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Harvard Square

Zero–Two–Wine–Three– Eight

The Most Opinionated Wine Newsletter in America

The extraordinary beliefs of Don Quixote and his faithful squire Sancho Panza

Preface:

The Ingenious Hidalgo Don Quixote of the English Channel (1605 Edition)

The plot covers the adventures of a poor hidalgo (gentleman) from the English Channel, named Alonso Quixano, and obsessed with books of chivalry, which he collects in his library in a sickly way. These disturb his judgment to the point that Quixano one day became the wandering knight Don Quixote, whose mission is to travel through Spain to fight evil and protect the oppressed. He takes the road, riding on his old horse Rocinante, and takes to squire a naïve peasant, Sancho Panza, who rides a donkey. Sancho Panza, whose main concern is, as its name suggests, to fill his rumen, believes that his master suffers from visions, but conforms to his conception of the world, and undertakes with him to break the spell of which Dulcinea is a victim.

Sulfite or no Sulfite, that's the question (2022 Edition)

Dear readers, the subject once again is cluttered with prejudice, unspoken, popular beliefs, and well-established ignorance, and so profitable to the industry of "qu'en dira t'on" (popular gossip). It is therefore once again my responsibility to warn you of the obscenity of certain words like "biogenic amine", and theories that will be used later in this newsletter. I must also warn you of my determination to convince you that it is not necessary to fight against windmills to drink well, as not all villages are "chateaux en Espagne" (Pie-in -the-sky) , and that Dulcinea of Toboso was not very cartesian.

*Please note also that I am not a scientist and even less a chemist, and I therefore reserve the acuity of my remarks which are based only on official research of scientific documentation of modern oenology. Because I seek only to do good, and to oust evil, and this in all humility as a sommelier.

Memorandum:

If you have any discomfort, allegiance, or indisposition to any of these words, please stop reading immediately, as I cannot be responsible for the future of your mental health.

Sulfite, Sulfur, Sulfur Dioxin, SO2, Ion, Potassium Bisulfite, HKSO3, Ammonium Bisulfite, NH4HSO3, Potassium Meta Bisulfite, Volcanic Sulfur Combustion, Di Ammonium Phosphate, Ammonia Residual, Biogenic Amines, Lactic Acid, Malic Acid, Bacteria, DNA, Multigenic Purification, Histamine methyltransferase, Ethanol, ...

Chapter 1:

1.1 **Should we be afraid... of sulfites?**

In recent years a fear of sulfites has been slathered on the world of wine and its consumers. The origin is justified due to excessive practices on the part of winegrowers in the past. Amplified by the global movement of "natural wines" and a lack of fair and transparent information on the understanding of its practice and usefulness has made this friend suddenly an enemy and has suppressed cost, and this without understanding the more dangerous consequences that this can represent for the consumer. A witch hunt, an inquisition? What could go wrong…

1.2 **What are sulfites?**

Sulfites can import its compound formula, is always based on the sulfide atom, this substance is a gaseous molecule, that is found (naturally or added/active or inactive) in the wine. It is formed naturally during the fermentation of grape musts into alcohol. So, where there is alcohol, automatically there are sulfites? And a wine without sulfites, this does not exist (naturally).

When added before, during, or after fermentation, it has the function of being an antioxidant of wine, an antiseptic agent against yeasts and unwanted bacteria, and a stabilizer in the preservation of bottled wine. Scientific knowledge around wine, both in terms of viticulture and winemaking, has evolved enormously over the past 50 years. Not so long ago, we knew the beneficial effects of sulfites, but not the optimal doses... This led to excesses because we preferred to put too much rather than not enough, to avoid any problem. But today, we understand much better the action of sulfites as well as the minimum amounts needed. Good winemakers are very concerned about using only the bare minimum. Moreover, the addition of sulfites is regulated, and maximums are imposed. It is scientifically recognized (defined by the WHO) that sulfites have no danger and do not cause serious inflammatory reactions below 0.7 mg per kg of your weight per day, and that a sulfite intolerance represents only 2% of the world's population.

1.3 **But where are these sulfites hidden?**

Sulfites are not only found in wine, but in a very large number (naturally or in addition) of everyday consumer products such as the following:

canned and frozen fruits and vegetables, fruit and vegetable juices, fruit fillings and syrups, jams, jellies and other canned fruits, dried fruits and vegetables, e.g. apricots, coconuts, raisins and sweet potatoes, cereals, corn flour and starch, crackers and muesli, dehydrated potatoes, pureed, peeled and pre-cut, including French fries, pasta, pulp and mashed tomatoes, condiments, e.g. horseradish, ketchup, mustard, pickles and relish, vinegar and wine vinegar, lemon and lime juice bottled and concentrated thereof, alcoholic, and non-alcoholic beer and cider, bakery and pastry products, including cereal bars, cold cuts, hot dog sausages and others, salad dressings, sauces and soups, fish, crustaceans and mollusks, rice preparations and noodles, soy products, gelatin, or pectin, sweeteners, dextrose, glucose dry matter, syrup and molasses, medicines, and pharmaceuticals etc.

So, do we really have an intolerance to sulfites, or like many of us an intolerance to **excess** sulfites in wine? Possibly an invented fear that makes us believe like Don Quixote that windmills are dangerous giants?

But then by fashion, or for the right to equality for all, or by the insanity of the influences of popular beliefs, and to either say help the 1% of people sensitive to sulfites, (but also to try to seduce all the fearful) some winemakers now make wines without added sulfites, natural wines, or rather that contain enough of it (since fermentation produces it naturally) and may fall below the threshold where reporting is mandatory.

1.4 **Free or combined?**

Only part of the sulfur added to wine is effective as an antioxidant. The rest combines with other elements that have no use in wine. The part that is lost in the wine is said to be "combined" with the active part called "free". A good winemaker will try to have as much free sulfur as he can. At best it will reach a free/combined ratio of 50%. Total sulfites levels are the sum of free SO2 and combined SO2.

Chapter 2:

2.1 **A headache, according to "Châteaux en Espagne (pie-in-the-sky)…"**

If you are confused by this information, do not drop your reading. The solution is in the bottle (and in the next paragraph). Red wines contain on average 10% to 20% less sulfites than white and rosé wines because white and rosé wines do not contain natural antioxidants due to the skins and stalks of the berries not coming into contact with the juice. In order to obtain the same level of free sulfur, the total concentration must be higher than that of dry wines. Sweet and sparkling wines have the highest dose of SO2 because sugar combines with a large proportion of the added sulfur. To obtain the same dosage of free sulfur, the total concentration must be higher than for dry wines.

But then my natural PètNat, a headache assured?

Well, here you are very, very confused, like Don Quixote, because you are certain that red wines give you headaches and leave you indisposed every time. You can swear on Sancho Panza's head that the culprit can only be the infamous SULFITE!! And if you now drink only white, sparkling or sweet wines, because you no longer have headaches, just evils of mind? You must believe social media better than your own doctor because numbers are strength. Yet, I swear to you that you are pursuing the wrong subject and that the real culprits are much more dangerous than sulfites.

2.1.1 **The biogenic amines and the role of bacteria in lactic acids and aerobic and anaerobic yeasts.**

Here we are, the subject revolves around a problem of dioxin, putrefaction, nitrogen and especially Yeast Nurturance!!
I will keep it simple because chemical explanations can only worsen the understanding of the problem.

2.2 **Nutrient for yeasts:**

In the common modes and practices of modern winemaking winemakers (who sometimes can be the problem) use yeast nutrients.
Yeasts are an essential element for the fermentation of the juice of reason, and especially the must. Yeasts are microorganisms consisting of simple cells of the fungi family. They are classified into two main families, aerobic and anaerobic depending on their methods of breathing. These two types of yeast are essential for the complete transformation of juices. Some yeasts (Saccharomyces Cerevisiae) are more resistant to very high alcohol concentrations of 16% to 17% by volume before becoming inactive. To make the must so it has concentrations of fruit sugars (Brix) high enough to feed the yeasts up to the alcohol / sugar level desired by the winemaker. The demand for wine that has high alcohol levels and high body concentration (Parker syndrome) forces winemakers to push their wines to the maximum. The problem is that fermentation needs nitrogen and therefore its contribution is essential since it does not exist naturally in the grapes. The intake of nitrogen is therefore the most quantitative element in the addition of yeast nutrients as well as the increase of bacteria to facilitate the transformation of malic acid into lactic acid.

Chapter 3:

3.1 **For fear of...**

Unpleasant aromas and tastes in the wine caused by the biogenic amine (Histamine, Tyramine and Putrescine) in the wine, winemakers will add in excess (overdose) yeast nutrients. Also you need to take into consideration as most of its biogenic amine are formed during the second fermentation (malolactic, but many are already present in large quantities in the grapes and will decompose in the must (Methylamine, Ethylamine, Diamino pentane (cadaverine)).

If all yeast nutriments are not transformed during fermentation, they will then turn into Biogenic amines. So, when biogenic-amine producing strains are present, the winemaker is encouraged to inoculate select malolactic starters to replace the indigenous microflora.

During malic fermentation (most red and white wines) research shows a very significant increase in their presence in ready-to-eat wine.
Research also shows that its amines are inexplicably present in greater numbers in certain appellations, regions, vineyards, or winery, without understanding their origin or how to control them.

Memorandum:

In order to limit your reading headache, I will avoid all the explanation of the decarbonation and the action of bacteria genera and the effects of PH during fermentation and aging.

3.2 **What if Dulcinea de Toboso was just a mirage of your imagination.**
The real enemies of your headache, indispositions, physical discomforts.

"Amines have an important metabolic role in living cells. Polyamines are essential for growth; other amines like histamine and tyramine are involved in nervous system functions and the control of blood pressure. Biogenic amines are undesirable in wine because if absorbed at too high a concentration, they may induce headaches, respiratory distress, heart palpitation, hyper- or hypotension, and several allergenic disorders. Histamine is the most toxic and its effect can be potentiated by other amines. But human sensitivity varies with the individual detoxifying activities of human body.."
(Aline Lonvaud-Funel FEMS Microbiology Letters*, Volume 199, Issue 1, May 2001, Pages 9–13)*

3.3 **Biogenic amines can be mutagenic**
Subject to established medical evidence, it is possible that some of its biogenic amines are mutagenic. Often, they turn out to be carcinogenic or cancer-causing since genetic mutations so often cause cancer in cells.

Conclusion and last chapter:

4.1 **My God, must I stop drinking wine immediately?**
Even if we have just understood that sulfites (when not used in excess) are not an enemy of humans and that the inflammatory effects on us (99% of the population) is not the main reason for our indispositions - it is not the case with our sensitivity to biogenic amines.
It is therefore very important to choose the wines you decide to consume. By deciding to drink wines from professional and competent winemakers" Pas-de-la-petite-biere" (no small feat) that practice wine eco-responsibility such as, Sustainability, Bio-dynamicity, and or Organic practice. It is the best way for you to deny the chances of excess poisoning due to sulfur or biogenic amines agents in your elixir of pleasure.

4.2 **Don Quixote returns to his village**
"Don Quixote, defeated by the Knight of the White Moon (the bachelor Sansón Carrasco), returns home. Sancho begs him not to give up, suggesting that he take on the role of shepherd, often staged in bucolic stories. Having abandoned the reading of any novel of chivalry, he finds his mind and therefore shows the greatest wisdom."

4.3 **Our mantra at Bonde:**

Excess is the enemy of the good.
Moderation always has a better taste.
Drink less, but drink better.

Memorandum:
My words and opinions in these newsletters are and would always be personal, and I intend to offend. I always accept that others have the full right and duty to challenge me, to argue, and, if it is necessary, excommunicate me from their beliefs (often dull and hollow) because I would act the same way if it were the other way around.

Mr. B

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