SULPHITE

THE RULE OF THUMB METHOD

The purpose of using sulphite is to preserve the wine at all stages of production to prevent oxidation. It is important to protect wine at all stages except during active primary fermentation when sufficient CO2 is being produced to automatically protect the wine and during malo-lactic fermentation when the malo-lactic bacteria would be inhibited by the presence of sulphite.

For home winemakers the source of sulphite is either Sodium or Potassium Metabisulphite. The former should be used only for the sterilization of equipment whilst the latter can be used both for equipment and wine. Potassium is preferable for wine, as it does not increase the Sodium content of the wine.

Once sulphite has been added to wine it can be found in two forms, namely bound SO2 and free SO2. The bound SO2 plays no part in protecting the wine so it is the free component in which we are interested. There are methods to determine the amount of free SO2 however all are relatively expensive, particularly if you make more than one or two carboys at a time. The cheapest method is the use of Titrets however even these cost about $1.00 for every test.

I have found the following procedure to be generally satisfactory. Using this method I have not experienced any oxidation problems, nor does the end product show excessive sulphite on the nose.

First make up a 10% solution of Potassium Metabisulphite. I use a 4 litre screw cap jug and I put 400 gms of powder into the jug and add about 2 litres of warm water. Shake vigorously to dissolve the powder and then top up with cold water to 4 litres. Avoid inhaling the fumes, as they are quite strong at this stage. Use of the 10% solution is quite simple as at the rate of 1cc per litre of must or wine it is approximately equivalent to 50 ppm.

The actual levels of free and bound SO2 will vary depending upon the ph of the must or wine. The lower the ph the more “built in” protection the wine has against oxidation however as fermentation progresses, and particularly after malo-lactic conversion the ph will rise, sometimes dramatically, and that’s when the SO2 protection is required.

At crush add 1cc of the 10% solution per litre of crushed grapes, this applies to both red and white. the purpose of this addition is to inhibit wild yeasts that might be present on the grapes. If you have some mouldy grapes [it's really best to throw them out] use 2 ccs per litre, however this might inhibit fermentation so the preparation of a yeast starter might be needed to overcome the excess sulphite. Don’t add any more sulphite until after fermentation is complete or you will risk a stuck fermentation, nor should you add more sulphite to red wine if you intend to carry out a malo-lactic conversion.

For white wine, assuming that there will not be a malo-lactic conversion, add 1cc per litre immediately upon completion of fermentation and after racking off the gross lees. This step will have the added advantage of preventing any unwanted spontaneous malolactic conversion. For red wine the next step is a little trickier as you will have to wait for

the completion of malo-lactic conversion before adding any sulphite. If you carry out a chromatography test the decision is somewhat easier, but if not it should be possible to determine the end of malo-lactic conversion by watching bubbles rising in wine and collecting round the neck of the carboy. When malo-lactic conversion is in full swing there should be a necklace of bubbles round the neck of the carboy. Once conversion has completed the necklace should disappear and only very occasional bubbles will be seen. As these bubbles could be escaping CO2 gas that has been trapped in the wine it is beneficial to vigorously stir the wine to release as much CO2 as possible. A few days later the lack of rising bubbles should indicate that malo-lactic conversion is complete and that it's safe to add 1 cc / litre of SO2 solution.

Depending upon your frequency of racking add I cc per litre at each racking unless rackings are less than three months apart in which case add 1 cc per litre at every second racking. Add the final dose of 1cc per litre after the last racking, or filtration, before bottling. Do not add sulphite at the time of bottling but rather rinse the bottles with the 10% solution and allow them to drain but do not rinse out the sulphite.

By the way the solution can be re-used many times for equipment sterilization but use fresh solution for wine. I find it best to keep two lots on hand one for wine and the other for equipment. After you have finished with a carboy wash it thoroughly with Diversol or equivalent, rinse, and then put a small amount of sulphite solution in the bottom and tightly cap the carboy. It is then ready for use without the need for cleaning and sterilizing.

Hope this helps.