

Sulfites and organic wine

European wines have been required to state on the label if they contain sulfites since 25 November 2005. This consumer-information measure is similar to the American "Government Warning" label required for wine that contains sulfites. Although the levels of sulfur dioxide in wine have never been so low, this labelling has had the effect of worrying consumers, perhaps realising for the first time that the wine they drink contains sulfites. Here we will take an objective look at sulfites to understand why they are used and the issues at stake.

1. THE VAST MAJORITY OF WINES CONTAIN SULFITES

Sulfur dioxide has been known and used since ancient times. The Ancient Greek writer Homer referred to it as a disinfectant around 800 BC. In the 15th century, it was mentioned in reference to winemaking in several different documents. By the end of the 18th century, its uses in winemaking were described more specifically. At this time, winemakers recognised that sulfur dioxide:

- stopped fermentation
- avoided deterioration
- prevented 'cloudiness'
- prevented 'turning'

In those days, the role of yeasts, bacteria and chemistry in winemaking were not yet fully understood... it would not be until the beginning of the 20th century that the science and practical applications of sulfur dioxide would be explained. Today we know that sulfur dioxide essentially curtails the growth of undesirable yeasts, allowing desirable yeasts to thrive during fermentation; it limits damage to grape harvests due to mildew or rot; it aids colour extraction; it acts as a preservative; and it slows down oxidation. So sulfites have many advantages in winemaking.

2. IN THAT CASE, WHY LIMIT THEIR USE?

The downside of sulfur dioxide is that it can be toxic when inhaled or ingested. Both for those who use and handle it, as it is supplied as

a pure gas or a concentrated solution, and also for those who consume it, for whom it can cause sneezing, irritation, headaches and pulmonary insufficiency. Medically speaking, it is not, however, considered an allergen as it does not lead to the formation of immunoglobulin. Beyond these direct health concerns, both winemakers and lawmakers have also sought over time to limit the use of chemical products out of respect for the environment and a growing demand for the most natural products possible.



3. ARE SULFITES FOUND ONLY IN WINE?

Far from being restricted to wine, sulfur dioxide is found in many food products: fresh, dried, frozen and tinned fruits, vegetables and fish, flour, pasta, condiments, dried herbs, different types of sugars, and fermented drinks (eg. cider, beer and wine). It is one of the main food preservatives (labelled as E220 and E228 on food products).

4. IS IT POSSIBLE TO ELIMINATE SULFITES IN WINEMAKING?

Completely avoiding sulfur dioxide in wine production is difficult because it plays an important role in ensuring the quality of wine.

Winemakers who manage to avoid sulfites must harvest grapes in perfect condition, limit any unnecessary oxidation in the production process, control the activity of yeasts and bacteria, and ensure effective clarification. These are the most fundamental aspects of winemaking and must be implemented meticulously. An absolutely perfect mastery of this without sulfites is very difficult, and those who achieve it successfully - and consistently - are rare.

5. IS IT POSSIBLE TO REDUCE SULFITES AND MAINTAIN QUALITY?

Sulfites are basically used at four stages in the winemaking process, each with its own issue at stake:

- at harvest (the condition of the grapes)
- at the end of fermentation (yeast and bacteria control)
- during preservation and aging (cellar hygiene)
- at the time of bottling (consumer satisfaction).

Depending on the winemaker's priorities, the sulfites could be reduced at any one or all of these stages - the most stringent could opt for very low amounts or none at all. However, as we have seen, the process of transforming grapes to wine begins with the vine itself. The entire cycle of winemaking from the very initial stages has to be considered in the quest for purity.

6. WHAT IS THE POSITION OF ORGANIC WINEMAKERS REGARDING SULFITES?

Reducing sulfites is a concern shared by the majority of winemakers, both organic and non-organic. However, the constraints on organic winemakers are greater as they are bound to a charter restricting chemical additives. There are as many positions on sulfites as there are schools of thought in the organic sector, from biodynamics to 'natural' wines. To date, there is no regulation in the strict sense of the term for the use of sulfites in organic wines. The recognised guidelines advocate a more or less radical reduction of sulfites. For dry red wines, the maximum authorised level varies between 70 and 120 mg/litre (depending on the organic guidelines), while European regulations allow 150 mg/litre. Considering that winemaking documentation from the 1900s indicates that the levels then were 400 mg/litre, it is clear that much progress has already been made. Incidentally, yeasts can also produce, completely naturally, considerable amounts of sulfur dioxide during fermentation.



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7. IS ELIMINATING SULFITES AN END IN ITSELF?

Today, there is a prevailing view that an absence of sulfites is a sign of quality. However, many professionals, even in the organic movement, recognise recurrent flaws in sulfite-free wine: for example, oxidation, animal characteristics and the continuation of fermentation after bottling.

Why impose health criteria at the expense of taste? The consequence will be to restrict wine to a canon of beauty that is difficult to achieve with consistent results and to fall into a trap already encountered in previous times.

8. CONCLUSION

To entrust the transformation of grapes to nature alone is to produce, almost inevitably, vinegar, the ultimate phase of their evolution. Over the centuries, winemakers have sought to stabilise this process, halting the transformation when grapes turn to wine. First they used traditional methods, and later they discovered the principles of oenology. This science is relatively recent at just over a century old. It has been, and will continue to be, responsible for many advances, including the issue of reducing or eliminating sulfites. The quest for improving winemaking motivates winemakers, oenologists and researchers alike and is driven by their passion for their product. The ultimate goal is, as it should be, to produce healthy wine that is a pleasure to drink.

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