

Wine preservation using potassium metabisulphite high dilution: a preliminary study

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Background: Changes on relevant sensory characteristics after wine is bottled are made by chemical reaction amid substances of wine or by microbial contaminants. Potassium metabisulphite has good properties to avoid degradation of wine, but it could be toxic. **Aim:** To evaluate potassium metabisulphite highdilution as an alternative agent for wine preservation. **Methodology:** Manego Longo red variety grapes (2018/2019) were used in order to produce the wine. The fermentation of wine took place in one wood barrel and it lasted six months. After that, three different treatments were prepared: WC, control wine; WH, samples of wine added to dynamized potassium metabisulphite (30ch); WM, wine added to 24 mg/L potassium metabisulphite. The samples were bottled in 50 mL Falcon tubes (ten for each treatment) and kept in a cool box. The parameters total acidity (TA), color intensity (CI) and polyphenol total index (PTI) were analyzed in duplicates every three months. Variance analysis was performed on the data and the average values were compared using Tukey test ($p>0,005$). Wine preliminary evaluation (color, appearance, aroma and taste) was performed by two referees. **Results and discussion:** The results found after six months since the beginning of the work have showed no difference among the samples in terms of CI and PTI. Total acidity results in the sixth month presented a smaller average value to WH and WM (81.5 ± 0.71 mEq/L and 81.0 ± 1.41 mEq/L, respectively) when compared to the total acidity of the WC (86.0 ± 1.41 mEq/L), despite no difference among them being statistically significant. Wine preliminary evaluation showed that control wine (WC) has had prominent acid taste e change of color, if compared to other treatments. **Conclusion:** No wine degradation related to color intensity or polyphenol total index has been presented by now; however, sensory attributes, like taste and color, for the samples treated by potassium metabisulphite 30ch have showed preservation effects to wine.

Keywords: high dilution; total acidity; color; red wine.

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