It’s a truism that wine industry work requires flexibility. In fact, success demands skill at managing the unexpected. Producers regularly tackle anomalies in the weather, surges in vineyard pest populations, stuck fermentations and Brettanomyces infections – not to mention dips in the economy and shifting market demands. To perform in such an unstable context, wineries need as much consistency as they can get from their suppliers.

Some goods don’t pose a significant challenge. Capsules and labels are perfectly reproducible at almost any scale. But other products are inherently variable. Consider barrels: Oak is a natural material, and no two pieces of wood could ever be exactly the same. That may be another truism, but it’s not what winemakers want to hear when they’re spending thousands of dollars on casks to make wine that is supposed to be uniform from bottle to bottle, and case to case. Consequently, cooperages are working harder than ever to deliver consistency – even as their own field faces significant flux.

**BE*TER HANDLING**

“We build as much control as we can into the entire process,” said Jason Stout, the international sales director for Cooperages 1912, representing World Cooperage. “Grain selection and proper seasoning are obviously very important elements. But the impact of toasting on the final flavors of the wood dwarfs everything else. For example, take two barrels made in the same way from wood sourced and seasoned in the same way. If I toast one for 10 minutes and the other for an hour, (the wines) are not going to taste anything like each other.”

For that reason, World Cooperage has developed a complex system of barrel toasting profiles. Winery clients can choose from among 120 finishing options, and each one is reproduced by computer-guided toasting times and temperatures.

“In developing these profiles,” said Stout, “we have really come to understand the relationship between toasting techniques – represented graphically by a curve of temperature and time – and the flavors they’re creating. We’ve been manipulating these curves recently, and dialing in specific characters that people want while avoiding those things they don’t.”

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**AT A GLANCE**

- Because oak is a natural material, no two pieces of wood are identical.
- Cooperages are working to provide consistency from barrel to barrel.
- Grain tightness has become increasingly important to winemakers in their barrel selections.
- While some wineries still seek barrels from specific forests, that is becoming less common.
Of course, the toasting process does not exist in a vacuum. Results very much depend on the makeup of the specific sections of oak. So analyzing and cataloging the chemical composition of stave wood has been the focus of work by other leading coopers.

“We’ve developed a near-infrared system to measure the extractable tannins in every stave,” said Martin McCarthy, sales manager for Radoux USA. “With this information, we can adjust the tannic potential of each barrel – which has a real impact on the way the wood accepts toasting. A high-tannin barrel with a medium-plus toast will not influence a wine in the same way as a low-tannin barrel with the same toast level.

“There are correlations between grain tightness and tannin levels, but the outliers comprise about 10% of staves. By using our system, OakScan, to identify any anomalies, we can redirect those staves to an appropriate category. In the end, our clients end up with the wine they expected.”

World Cooperage’s barrel profiling system lets winery clients choose from more than 100 finishing options.

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Seguin Moreau has invested significant time and money over the past decade into developing its own system of wood chemistry analysis. Called Icône, the first iteration was released earlier this year – a French oak barrel designed specifically for high-end red wines.

“We’ve learned that specific chemical compositions in wood lead to specific results in wine,” said François Peltereau-Villeneuve, the company’s president and CEO. “After four or five years of serious research with high-end wineries, we now analyze the wood from every tree in order to assemble chemically homogenous lots. We can almost eliminate barrel variation.” He added, “The Icône concept is only a small percentage of what we do right now. But this is the future of our work – better results and reproducibility.”

**INTEGRATED SUPPLY**

Applied scientific research and technology certainly have advanced the way oak is processed by cooperages. But every major wine barrel producer agrees that the crux of consistency is found farther up the supply chain.

“Sourcing is the key to our industry now, and it’s getting a lot more difficult,” said Georges Milcan, commercial director for Groupe Charlois, owner of Saury and several other cooperages. “Back in the early 1990s, the overall business for French oak barrels was about 350,000 units. Then the wine industry expanded in California, Chile, Australia and so on, and the demand for new oak skyrocketed to 600,000 barrels.”

According to Milcan, that boom left the core group of leading cooperages unable to keep up, and the shortfall opened a door for new businesses to enter the field. In order to defend their position, he said, “Many large groups like Seguin Moreau, François Freres, Taransaud and Saury integrated stave mills into our operations. So today, that means the majority of good wood is bought directly by these large cooperages.”

Admittedly, Milcan is talking about only French oak. But since French oak dominates global wine barrel production, the industry integration he references is important to winemakers wanting to retain the best possible material for their programs. The French government office that controls oak forests (Office National des Forêts, or ONF) sells access to numbered parcels of trees each year according to what is best for the maintenance of the country’s forests – and that’s not necessarily what is best for cooperages and wineries.

“Those tree lots are of differing quality, and you need to pick over them to find the best of the best,” said Milcan. “That’s why being part of the Charlois group gives Saury excellent material. Charlois buys 70,000 cubic meters of wood each year for oak pallets and railroad ties, and within that we can select 8,000 cubic meters for high-quality barrel staves.”

Milcan added: “If you factor in the way the wine business is moving toward higher quality and more consistency, only some cooperages will be able to make the grade.”

To ensure quality and consistency, Saury has integrated a stave mill into its operation.

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Stout of Cooperages 1912 agreed. “We are constantly being asked to do more and more for the same price or less. That means we need to keep investing in our operation to make it more and more efficient. Controlling the process from end to end permits us to do that kind of work; but not everyone in our industry has that luxury.”

Lee Miller, director of operations for Nadalié USA, is even more frank. “A lot of the little guys who came in more recently are going to disappear,” she said. “It’ll take two or three years, but they’ll be out. They’ve offered cheap deals, but they just can’t offer the consistency the market demands. Plus, they may have been selling wood that wasn’t what they said it was.”

NEVER SAY NEVER?

Miller’s final point introduces a sea change for the wine barrel industry as a whole. “The French government conducted an audit a few years ago, and it emerged that there was much more wood from ‘Tronçais’ and other famous forests circulating on the market than was actually being harvested from those forests,” she said.

“I’m not saying that any cooperers were doing anything wrong. Many of the smaller operations just didn’t know what they were buying. They may have been told by a broker or a stave mill that the wood came from such-and-such, and they had no way of verifying it because they were not doing their own sourcing. Anyway, there was a crackdown, and that was effectively the end of forest-designated wood and the beginning of grain designations.”

Indeed, the tradition of listing the names of storied forests – Névers, Vosges, etc. – on barrels has all but disappeared in the past few years. But while the trigger may have been that French government audit, most cooperage representatives say the change was long overdue.

“We talked about wood origin when we didn’t know any better,” said Peltereau-Villeneuve of Seguin Moreau. “Then, starting in the 1990s, we discovered that there can be more material difference between trees 100 yards apart than there is between trees 100 miles apart. So we moved from forest designation to grain designation, and that was a good thing because grain types have a real impact on the wine. Regional names do not.”

Wood grain tightness has become increasingly important to winemakers in making their barrel selections.
labeled “Tronçais” is “Very Tight Grain,” and the former Allier barrels are now called “Tight Grain.” But not everyone has abandoned forest designations.

Nadalie still produces single-forest-origin barrels. “It’s probably 90% of what we do in French oak,” said Miller. “But it takes a lot of dedication.”

She explained: “There’s a real financial gamble. Our production timeline means we’re all guessing about the market three years in advance. But if you sort and sell just by grain size, you can go to multiple sources to get more. You can’t do that when you commit to sell by forest.”

Miller added: “Even so, many winemakers feel there is a difference in the wood, so our family ownership is committed to honoring that approach. Will that always be the case? Who knows? Change is part of business.”

Change has certainly been significant in the cooperage business in recent years. But much of it has driven improvement in the quality and reliability of material supplied to wineries. And the need to keep improving will no doubt remain constant.

Gary Werner is a Seattle-based wine industry journalist and communications consultant, and the former communications director for the Washington Wine Commission.

Comments? Please email us at feedback@vwm-online.com.

If wine barrel production ever followed set recipes or formulas, that time is gone. Every program now is a custom endeavor – matching oak species, grain tightness, seasoning time and toasting to a client winery’s particular grapes and the wine style it wants to achieve. That being said, most cooperages note customer buying trends.

“The biggest trend I see is a shift away from flashy aromatics,” said Martin McCarthy of Radoux USA. “People instead want structural input, or weight on the palate.”

Jason Stout of Cooperages 1912/World Cooperage notes a similar move to softer aromas and flavors, but not necessarily in the actual barrels. “We have customers who still want a lot of flavor impact,” he said. “But they may be taking whatever new oak they can afford in this economy and spreading its influence over a larger volume of wine.”

On the topic of volumes, François Peltereau-Ville-neuve of Seguin Moreau has seen evidence of change in orders for alternative barrel sizes. “We’ve been doubling our business in 300-, 400- and 500-liter barrels over the past couple of years,” he said. “It’s still a very small percentage, but the growth parallels the market’s stylistic trend toward less overt oak influence. It’s also less expensive per bottle, so it’s about the economy, too.”