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Things We're Dwelling on Now…

Cold Stabilization

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Cold stabilization time is here for many of us. When you think about it, cold stabilization shares with all winemaking the principle that bad results are unlikely to hurt anyone, but you can definitely upset people. Here are some tips to keep in mind when attempting to get the "wine diamonds" out before they show up at a dinner party.

Faster chilling is better. For quicker and more complete precipitation, changing the temperature drastically is the best way to shake those crystals loose. Seeding with potassium bitartrate and agitating the wine can speed up the process further. Stabilization can still take place with traditional chilling and higher temperatures, but the process will take more time.

Chilling is only effective on potassium bitartrate. In a year where a lot of deacidification took place, a fair amount of calcium carbonate was most likely used. Calcium tartrate is NOT responsive to temperature like potassium bitartrate is. The standard conductivity and freeze tests are also not effective in determining stability. What conditions do affect calcium tartrate?

Alcohol, pH and the presence of sugars and acids all play a role in both potassium and calcium tartrate precipitation. As a general rule, higher alcohol and higher pH will favor precipitation, while organic acids and sugars seem to inhibit it. Malic acid seems more inhibitory than lactic, however, so malolactic fermentation can be considered as a step towards precipitation, especially when the pH bump is considered. Fermenting to dryness and back-sweetening late would also be a helpful step from a tartrate removal perspective given the higher alcohol and lack of sugar.

Filtration is best employed at the end of the chilling process. Too much clarification before stabilization can remove the nucleation sites for crystal formation and inhibit precipitation. After chilling, it's very helpful to filter (at the same temperature you've been holding) and remove the crystals before any can go back into solution- especially when seeding and stirring have been used.

If you can afford the time, patience can pay off. When dealing with red wines and wines that may have calcium tartrate, waiting may be as effective as othertechniques. As color pigments and other phenolics polymerize, there are fewer complexing species to grab the tartrates and prevent precipitation. In the case of calcium tartrate, just giving the wine 4-7 months in the range of 5-10C

will allow for due diligence on your part. The good news is that calcium tartrate instability is relatively rare in table wines.

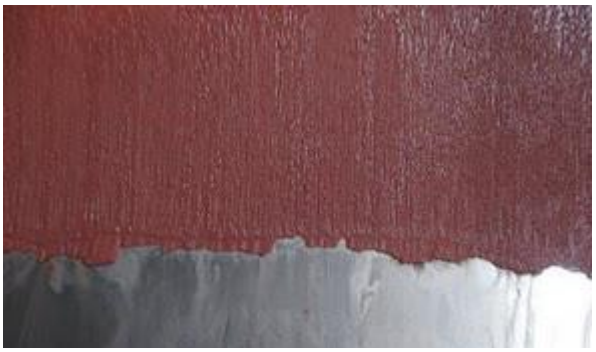

Photo: Sainte Genevieve Winery

Like most parts of winemaking, cold stabilization can be as simple or as complex as we choose to make it. Also like most parts of winemaking, there are aspects of it that don't seem to make a lot of sense. The standard boilerplate statement that "each wine is inherently different and may respond differently to the same treatment that worked on the previous one" applies as well. The Wine Analytical Lab can provide a conductivity test to determine your potassium bitartrate stability if you want to go beyond the freeze test.