

Icône Elegance

A promising attempt at quantifying oak chemistry to produce a consistent barrel

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SEGUIN MOREAU HAS introduced a new line of barrels called *Icône Elegance*, which is aimed at "elegant" high-end wines. In actuality, *Icône* is more than just a new branding or line of barrels. It is both a product and a process. While the product is available now, I would argue that over the long-run, the process is likely to be more important than the product itself. The initial product, "*Icône Elegance*," may seem like just another brand positioning for French oak barrels that are intended for high-end Pinot Noir, Cabernet Sauvignon and Merlot, but it is really an attempt to produce barrels with a consistent aroma profile. Potentially, *Icône* could become an entire suite of barrel styles.

Wood is obviously a natural product and, as such, consistency of the final product will always be something of a challenge. One can't really control the exact composition of an oak tree over the entire 50 to 100 years it takes to reach maturity. If the tree's chemistry could be linked to the aromas a barrel will impart to a wine, the wood could be sorted according to a predicted sensory profile. Given the chemical complexity of both wood and wine, this is one heck of an ambitious goal.

This would have to be done statistically. It's less a matter of predicting that a particular stave will impart aromas X, Y and Z than it is a tool to figure out if a stack of staves in the seasoning yard will give 10 barrels that, taken together, will tend to impart aromas X, Y and Z.

According to Seguin Moreau R&D manager **Andrei Prida**, "The *Icône* is a name of concept of selection, so each type of barrel with a specific oaky profile will have its specific name. Now we launch the first product of *Icône* range, which is called *Icône Elegance*, which is designed for red full-bodied wines. The targeted profile is balanced, soft, sweet oak."

Published Research

Seguin Moreau is keeping a lot of the details of the *Icône* process secret but Prida, along with **Pascal Chatonnet** of *Laboratoire Excell*, have published some tangentially related research in the "*American Journal of Enology and Viticulture*" (*AJEV* 61:3:408-413, 2010). In this paper, Prida and Chatonnet attempted to correlate the chemical composition of oak to the sensory perception of wine aged in those barrels. Because of the relative complexity of wine as a solution, this is not as straightforward as one might suppose.

Prida and Chatonnet took 20 different wines, each aged in a different type of barrel, and analyzed them both chemically and sensorially. They found that the "furanic compounds (furfural, furfuryl alcohol and 5-methylfurfural) increased the overall oak intensity and decreased the fruity intensity. The presence of cis- and

trans-whisky lactones, eugenol and vanillin raised the intensity of the vanilla/pastry descriptor, while furfural and 5-methylfurfural diminished it."

Prida and Chatonnet found that the furans "masked the fruity and vanilla/pastry aromas." This means that the furans appear to have an impact on wine aroma to an extent out of proportion with their inherent odor activity. This is notable because the furans are often dismissed as relatively unimportant contributors to oak aroma due to their relatively low volatility. Prida and Chatonnet surmised that they have "an indirect impact as markers, enhancers or precursors of some unknown or known odorants." Cited examples included furfuryl thiol, 5-methyl-2-furan-methanthiol, or furfuryl ethyl ester.

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Prida and Chatonnet also found that "some volatile phenols (guaiacol, 4-methyl-guaiacol and eugenol) described as smoky and spicy in their pure state and which have low sensory thresholds were not consistently linked to their respective sensory descriptors in wines." This finding is important to the *Icône* process since they are trying to find compounds that they can measure in the oak that allow them to predict at least some of the sensory character of the final wine.

At the same time, they said some "samples described as having a higher olfactory persistence were richer than their paired samples in relatively high-boiling wood compounds such as trans- and cis-whisky lactone, maltol, eugenol and vanillin, explaining their retronasal persistence."

The Process

The research published in *AJEV* gives a hint to the overall *Icône* process. However, it is pretty obvious that *Icône* would have to be much more comprehensive than the study as published in order to yield anything like the results reported for the *Icône* process. The research used to develop *Icône* would have to include many more compounds than are discussed in the *AJEV* paper. It would also have to have some way to relate the descriptive sensory analysis back to the chemical composition of the final wines. Seguin Moreau regards the details of these particular refinements as a trade secret.

The paper published in *AJEV* thus gives us an idea as to how Seguin Moreau built the predictive mathematical model used in *Icône*, but it shouldn't be taken as the whole story behind it.

The Product

The "Icône Process" involves repeated sampling, analysis and selection. Because the analysis relies on extraction and chromatography, it is too involved and too time consuming to sample every single stave. Instead, entire stacks of rough staves are sampled and analyzed while they are seasoning in the stave-yard. The sampling process follows industry standards and is a fairly typical MilSpec-105E-style regime that should be familiar to anyone who has worked for a company with ISO 9001 certification. The analysis is a little harder to discuss since, as noted above, the exact compounds Seguin Moreau deems relevant to Icône are being kept secret. I think the important thing to remember about Icône is that Icône Elegance is just the initial product. It is reasonable to assume that the Icône process could be adapted to other parameters to produce barrels with very different sensory properties.

Seguin Moreau seems to be downplaying the role toasting plays in this product. Toasting, of course, has a huge impact on the stave chemistry. My impression is that the predictive aspect of the Icône process tightly constrains the potential toasting regimes. To put it another way, the further the toasting gets from the baseline "medium-long," the less able the mathematical model used in the Icône process is able to predict the sensory properties of the final wine.

Over the past decade or so, we have seen a few iterative but still interesting trends in the technology behind the old-school craft of making barrels. Barrel making is a skilled craft in the traditional sense. Coopers usually learn their trade during a

lengthy apprenticeship. It is my belief that, as much as the advertised toasting regimes, this training-through-apprenticeship is a major factor in the formation of distinct "house styles" between the individual cooperages. It has been my experience that French oak barrels from a particular cooper will tend to be more alike regardless of the particular source forest than barrels from the same forest but coopered by different cooperages.

The current Icône barrels (Icône Elegance) are meant for "sophisticated" red varieties. These barrels seem to have been designed for Pinot Noir from Oregon's Willamette Valley or California's Anderson Valley are the obvious choices, but to my mind, I think these barrels have the greatest potential when paired with any of the classic varieties from locations with relative long days and cool growing seasons.

These barrels should also pair well with red Bordeaux cultivars (Cabernet Sauvignon, Merlot, Cabernet Franc), but I would expect that the "typical" high-end California Cabernet Sauvignon would overpower the "boise" character of these barrels.

Personally, I would like to give these a try with a cool-climate Syrah that was co-vented with about 5 percent Viognier. Beyond the immediate potential of the new Icône Elegance barrels themselves, the Icône process seems like a promising attempt at quantifying oak-chemistry in order to produce a consistent product. **WBM**