

Oenological strategies for the removal of pinking in white wine

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The pinking of in white wine is the turning of color from yellow to salmon hue. White wines obtained from certain grape varieties (e.g. Chardonnay, Sauvignon blanc, Riesling, Trebbiano di Lugana) showed to be susceptible to pinking [1] that has been evaluated by an assay providing the addition of hydrogen peroxide. Even if its appearance does not seem to affect the sensory properties [2], strategies are necessary for its removal. Nowadays, the treatment with polyvinylpolipirrolone (PVPP) was reported to significantly decrease the pink color [3]. To assess other additives and co-adjuvants suitable for pinking removal, this study aimed to identify the wine treatment(s) most effective for achieving this purpose.

A white wine showing the pinking fault was added with several additives and co-adjuvants, including active charcoals (bleaching and deodorizing), bentonites, gelatine, PVPP, PVI/PVP, chitosan, potassium caseinate, kaolin, zeolite, silica, calcium phytate, oenological tannins (oak and grape skin), glutathione, ascorbic acid (without/with sulfur dioxide) yeast derivatives for a total of 23 removal assays. The wines were stored up to 26 days and their susceptibility to pinking was carried out at 4 sampling points (day 1, 5, 15 and 26) through the hydrogen peroxide test. The wine was considered susceptible to pinking (SP) when an increase of 5 mAU was observed at 500 nm [4]. Moreover, the pink color index at 500 nm was determined.

No change in the pink color index was found with the exception of potassium caseinate. Some of the tested additives and co-adjuvants were not effective in limiting SP, including active charcoals, bentonite, gelatine, kaolin, zeolite, silica, grape skin tannin, glutathione and ascorbic acid. For some of them, an increased SP was evidenced (e.g. kaolin, zeolite, grape skin tannin). The treatment with PVI/PVP strongly decreased the pinking susceptibility already after 1 day. In this condition, the wine was not SP anymore at day 15. For this sampling time, other additives and co-adjuvants limited the SP, such as three of the yeast derivatives tested, chitosan, PVPP, potassium caseinate and oak tannins. In particular the addition of PVPP, the mainly used co-adjuvant, did not result the most relevant one to solve such significant color change. Further study will investigate the selected additives and co-adjuvants in other pink wines as well as in combination in order to identify the most promising treatment for the pinking removal.

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