction, have access to bring selected guests during winemaking at harvest time, and they would use their name and social platform presence to help market the product.

"We will set up the contract to accommodate the degree of involvement you are comfortable with. We can set it up where you produce the wine, sell it to us and we would market under the brand name of our celebrity. A celebrity could lend his name to a one-time special wine, where you create the wine and pay royalties to the celebrity for use of his name and image. If you prefer, we could establish a partnership with you and the celebrity to create a special brand, relying on your expertise, friendship with the client and their love of the particular variety." Worksheet held out his hands, palms up. "It would be completely up to you."

This detective thought he knew the answer, but I still had to ask the question: "Why do celebrities want to get into the wine business and why would any of them want to partner with Jake Lorenzo?"

He gave a deprecating smirk. "As to why Jake Lorenzo, who knows? Perhaps, being a private eye provides a sense of danger they find titillating. You are a writer, and good writing is always respected by smart celebrities. Financially, these celebrities have amassed copious amounts of wealth. To them, the amounts required for these types of ventures are negligible and offer many tax incentives. Some of them even find the whole wine business romantic, and everyone else is doing it. They don't want to be left behind." We talked for another hour or so, but the offer didn't float my boat. Mr. Worksheet was gracious, packed his briefcase and pleasantly said goodbye.

Celebrities in the wine business are not a recent phenomenon. Back in ancient times, successful generals, politicians and poets owned vineyards and made wine for themselves and their friends. Even the Pope had his own vineyards and wines. Today, musicians as diverse as Sting, The Chicks, Snoop Dog and Jon Bon Jovi all push wine brands. The list of athletes is even more eclectic: Wayne Gretzky, Mario Andretti, Jeff Gordon, Tom Seaver and Charles Woodson. Most recently, basketball players have leaped into the fermenter of celeb winemaking. Joe Harden, Yao Ming, C.J. McCollum and Dwyane Wade, among others, have started their own wine ventures.

This detective has no respect for rich stars who only look at our industry to generate even more income for their multimillion-dollar portfolios, without acknowledging those who have come before them. If celebrities refuse to recognize the hard-working winemakers who built something out of nothing—people who bet everything they had on a dream that no one else could envision—then they shouldn't profit off those dreams. Those early winemakers had to figure things out, as they went, because no one knew what they were doing and there was little information available. They borrowed money from banks, designed their own labels, struggled through bad corks and three-tiered distribution systems, but they survived and built a thriving business that provided a soul-satisfying lifestyle.

As wine became popular, many successful people—stuck in big cities, working long hours and earning tremendous amounts of money—sought refuge in the wine business and its slower pace of life. Those successful businesspeople thrived in the wine business, full of gratitude for providing what they recognized as a far better life. Many felt a need to give back. They started charities and funded them by hosting wine auctions and special events. To create more interest and excitement, they invited celebrities to their affairs, and those stars got to see for themselves the attraction and satisfaction available from living a wine lifestyle.

Athletes have a saying that this detective has heard for years. They say, "He plays the game the right way. He respects the game." To advance the industry and maintain the life it provides, celebrities must sincerely appreciate and respect the contributions of cellar rats and vineyard workers. They are obligated to learn the history and respect those who fought to create the business, not just those who succeeded but those who failed as well.

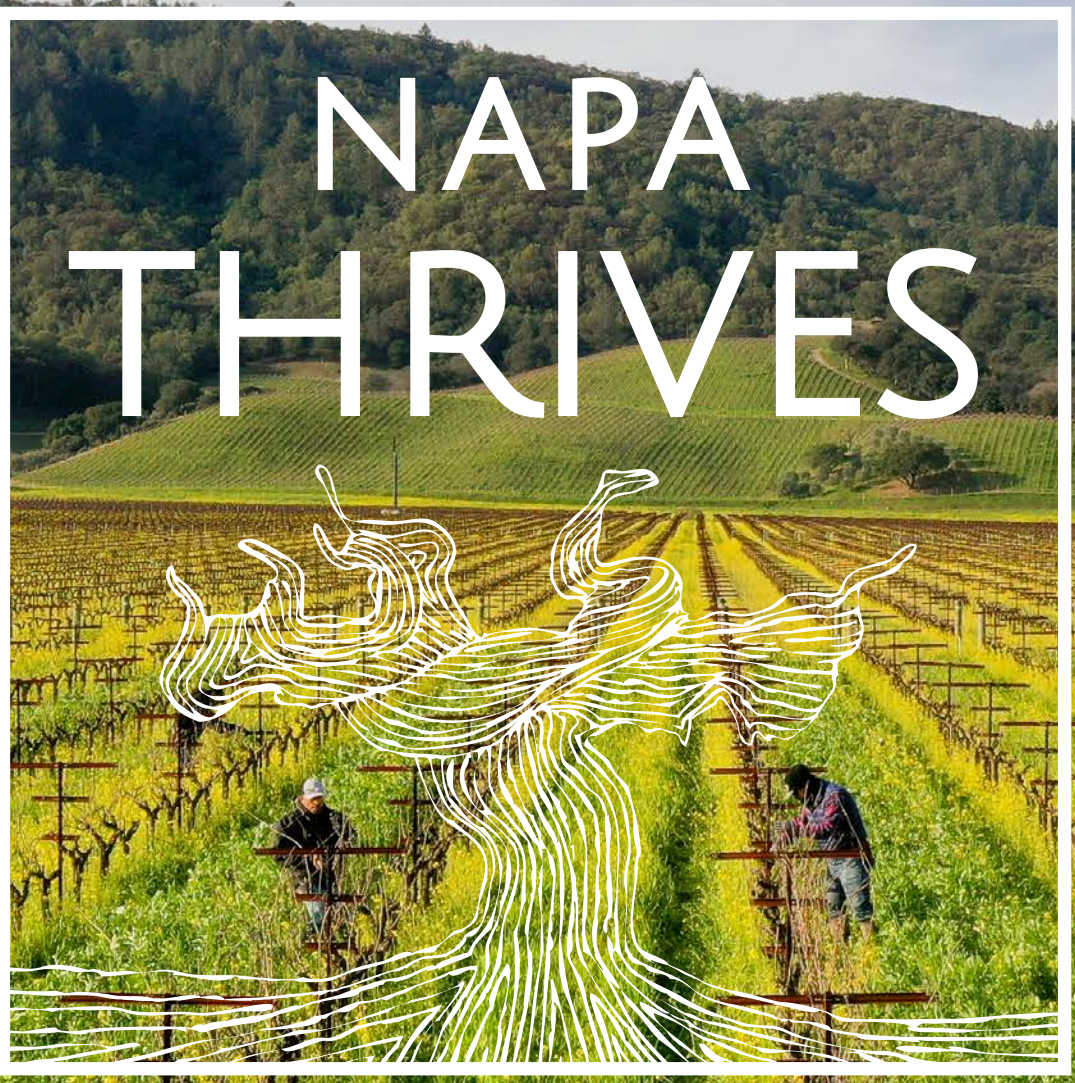
*"To advance the industry and maintain the life it provides, celebrities must sincerely appreciate and respect the contributions of cellar rats and vineyard workers."*

Jake Lorenzo believes that some celebrities are honestly captivated by the magic of wine and the life it provides. It resonates with something in their souls. I welcome them into the business, but celebrities must be careful with their influence. Their popularity, social media presence and publicity machines can easily crush small, long-time producers who are making truly exceptional wines, and those special producers are the backbone of the industry. They need to respect the game.

No matter how much you love the business, no matter how much money you invest, nothing feeds the soul like starting from nothing and seeing your dreams turn into reality, not just for yourself but for others. Jake Lorenzo had the good fortune to make wine for the love of it. Money, fame and success were never part of the equation. Satisfaction and a sense of accomplishment were reward enough, and it was fun, so much fun. **WBM**

If not here, where?
If not now, when?

# NAPA THRIVES



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NAPA GREEN

# Joe Bechard, winemaker and partner, Chateau Tumbleweed, Clarkdale, AZ


"Working in a wine "frontier" can get lonely sometimes. Seeking advice, finding information, making smart purchases, forming relationships with suppliers: everything is more difficult from a distance. Wine Business Monthly is one of the best resources I have to keep up on new research, products, equipment, market trends and to stay connected to the greater industry."

**ANNUAL CASE PRODUCTION:** Currently 5,000 cases for Chateau Tumbleweed (growing annually) and 1,500 cases for our partners at D.A. Ranch Vineyards.

**PLANTED ACRES:** We source fruit from 10 to 12 vineyards every year. Mostly from the Willcox AVA in southeastern AZ, but also from here in the Verde Valley AVA when we can. We need to get to work on a vineyard ASAP – fruit is scarce in Arizona. We're very lucky to have some great relationships.

**CAREER BACKGROUND:** I fell in love with Oregon Pinot and wine more broadly while in journalism school at the University of Oregon, but never planned to work in the business. When I moved to Sedona for my first newspaper job in 2004, I discovered that Arizona had a tiny wine industry (fewer than 10 bonded wineries at the time). I left the newspaper before the 2005 harvest and became a cellar rat. I spent the next 10 years working for several wineries in the Verde Valley (most notably Page Springs Cellars and Merkin Vineyards/Four-Eight Wineworks) before opening Chateau Tumbleweed in 2015 with my wife and two of our best industry friends. We are also partners with the Petznick family, owners of D.A. Ranch Vineyard. (There are now more than 100 bonded wineries in our state.)

**WHAT HAS BEEN YOUR BIGGEST PROFESSIONAL CHALLENGE?** Operating a small winery with fairly shallow pockets in an upstart wine region brings new challenges every day! It's humbling. Luckily wine teaches patience, perseverance and gratitude for the little things. We're fortunate that we get to be ourselves and have a good time while also making wines we're immensely proud of.

**VARIETALS THAT YOUR WINERY IS KNOWN FOR:** We've had more than 30 different varietals pass through our doors. The experimentation and discovery is a huge part of what draws me to Arizona wine. We make several larger blends and a wide range of vineyard and varietally designated wines. Picpoul Blanc, Graciano, Cabernet Franc, Sangiovese and Mourvedre are probably some of our favorites right now.


*Photo Courtesy of: Diam Bouchage / ASL Suberaie Varoise / JC Milhet / Serpe*

# Diam Bouchage Continues Environmental Advancements

Diam Bouchage, a French cork manufacturer and global leader in technological cork solutions, updates its commitment to the environment and measures its progress in meeting its goals.

The company established a comprehensive environmental policy that was launched in 2009. The policy was built upon its innovative Quality & Food Safety Management program that has been in place for many years. As part of this effort, Diam Bouchage committed to control its consumption of energy, reduce its carbon footprint, increase its recycling programs and develop more environmentally friendly products focused on eco-design. Here are some of the highlights of this successful effort:

*Diam Bouchage has committed to reducing the company's total carbon footprint by 15% by 2025.*

- Since cork is a renewable resource that contributes to $CO_2$ sequestration, **Diam Bouchage's use of cork contributes to the sequestration of more than 300,000 tons of $CO_2$ every year.**
- **All of Diam Bouchage's closures are FSC certified** and all of the company's facilities have completed accreditation and received FSC certification.
- Diam Bouchage offers its **Origine by Diam closures which are produced by using cork flour and natural bio-based materials like beeswax** instead of petroleum-based materials.
- Since 2020, the **Diam Bouchage production facility in San Vincente de Alcantara, Spain, has been solely reliant on green electricity.**
- Diam Bouchage contributes to reforesting and sustaining French cork oak forests. Through these efforts, **more than 200 tons of cork are carefully harvested annually in France** for use by local winegrowers in the cork producing regions of Pyrenees-Orientales, Maures Massif and Corsica.
- **Origine by Diam has a prestigious 4-star accreditation, the highest level of certification, and validation that 80% of the carbon contained in each closure is only of organic origin.**
- In fact, the company has developed innovative processes and procedures from the cork oak forests all the way through production, that have resulted in **Origine by Diam closures having a manufacturing carbon footprint of only 5%–10%** based on the product line, compared to traditional cork closures.
- By powering 100% of the facility with renewable energy sources, **the company has cut 11,000 tons of $CO_2$ and reduced the company's carbon footprint at that facility by 16%.**
- **Diam Bouchage powers its production facilities through heat generation instead of using fossil fuels** by recycling cork dust, which is produced during the production process, into a fuel source.

*Diam Bouchage has committed to reducing its direct emissions from energy and processing by 55% by 2025.*

These and other environmental achievements make a difference for all of us which is why Diam Bouchage is moving towards ISO 14001 certification at all its production facilities before 2023. Diam Bouchage is proud of its environmental success as a company and the commitment of its employees to lead with positive action in meeting the company's environmental goals.

To learn more, visit *Diam-closures.com* or contact **G3 Enterprises**, their exclusive distributor in the United States, Canada and Mexico, at *G3enterprises.com*.


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