

By Gary Werner, Northwest correspondent

STANDARD DEVIATION

BARREL SPECIFICATIONS ARE DEFINED AND DIFFERENTIATED BY HOUSE RULES

Improving consistency is a pervasive goal for the wine industry. Markets demand reliable replication from wineries, so wineries demand the same from their suppliers. We depend on scientific research and technical innovation to give us better tanks, pumps, bottles and closures. Then benchmarking and the pursuit of best practices deliver us more exacting uniformity within most of these supply categories.

So how do barrel producers defy the virtual interchangeability that characterizes many other winery inputs? Coopers obtain wood from the same sources and employ the same tools and techniques, but their handiwork remains remarkably distinct. Medium-grained French oak barrels with medium toast from one cooperage will yield a notably different wine than barrels produced to the very same specification by another cooperage.

"Yes, all barrels display a certain house style," said Martin McCarthy, sales and marketing manager at Radoux USA in Santa Rosa, Calif. "Part of it reflects coopering as a craft. But there's also the reality of few industry-wide standards. As an example, I've seen barrels labeled

tight grain that I would not call tight grain."

"It's not just grain," said Mark Heinemann, the North American market manager at Demptos Napa Cooperage. "The same is true for toasting and for the initial seasoning of the wood. It's the entire package of specifications. They are defined by the cooper, and so they distinguish us stylistically."

They also run contrary to the very fixed standards expected for everything from refractometers to glassware racks. And they raise questions: Which factors really determine the house style of a cooperage? How much do specifications for these factors vary across the industry? What do these deviations mean to wineries?

MORE THAN DRY

"The first variable determining house style is how you age the wood. That's really the foundation," said McCarthy. Note that he said "how" versus "how long." The way oak is seasoned in the stave yard over two or three years is crucial to the character of the finished barrels. He explained, "I think everyone sprinkles water over

stave wood right after they rough-saw. The process of air-drying actually requires water. Otherwise the ends of the staves will cauterize and internal moisture will not draw out. You'll then end up with cracking or breaking staves later in the process."

Heinemann agreed and explained more – including points of difference. "Natural air-drying is essential. It develops the staves in

AT A GLANCE

- Cooperage industry standards are really a spectrum of in-house specifications.
- Appropriate seasoning or air-drying significantly influences barrel character.
- Metrics for grain terms such as "tight" or "medium" vary across the industry.
- Toasting profile monikers such as "light" or "heavy" do not have uniform meanings.
- Barrel production is a true craft, and therefore includes elements of the indefinable.



Mark Heinemann of Demptos Napa Cooperage says there are many standards among cooperages regarding air-drying time. Photo: Gary Werner

a way that is more than just 'dry' – they become seasoned or flavored," he said. "But it's also one

of the most expensive inputs for a cooperage, after sourcing the wood itself. So, it can be compromised by corporate ownership decisions. There are cooperages who air-dry some of their wood for only six months. They use their sprinkler systems to force the equivalent of three years of rainfall over the wood. Yes, it strips out bitter, astringent tannins. But it doesn't really mature or season the oak."

Heinemann further said that staves must be air-dried in higher-humidity regions for at least two years in order to benefit from three specific molds: *aureobasidium pululanas*, *trichoderma harzianum* and *trichoderma koningii*. They grow naturally on the wood, and transform the staves chemically.

"They actually increase complex polysaccharides and polyphenolic structures in the oak, and those effects are permanent," he said. "But their life cycle is about 18-22 months. So this is a point of stylis-

tic differentiation among cooperages. Those who shorten their air-drying time don't have the mold in contact either long enough, or at all."

He added that variability in approaches to seasoning extends beyond time; they include the physical layout of the rough staves in the yard.

"That's another variable from one house to the next," he said. "It's normally a 90-degree cross-lattice that allows airflow in between staves. But they are not all square packs. Some are stacked differently depending on where they are being dried. For example, you can maximize the drying rates by putting them in octagonal configurations. Anyway, you want sun, wind and rain directly affecting every stave. So they should get moved every few months – the bottom becomes the top and so on. Everything is cycled. But once again, there are no industry standards."

What does this mean to winer-

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ies? Nothing in the short term, if they're happy with the barrels they get from their cooperage partners. But coopers who buy their wood from other suppliers, and don't have direct-from-forest sourcing, might be dealing with lower-quality wood in the future. As an example of why, Heinemann noted that Demptos formerly obtained about 10% more French oak stave wood than it required for its own production – in order to sell it on. But he added that those days seem to be over. Consequently, wineries that prize consistency in their barrel programs need to talk to coopers about the continuity of their oak supply chain.

GETTING GRANULAR

Of all the factors determining house style, the one whose pliability of meaning may be the greatest surprise is grain. Winemakers could easily assume that "tight" or "medium" at one cooperage means the same thing at other barrel producers. We are, after all, talking about the same wood. But once again, house rules drive the specifications.

"At Radoux, extra-tight means that the growth rings measure less than a millimeter and a half," said McCarthy. "Though, in reality, we see rings at just 1 millimeter. Tight is designated as grain measuring less than 2 millimeters, and medium won't be any greater than 3-1/2 millimeters."



Martin McCarthy of Radoux USA points out that there are few industry-wide standards for the terms used to describe grain tightness and toast levels. Photo: Gary Werner

"Seguin Moreau has five different grades," said François Peltureau-Villeneuve, president at Seguin Moreau Napa. "They are extra-tight, tight, fine, semi-fine and medium. Their specifications range from 1 millimeter to 5."

"At Demptos, we refer to very tight grain, tight grain, medium-tight, medium, medium-wide and wide," said Heinemann. "In the United States, we characterize them by grains or growth rings per

inch. Very tight is 18 to 21 grains per inch. (*The metric equivalent is about 1.4 to 1.2 mm per grain.*) Tight is 16 to 17. The medium designations are around 10 to 12 and 12 to 14. The widest is 5 to 8 grains per inch (5 to 3 mm)."

Consequently, buying the tightest-grained barrels from different coopers will likely give a winery the same structure. But "medium" at one may be substantively different than "medium" at another. This matters because grain tightness plays a direct role in tannin levels and extraction rates for the wine. As rules of thumb, tighter-grained oak offers lower tannin levels and slower extractions. Conversely, medium-grain wood contains more tannin and extracts faster.

FLAMES OF DIVERSITY

Most cooperages point to toasting as the most important factor shaping house style, or perhaps the second-most important, after seasoning. As with grain, winemakers might assume the industry's uniformity of basic terminology denotes conformity of meaning. But "medium" and "heavy" are in-house definitions at any cooperage.



Toasting practices have the most influence on a cooperage's house style.

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“Most general descriptions of toast revolve around the same terms,” said Chris Hansen, sales manager at Seguin Moreau Napa. “There are light, medium, medium-long, medium-plus and heavy. But there is no formal definition for these categories. One cooper’s medium toast could be 10 minutes shorter than somebody else’s. So actual toasting levels are different.

“Typical toasting times vary from 30 to 45 minutes,” he added. “But there are some coopers who say a medium toast is simply 30 minutes. They have a clock, and when it hits 30 minutes that barrel comes off. However, there are other factors to consider. What’s the temperature outside? What’s the humidity? Those variables alter the speed at which a toasting takes place.”

Lee Miller, director of operations at Nadalié USA, agreed that there is more going on than time on the fire. “Here’s an example,” she said.

“For a medium toast on American oak from Missouri, we’ll often go for 20 minutes on one side and 20 minutes on another. But even if you speak to four cooperages, and they all agree it’s 20 minutes a side at the very same temperature, there will be stylistic differences.” She explained: “How often do you turn the wood? Are you rocking and rolling it around? Where do you maintain the fire level? Are you adding water at any point? Do you go straight from the bending fire to the toasting fire? All of those nuances matter, and they all help shape our different house styles.”

“We have to rely on the coopers’ skill,” added Hansen. “They need to use their physical senses when they toast. They smell the barrel during the process. They listen to the sound of the wood over the fire. They touch the outside of the barrel to get a feel for temperature. They watch the development of the color



Lee Miller of Nadalié USA points out that there are many variables in barrel toasting in addition to time on the fire. Photo: Gary Werner

inside. They use all of their senses to make sure they are consistently getting the desired impact.”

This may seem quaint or oddly

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“touchy-feely” to a data-driven winemaker. But Hansen said there are plenty of similar examples from day-to-day life. “An analogy we share with winemakers is ordering a steak at a good restaurant,” he said. “Do they put a timer on and say your medium-rare steak will be done in five minutes? No, the chef smells it and listens to it during cooking. He or she uses their senses and their experience to cook it perfectly each time, even though the cut and the cooking temperature may vary a little.”

Akin to variation in grain definitions, this diversity matters to winemakers because of the impact on wine. Lighter toasts retain more structure as tannin, while heavier toasts make a greater aromatic contribution. Plus, there is a complex relationship between toast and grain, since tighter and wider grains

“accept” toasting at different rates and in different ways

METHOD AND MAGIC

This lack of conformity should not suggest that coopers are shooting from the hip. The industry’s most prominent names have developed their methods over multiple generations; their efforts are remarkably refined and ever-more reproducible. They also point out that each barrel is legitimately a custom job. And as such, the various numbers and definitions can only be guides to the craft.

“I’d love to say ‘this’ equates to ‘that’ in some definite form,” said Miller. “But it doesn’t work that way. We’re playing with fire, water, time and other factors. There’s just some magic in that mix.”

McCarthy concluded, “Some of

the issue of house style is indefinable. It’s much the same as two people attending the same grade school and learning penmanship from the same teacher. Their handwriting may be similar, but they still have distinct signatures.”

In the end, winemakers need to work attentively with different coopers to determine whether and how each house style can contribute to the consistent delivery of their own. ■

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

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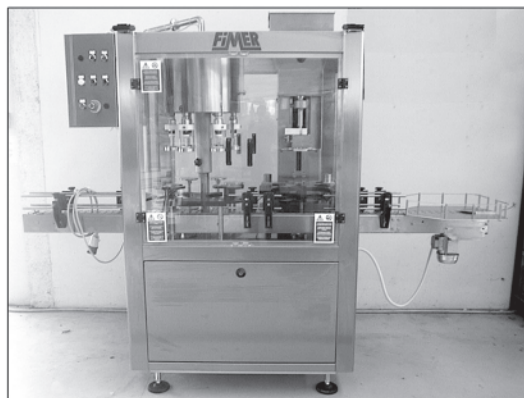


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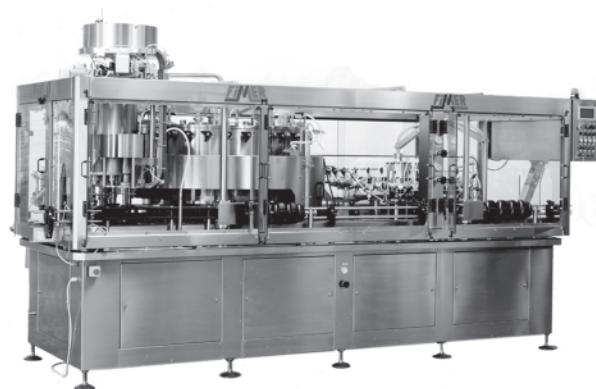
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