



# Building Better Barrels

As modern American winemaking veers away from heavy oak influence, it's become more important to understand the available options for aging wine

By Stacy Briscoe

Within the last 10 years, modern winemaking has veered away from heavy oak influence. Perhaps this is because we, as a New World wine region, are only now beginning to embrace tradition, practicing Old World winemaking techniques. Or maybe we're finally beginning to understand our definition of *terroir*, producing fruit, and thus wines, suitable to climate and soil. Or perhaps it's America's new-found foodie culture driving this trend, as consumers begin to understand wine as an ingredient to a well-rounded meal, specifically searching for wines that complement and don't overpower the palate.

"It is the evolution of the wine consumer," said Ron Celaya, sales representative for Demptos USA in Napa, Calif., who said, for the

## KEY POINTS

**Less obvious toast and oak influence are more popular as consumer preferences evolve.**

**Forest-specific barrels provide consistency in structure, aromas and flavors.**

**Winemakers turn to alternative woods for additional, low-impact barrel solutions.**

**Coopers have developed technology to produce reliable, consistent barrels.**

most part, his winemaking clients are no longer looking for the phenolic, smoky aromas that present themselves as bacon, burnt coffee and black pepper. Instead, they're looking for what Celaya refers to as "less obvious" and "more complex" aromas, including white chocolate, potpourri and baking spice.

"Those (harsher) flavors don't lend themselves well to food pairing," Celaya said, adding that he's noticed the American palate has been evolving for a while: Consumers are looking for wine that complements rather than challenges what's created in the kitchen.

Elizabeth Van Emst, general manager at Cooperages 1912 Napa, had a similar observation, stating that, especially in the super-premium wine categories and direct-to-consumer programs, requests from her winemaking clients for lighter toasts have become much more prevalent. "Barrel demand is ultimately driven by the end consumer's tastes. Balanced wines with complexity and length are what wine drinkers are demanding," she said.

Celaya has also observed that American viticulture, in general, has become more balanced. "We're getting grapes that are fresher, more vibrant with acidity. You certainly don't want to ruin what the viticultural team has done by using strongly toasted barrels," he said.

So, the "hype" of heavy or heavy-plus toast — which results in an abundance of char and caramelization in the wood — is long gone,

according to Celaya and Van Emst. A step away from this aggressive style is a medium-long toast, a process that toasts the barrel over a smaller fire for a longer time, cooking the wood slowly yet deeply as the cooper turns the barrel more frequently to ensure harsh aromas aren't absorbed. More Burgundian in style, Celaya said, this level of toast provides a smoother tannin structure, more spice than smoke notes, a midpalate softness, and a lengthy finish during trials with winemakers. He finds that his clients working with Cabernet are among the most likely to request this level of toast, but that a few working with Pinot Noir will also use a certain percentage of medium toast for a "pop of savory elements, a midpalate lift and velvety texture."

Paolo Bouchard, business development manager for Bouchard Cooperages in Napa, said many of his clients are now requesting even less toast impact: light-long toast, which he explains as the same process as medium long, but with the toast taking place on an even smaller fire. "We're seeing more and more requests for light-long toasts on delicate reds or aromatic white varietals," Bouchard said.

## Location, location, location

The flavor profile and textural influence of a barrel starts in the forest. Just as *terroir* influences grapevines and the resulting wines, so do different forests impart specific

characteristics into the trees and, thus, the barrels.

Eric Mercier, president of Premier Wine Cask in Napa, which is the exclusive North American representative for French cooperage Tonnellerie Dargaud & Jaeglé (D&J), said that he's seen a decrease in barrel suppliers offering forest-specific oak barrels to their clients. Instead, suppliers are focusing on grain tightness alone. But, according to Mercier, providing clients with forest-specific barrels is one of the few ways to deliver consistency year after year. "A tree grows for about 200 years, pumping minerals from the soil, being influenced by the weather," Mercier said. "So the 'same' tree growing in two different environments will offer vastly different flavors."

Bouchard said cooperages began steering away from distinguishing forest origin in barrels and moved toward grain-tightness specification after several scandals involving cooperages that promoted forest specificity, but in fact were making forest mixes or grain-tightness mixes. "It is possible to find tight grain in most forests, although some forests contain significantly higher percentages of tight grain," he said.

Bouchard added it's easier for boutique cooperages that have a longstanding reputation in the industry to focus more on forest origins and barrel quality. He cited Tonnellerie Billon, which produces 12,000 barrels, and Tonnellerie Damy, which makes 22,000 barrels annually, (both of which are sold by Bouchard Cooperages) among those cooperages that have continuously and reliably branded their barrels with forest-specific names. "It's easier to work with forest-origin barrels when you are not making a gargantuan amount of barrels, just like it is easier to focus on quality when making smaller quantities," Bouchard said.

Forest origin can trump grain tightness, Bouchard said. "Some forests are more impactful, such as Limousin or Châtillon. Other forests are more gentle, elegant and lower impact such as Tronçais, Jura or Jupilles," he said. He noted, too, that there's been a resurgence in

cooperages working with specific forests and branding them that way, including Tonnellerie de Mercurey, Tonnellerie Rousseau and Tonnellerie Quintessence.

Bouchard also stressed that regional nuances affect the staves during the air-drying process. He explained that while the wood dries at the mill, a process typically lasting two to three years, the staves are exposed to excessive snow and rain that ultimately help wash the tannin and organoleptic material. "But the air-drying process that takes place in Cognac and Bordeaux is different than the air-drying process that takes place in Burgundy or other countries," Bouchard said.

He cited Hungary as an example: With no bordering oceans and lack of maritime climate, Hungarian wood is aged at minimum for three years before it's coopered because the area receives less precipitation, taking more time for the wood to be considered ready from "a coopering perspective," he said. "And if you already have significantly less tannin and organoleptic material in the wood, as a result when you toast, you are toasting less matter so the barrel is less impactful," Bouchard said. Therefore, some cooperages will offer barrels made with wood aged three to five years, which will have a more neutral effect on the wine.

### Comparative bending methods

How a tree's natural nuances expose themselves in the barrel and influence aging wine has to do, in part, with how staves are bent — either by fire, steam or water. "The bending method alters the distribution of inherent flavor components, helping emphasize some flavors and diminish others," said Ed Schulz, international sales manager for Premier Wine Cask.

The process of fire-bending involves heating unbent staves over a fire pot, softening the fibers and allowing the staves to be bent into the proper shapes needed to create a wine barrel. Bouchard calls this method "the most popular and most traditional," but, "when you fire-bend, you break more staves and the process is

## WINEMAKERS FIND ALTERNATIVE, LOW-IMPACT SOLUTIONS

**A**nother tactic for deviating away from oak influence is deviating away from oak barrels altogether.

Tim Bell, winemaker for Dry Creek Vineyard in Healdsburg, Calif., uses acacia wood for the Dry Creek Valley Sauvignon Blanc blend. "That wine relies on some unique clones of Sauvignon Blanc (Musqué and Gris clones) as well as limited barrel fermentation (about 15%)," Bell said in an email to *Wines & Vines*. He said he turned to acacia because he didn't like the toastiness he was getting from his French oak barrels. "It seemed to diminish or mask the intensity of the beautiful aromas we get out of our Sauvignon Blanc," Bell said.

In the past, Bell had experimented with neutral, previously used oak barrels. But because the winery produces such a small amount of Chardonnay, there wasn't much new oak being used before the barrels were moved to the Sauvignon Blanc program. After tasting trial wines aged in acacia, Bell found it to be the low-impact wood solution he was looking for.

Bell uses French-coopered acacia (black locust) barrels with a light toast. "We get almost no wood flavor, so it lets the aromatics of the Sauvignon Blanc show really well," Bell said. "It also adds a subtle richness, an almost waxy character that gives the wine a little more viscosity."

Bell also mentioned he's using a limited amount (about 3%) of chestnut wood on the Sauvignon Blanc. Unlike acacia, which adds a textural quality, he said the chestnut provides additional flavor without a lot of toast. "It gives a vanilla cream character that I like as a very limited flavor enhancer in our Sauvignon Blanc — sort of like having lemon curds with cream."

Winemaker Sterling Kragten of Cass Vineyard & Winery in Paso Robles, Calif., said he uses acacia barrels in the Viognier portion of his barrel-fermented and aged white Rhone blend, Rockin' One — a blend of Viognier, Marsanne and Roussanne.

"The main advantage I have found using acacia barrels is how it will lift the aromatics of the wine and give it some structure without overpowering the fruit character or imparting a lot of tannin," Kragten said. He said Acacia complements the Viognier's natural floral character, while simultaneously bringing the fruit forward without any heaviness of oak.

While Kragten experimented with fermenting and aging the Roussanne and Marsanne portions of the blend in acacia, he wasn't as satisfied with the results. Instead, he's chosen to work with Russian oak in the Rockin' One for aging his Roussanne. Kragten said the Russian oak, which is the same genus and species as some of the French trees, comes from a cooler climate, providing a tighter grain, and thus is less impactful.

"Consumers are now looking for more fruit-driven wines, and using these alternative woods has helped me fulfill that," Kragten said.

more time-consuming and requires greater expertise and *savoir faire* by the cooper," he said.

Bouchard explained that the fire-bending process requires a cooper to constantly listen to the



## CRAFTING A WINE BARREL FOR THE CALIFORNIAN, U.S. WINE INDUSTRY

A Swiss winemaker and French cooperage have embarked on a project to create a truly American wine barrel to best match the *terroir* and winemaking styles of the U.S. industry.

Tonnellerie Radoux USA hired winemaker Jean Hoefliger to help conduct a long-term project to develop a line of barrels specifically for California and other major winemaking regions in the United States.

Radoux saw an opportunity to develop barrels to meet the specific needs of American winemakers, and Hoefliger said he was happy to join a project intended to deliver better barrels to his colleagues in the cellar.

“We have to adapt our barrel to California viticulture and climate and to California wine,” Hoefliger said in an interview about the project with Radoux USA general manager Louis Zandvliet at Radoux’s office and cooperage in Santa Rosa, Calif.

The trial began in earnest in 2017 with about 30 winemakers and 100 barrels all filled with Cabernet Sauvignon. In 2018, the trial expanded to 50 winemakers with about three times the number of barrels and more varietals such as Pinot Noir, Chardonnay and Sauvignon Blanc. At the onset, the trial was focused just on French oak, but Zandvliet said a few winemakers are also using the cooperage’s American oak barrels.

He said he wanted to work with Hoefliger because of his experience making wine in regions around the world and for his willingness to explore new ideas. The project also comes during a shift in consumer and winemaker preferences. “What the market is doing right now is very interesting,” Zandvliet said. “We’re going away from those big ‘90s and early 2000s wines, super oaky, super clunky. We’re going to something that is more subtle.”

The trial is evaluating each step of the production process to see where it could be changed or improved to meet certain characteristics that best match U.S. wines. Zandvliet said some traditional steps in barrel production, done for cost efficiencies, could be changed if it were to provide the right type of impact for a certain wine and winemaker.

What some of those new techniques and toasts could entail remain to be seen, as Zandvliet and Hoefliger were hesitant to discuss specifics. Zandvliet said he’s planning to introduce the new brand as well as other findings in 2019.

In general, Hoefliger said French oak barrels built for France’s best wines such as those from Bordeaux are meant to support more acidity, freshness and less ripe fruit characteristics. No one would likely be surprised by this assessment, but what he and Radoux are aiming to do is further differentiate barrels meant for the American and European markets by working with winemakers in the trial to find more ways to support specific elements of their style.

They are hoping then to not just make a barrel ideally suited for California Cabernet Sauvignon but a line of barrels that could emphasize the differences between Cabs grown and vinified in Napa Valley, Paso Robles, Sonoma County and elsewhere.

“We have to be able to produce a barrel that takes that into consideration in the attention to detail and the understanding how to customize a barrel to the specific needs of any given winemaker with any given grapes is really, really important,” Hoefliger said.

— Andrew Adams



Winemaker Jean Hoefliger, foreground, at a tasting as part of the trial by Radoux USA.

wood, touch the barrel and tend to the fire to effectively manipulate the staves. “There is much more touch, feeling and attentiveness ... more control,” he said, “But, yes, a greater risk of nervy staves breaking.”

Mercier said D&J employs fire-bending as the primary treatment at its artisan cooperage in Moras-en-Valloire, France, but water-bending as the primary treatment at the main cooperage in Romanèche-Thorins. Water-bending, Mercier explained, involves submerging staves in water for about 20 to 25 minutes, essentially cleansing wood of tannins before bending.

While Schulz said he can’t say for certain whether one method is more “palatable” than the other, Mercier is of the opinion that the process of removing some of the harsher tannins from the oak staves with water soaking seems to add a weight to the midpalate not noticeable in fire-bent barrels.

Cooperages 1912 Napa’s Van Emst said she believes there is some truth to the claim that water-bending creates a more minimal oak influence due to the tannin extraction during the soaking process. She noted that, when combined with a light toasting regime, it’s an ideal option for those looking for a softer, rounder mouthfeel and less oaky characteristics.

Steam-bending is a less aggressive stave-bending method that involves quick exposure to extremely hot steam, opening the pores of the staves to eliminate excess tannin. But, according to Bouchard, because of those open pores, toasting tends to go deeper inside the wood. “If you take a fire-bent and steam-bent barrel and compare them side by side, the steam-bent barrel usually smells and tastes more neutral because it has been ‘neutralized’ one last time before toasting,” he said. “However, if you cut a cross section of the stave ... the toast typically has gone a little bit deeper” in the steam-bent barrel.

### Oak-specific aroma technology

At Cooperages 1912 Napa, coopers are utilizing infrared technology instead of fire-toasting for the company’s World Cooperage line, Van Emst said. She said that using infrared waves to toast the barrels to the desired temperatures enhances the wood’s aromas and flavors without adding smoke attributes. Van Emst said the infrared-toasted barrel line has proven hugely popular for the cooperage.

The technology also allows the coopers to create specific, consistent and repeatable barrels year after year: The “reflection” barrel is designed specifically to “reflect” fruit flavors back into the wine; the “dimension” barrel uses a wave-like surface that provides a slightly higher impact, yet remains subtle in the aromas and textures imparted on the aging wine. This, Van Emst said, plays into the current trend of winemakers demanding both complexity and subtlety in barrels, even when seeking higher impact.

“Our R&D team closely partner with wine-makers to continually push our collective knowledge of oak science and develop new flavor, aroma and texture combinations that will meet each winemaker’s specific goals,” Van Emst said. “So we have an entire recipe library that continues to grow, giving winemakers the options they need to find the perfect match of barrel to wine and meet these market demands.”

Chris Hansen, sales manager for Seguin Moreau Napa Cooperage in Napa, said the trend he’s seeing is more winemakers interested in his company’s research into wood chemistry and its ICÔNE series of barrels.

Hansen said that Seguin Moreau’s research and development team conducts a chemical analysis of individual logs at the stave mills to help understand the wood’s potential before production. The analysis, he said, isn’t necessarily forest-specific, but is more about the grain sizes and chemical makeup of each individual log. “When you cut down a tree, the grains are different at different levels of the tree,” Hansen said.

While he wouldn’t divulge the exact technology the R&D team utilizes, Hansen explained that focusing on the wood at the molecular level has allowed them to find the specific correlation between chemical compounds, such as tannins and phenolics,

and a barrel’s resulting aroma and flavor impact. This information then helps them organize specific, reproducible results in their oak barrels.

This means barrels are made with the specificity and consistency winemakers are looking for, Hansen said. Seguin Moreau’s current barrel selection under the ICÔNE series includes ICÔNE Blanc, intended for high-end white wines; ICÔNE Finesse, for high-end delicate red wines; ICÔNE Elegance, for red wines with high concentration of polyphenols; and ICÔNE Low Aroma and Elevation, for high-concentration red wines.

But, Hansen said, there are often crosses between the recommended barrels. For example, while ICÔNE Finesse is technically more suitable for Pinot Noir or Gamay, he said he has clients working with Cabernet Sauvignon who use this barrel, looking for a lower, more subtle flavor profile. A few Russian River Pinot Noir producers opt for ICÔNE Elegance in an effort to subdue the fruit, which tends to be quite ripe.

Seguin Moreau has also expanded the toasting range within the ICÔNE series in the past few years, according to Hansen. He said that while the company has its suggested toast levels for each style, usually medium or medium-plus, the cooperage toasts usually



ICÔNE Blanc French oak barrel by Seguin Moreau, made specifically for white wine aging.

have a strong vanilla and toasty impact. “We developed what we call open toasting where we do not use a lid to trap heat and smoke inside the barrel during the final toasting that reduces the amount of vanillin created and toasty/smoky aromas,” Hansen said. The company refers to these toast levels as long open or medium extra-long open. 🍷

*We patiently craft  
limited production  
barrels to respect the fruit  
and reflect each wine’s  
unique beauty.*



21200 Beaune - Côte d’Or - France

[www.tonnellerie-tremeaux.fr](http://www.tonnellerie-tremeaux.fr)

