

Stevenson sets the sugar story straight



Myths of ageability explored

In his *Prise de Mousse* column, “Myths of Ageability I” (*WFW* 44, p.44), David Schildknecht correctly quotes my opinion that low- or no-*dosage* bottlings of Champagne decline far more rapidly than those with at least 6 grams of sugar, accurately referring readers to my first *À la Volée* column in *WFW* 21 (p.44), in which I outlined the reasoning behind this opinion. However, unable to offer any “mechanism [that] could underlie this alleged preservative influence,” he states that “it is far easier to explain why the belief is widespread,” then suggests that sugar is associated with longevity because wines with high residual sugar such as Sauternes, Tokaji, and Trockenbeerenauslese are “notoriously long-lived.” I will not put words into David’s mouth; he did not actually state that this is my reasoning, but since it directly followed my position on the subject, it would be perfectly reasonable for readers to assume that this is so. Yet such a notion could not be further from the truth. In fact, at about the same time, I wrote, in *Wine Report* 2009, “We wine hacks talk blithely about sugar’s general preservative qualities, but at concentrations found in

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Champagne, it really has no preservative property at all.”

Not only do I not subscribe to the idea that sugar has any preservative effect at the level of concentration found in brut Champagnes, but as David correctly noted, I also limit my comments about sugar’s role in the process of graceful aging to its presence in the *dosage* of Champagne. Yet he inserted my exclusively Champagne argument in the middle of a paragraph about sugar in all wines, and just after he mentioned Riesling trocken. This last comment follows an earlier mention of a “remarkably youthful” 101-year-old German Riesling of less than 11% ABV, the “rivetingly complex and downright refreshingly dry 1909 Eltviller Taubenberg.” In other words, sugar in wine, in all wines, evidently has no direct and singular effect on ageability. How could it? So, I must be mistaken and therefore guilty of propagating one of the unfounded myths, right? Wrong, David, you cannot compare a Riesling with low or no residual sugar—or, indeed, any still wine—with a Champagne that has low or no *dosage*. A still wine, Riesling or otherwise, is freshly bottled with whatever residual sugar it happens to have and is not opened until it is consumed, whereas Champagne is opened up just before it is due to be sold and is exposed to the air before the *dosage* is added and the bottle recorked—at a time when its contents are mature and in such a highly reductive state that it is extremely vulnerable to the risk of oxidation.

While that does not explain what sugar could possibly do to enhance the smooth and graceful aging of Champagne (I will get to that), it does illustrate how much safer the single-phase aging of a dry Riesling is. I have not tasted the 1909 Eltviller Taubenberg, and I truly envy David’s experience, but it does not surprise

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me. You will get no arguments from me about the exceptional longevity of bone-dry Riesling. I have tasted many that have been up to 80 years of age and yet in the rudest of health—mostly from Alsace, but also from the Mosel, Rheingau, and Wachau. Shortly after my column in *WFW* 21 was published, I included the similarly themed opinion piece referenced above in *Wine Report*. In the very same book, I also wrote an Alsace opinion piece titled “Sugar Can Kill!” warning against increased residual sugar levels, commenting, “In this year’s edition of *Wine Report*, I seem to be arguing for more sugar in Champagne and less in Alsace, but of course neither argument is about sugar per se. Both arguments are based on what is necessary for their respective styles of wine.” Drier wines are starting to emerge from Alsace once more; but for a while, the dry-wine reputation of Alsace was under threat by those who sought that most tautological of viticultural goals, physiological ripeness, which was merely doublespeak for overripeness, high alcohol, and residual sugar.

Empirical evidence and science

The real debate on whether 6–12 grams of sugar can aid longevity concerns Champagne—not Riesling or any other still wine. But if sugar has no preservative effect at this residual level, how can it ensure smooth and graceful post-disgorgement aging? Having tasted tens of thousands of Champagnes over

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the past 35 years, I know that low and no *dosage* have a negative effect on the aromatic development of Champagne, resulting in coarse, fruit-stripping, aldehydic aromas. But as I said in my column, my own experience is merely “empirical evidence, not pure science.” Good enough for me, perhaps, but not for anyone else. So I asked the most respected, knowledgeable, and experienced chemical scientist in Champagne I know, Bertrand Robillard, whether as little as 6–12 grams of sugar could help Champagne age gracefully, and he told me, “Yes, sugar is a good compound for screening some aromas.” But when I asked him whether any research had been carried out, he confessed, “I’ve never read of any experiments on the influence of sugar on aromas, but I have noticed this effect. I know that some people consider it to be a fact, and we can imagine that some aldehydes could be sensitive to this phenomenon. A lot of people who make a low-*dosage* or no-*dosage* Champagne also do not add SO₂ at the time of disgorgement, and these wines show a high oxidability level.”

All the best consultant enologists know that oxidation is an increasingly serious problem in Champagne, and they are well aware that a lack of sulfur at the time of disgorgement is the primary cause. Sulfur is therefore a slam dunk when looking for a culprit, so it is interesting to note that someone of Bertrand Robillard’s scientific reputation should be of the opinion that low- or no-sugar *dosage* could be the sole cause for aldehydic aromas. Acetaldehyde is the principal aldehyde in all wines, but in technically correct still and sparkling wines its presence is so low that it is not detectable and even enhances the bouquet. At higher levels, acetaldehyde becomes detectable as a Sherry-like aroma, which strips away the fruit and quickly renders a formerly bright and beautiful Champagne so

coarse and oxidative that it will never age smoothly or gracefully. I asked Dr Ron Jackson, author of *Wine Science: Principles and Applications*, if sugar alone could have any effect on acetaldehyde, and he pointed me toward an article by Hans Gerhard Maier: “Volatile Flavoring Substances in Foodstuffs” (1970). This paper supports the theory that sugar suppresses acetaldehyde (by increasing its vapor pressure), but later studies in this area have all involved sugar and viscosity levels that are not appropriate for the aroma matrix of a wine—research that the Champenois should have tackled long ago.

Although the science may still be limited and incomplete, it does nevertheless appear to support the empirical evidence that low- or no-*dosage* bottlings decline more rapidly than those with at least 6 grams of sugar. This theory could be proven or disproven, of course, or other mechanisms might be found. Sugar could be ruled out entirely and sulfur found to be the sole offender. We won’t know until the science has been done, but it was the absence of scientific understanding, coinciding with a persistent and widespread dropping of *dosage* levels, that prompted me to write “Aging Gracefully” for that very first *À la Volée* column. “In the 1980s, the average residual sugar in a brut Non-Vintage Champagne was 12–13g, whereas today it is 10–11,” I wrote, expressing my concern not just about the trend for low- and no-*dosage* cuvées under the Brut Extra and Brut Nature designations, but also the knock-on effect this was having on the mainstream brut Champagnes. I thought that the drop in *dosage* was alarming at the end of 2008, but with the current average of 8–9 grams, the *dosage* has dropped proportionately further over the past six years than it had over the previous 30 years.

An ambitious trial

As my concern grew over low- and no-*dosage* cuvées, I began to set up (on *WFW*’s behalf) the most ambitious long-term Champagne trial that any wine publication has ever undertaken. It is not a scientific study as such, but it is a serious, practical comparison of how different *dosage* levels in the same Champagne evolve relative to each other. At my request, 13 houses (Deutz, Drappier, Duval-Leroy, Alfred Gratien, Lanson, Moët & Chandon, Mumm, Pol Roger, Pommery, Roederer, Ruinart, Taittinger, and Veuve Clicquot) each disgorged 16 magnums of 2004 and 16 magnums of 2002 in April 2012 and dosaged four magnums of each vintage with 0, 3, 6, and 9 grams of residual sugar, with approximately half the houses using

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20mg of SO₂ and the other half 40mg. We taste the first tranche in 2015, when we will publish our findings after three years on cork; and in 2018 we will do exactly the same exercise after six years of post-disgorgement aging, using the same tasters, of course. In addition to publishing the six-year report, we will compare the results of both tastings to see what, if anything, they reveal.

I agree with David, of course, that we need to jettison prejudice and intensify efforts to explain organoleptic phenomena. That is precisely what I am trying to do.

Tom Stevenson, Berkeley, Gloucestershire, UK ■