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Champagne Bollinger

The famous French Impressionist painter Paul Cezanne once said, “For an Impressionist to paint from nature is not to paint the subject, but to realize sensations.”



Barrel Pointillism

Each year Denis Bunner, Chef de Cave at Bollinger, engages nature to capture and bottle the thousands of tiny qualitative elements available in the vintage and realize a unique Bollinger sensation.

When meeting Denis you are instantly taken in by his easy-going nature. He shares a mastery of viticulture and winemaking with grounded erudition and a quiet confidence. With each shared insight, you see his scientific curiosity in the minutiae of harvest and vinification, a curiosity that comes from constantly observing nature in Bollinger’s *terroir*. He explains his unyielding interest in micro-vinification trials at Bollinger’s pilot winery to measure the impact of climate change.

Then you taste the Bollinger wines. You can’t help but be struck by how intuitively Denis blends all this elaborate science with an artist’s sensibility to create that unmistakable Bollinger sensation. Up close, individually vinified barrels of plot-specific wine are like singular color points on a canvas. Only with blending, distance, and time do these individual points meld to reveal a beautiful, liquid portrait of the Bollinger landscape colored by the indelible, organoleptic pleasure Lily Bollinger defined years ago.



The Guy

Denis is a winemaker by heritage who grew up working in his parents' vineyards in Alsace. "For me, it's motivating when I go into the vineyard. Especially on La Côte aux Enfants," Denis says. "When I look up the beautiful landscape of Aÿ, I really feel like I am in my place. I mean, to be a grower, to feel this sentiment of freedom, and at the same time, to be rooted in a *terroir*."

He likes to say he chose his job twice. Once after earning his diplomas in Agronomy in Paris then in Oenology in Reims, and a second time when he returned to wine after a short one-year business school stint working in the coffee industry.

This foray outside of wine was meant to enlarge his view of global trade, but the experience had the opposite effect. "We were focused on evolving consumers from just drinking coffee to tasting it," he said, "to appreciate the differences in *terroir* and provenance." But this was done from an office. "Something was missing because everything was so far away," he said, "so far." The distance was too much. "I was in my office, and I thought, I want to be close to the vineyard, close to the *terroir*, and to be able to touch the product in my everyday work, to have the sensation to follow and to connect."

The Vineyard 80

Denis attributes 80% of wine quality to viticulture, so naturally devotes considerable energy to understanding nature's inputs. Just having good vineyard plots that produce good quality grapes isn't enough in his view. "Every year is different," he underscores. "Some years are so difficult that nature is just saying to you, *I am the one who decides*, and you are not going to be able to do anything." He points out the most immediate example, "like with mildew in this 2024 vintage. We lost half of the crop. We couldn't prevent that," he says. His team more than coped with the challenge. "In the end, the quality was there, and we are really, really happy with the results of '24."

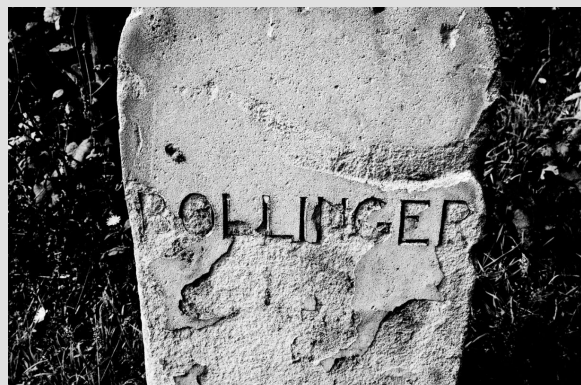


Measure with a Micrometer; Craft with Intuition

Since his arrival in 2013, Denis has followed a clear work objective; to measure as precisely as possible what can be observed in the vineyards, particularly given the ever-changing impact of climate change. "Only by understanding the *terroir* through observation and measuring what you do can you adapt to what Mother Nature is giving to you," he believes.

From the start, harnessing data was a priority. He began by compiling existing data plot by plot, *terroir* by *terroir*, and village by village. He gathered past weather data, information about the phenolic stages linked to budding, blossoming, harvest dates, and disease across 50 vintages. "It took me one year to compile," he says. "I had 50 different scores, 15 different climatical resisters."

He created a wine library with all the profiles, scores and viticulture data. "I was thinking what can I do with all this information?" He wondered, "what about taking all the information and trying to predict the quality of a champagne at Bollinger?"



Denis teamed up with a friend who is a big data specialist, and they further segmented the data into week-by-week increments of the growing season to arrive at a weighted data set of factors to analyze. “For example, early flowering across five great vintages. Three of them had early flowering,” he noted. “So that’s a factor.”

Excited to test this new data model, Denis asked this friend to model from the past and apply it to the future of La Grande Année 14. “What is the aging potential of La Grande Année 14, given the vintage conditions? Will it be a Grande Année RD or RD++?” he asked. “Will it be a wine to keep for 50 years in the winery?”

The model predicted an RD. “I didn’t say anything to anybody,” Denis assured, until a year prior to launch when the entire Bollinger team tasted La Grande Année 14. Denis recounts his excitement when his team said, “Wow, it’s mature, but it’s still very young for a seven-year-old wine.” Everyone agreed, “It has the potential to become an RD.”

This proved another important data point. “The palate is still the first tool,” believes Denis, “but the fact that you have all these measures is knowledge.”

The Pilot Winery

One very visible commitment to the Bunner ‘observe and measure’ methodology is Bollinger’s pilot winery. It is a veritable tank & barrel data mine for micro-vinification experiments that study terroir-specific fermentation in miniature volumes, both in stainless steel and barrel.

Each harvest starts the stopwatch ticking on a multi-year (at least 5 years) organoleptic science experiment that stretches into bottling, lees aging, and dosage, then more aging to discover what is going on in that defined time/terroir/grape space.

The experiments take place in a wall of 41 tall, slender fermentation tanks that look more like stainless test tubes than fermenters. These individual 100-to-200-liter tanks are measuring data to answer specific scientific questions. Inevitably those questions beget more questions.

Denis appointed a four-person R&D team, each of whom focuses on researching a specific aspect of production: the vineyard, the winery/barrel room, the aging process, and one person to oversee all testing. Continuous cellar trails compare wine in barrels and in steel, but always measuring outcomes with the same volume and conditions, comparing with or without micro-oxidation to see how wines evolve.

The theory is that testing harvests in miniature gives insight into the impacts of climate change. For example, Denis might want to see the profile of the wine made from berries harvested in stages at 9, 10, and 11 degrees potential alcohol from the same plot. The team can measure the difference of each over 14 days. “Sometimes I see no big difference, and sometimes there is a big difference,” Denis remarks. And that leads to more questions...

Their research extends to other climate-related phenomenon like how periods of hydric stress on the vines impacts mineral content, size, and concentration of the berries. In one trial, they isolated specific CO₂ isotopes created at different

phases in the growth cycle on different soil types to glean insights into the consequences on berry quality. The 2015 Grand Année showed them an example of how an early hydric stress period led to small, concentrated berries, and resulted in a powerful, concentrated cuvée. Knowledge is power.

The Lily Effect

Bollinger ferments around 40% of the wines in barrel from a selection of over 4000 barrels accumulated over many years, the youngest being four years old and the oldest are 100. Denis underscores how each barrel is unique, thus making it impossible to replicate the Bollinger vinification. Bollinger's vinous RFIDs, as it were.

"Madame Bollinger maintained barrel fermentation at a time when the other Champagne Houses moved to stainless steel tank fermentation because it was easier," Denis says. "But they lost the precision, I think, and the craft and the fact that the barrels are really interesting to prepare the wine to age over a normal time."

Denis believes that the extensive number of barrel fermentations allows him to be precise and *terroir*-specific with individual components. "A barrel is something small that keeps the link between the plots and the wine," he says. He segments the fermentations to understand the influence of berry profile on the final wine profile.

Micro-oxygenation from barrel fermentation is an important element in the Bollinger style. It inoculates the wine, but also concentrates the aromas, sugar, acidity, and phenols that may become too complex and too bitter otherwise. This natural approach achieves beautifully complex phenols that are overall softer, finely buffed in texture and prove better for aging.

Prior to blending, individual barrels are tested and scored separately. The global picture only becomes clear after the *assemblage*.

Denis points out that aging is another area influenced by Madame Bollinger. "She did a 10-year study to decide if she's going to move from the natural cork to a metallic cap," he says, "and the aging results showed that five years of cork gives a more ageable, stable, creamier, and richer style of Champagne."

This texture is so distinct there is French wordplay to describe it, "*ça bollinge*," some say.

Today, Denis still ages vintage wines under cork but uses metallic cap for the non-vintage, believing it adds a small measure of micro-oxygenation, but natural cork ages vintage wines at a superior, slower rate. "Because we do oxidative fermentation, but then do a reductive evolution," Denis explains, "this combination of wood and natural cork, I think, is now an inspiration for a lot of growers that are coming back to this way of winemaking."

Denis adds, "Madame Bollinger might have put it more simply. That by changing nothing, we are now modern."

As the French expression goes, "*la plus ça change, plus c'est la même chose*."

Santé