

## **Screening of different commercial wine yeast strains: the effect of sugar and copper additions on fermentation and volatile acidity production**

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The aims of this study were to examine the effect of high sugar concentrations of must and copper residues on different commercial wine yeasts. Copper originating from pesticides has been known to inhibit yeast, but its effect on fermentation performance and VA production of different yeast strains had not been investigated in detail. Fermentation performance was monitored through mass loss and growth as measured at OD600. VA, glucose and fructose concentrations were monitored after 21 days of fermentation with the FOSS 2000 Grape Scan. Certain strains were initially less affected by high sugar concentrations than others, but only musts fermented with strains VIN13, WE372, N96 and L2056 contained less than 11 g/L fructose after 21 days. VIN13 and RJ11 produced the lowest VA in the 21°B, 25°B and 28°B musts. Higher VA concentrations were also produced in higher sugar containing musts. It must, however, be kept in mind that the nutrient requirements of yeast strains differ which can affect this, although these must all received sufficient DAP. The fermentation ability of six strains was also monitored in must containing Cu concentrations close to the legal limit in SA. Strains NT50, Collection Cépage Cabernet (CC) and D80 were not significantly affected, whereas musts fermented with strains VIN13, NT112 and RJ11 contained significantly more glucose and fructose after fermentation. The utilization of fructose was also more affected by the copper than that of glucose, which might further have contributed to a sluggish fermentation. This inhibition was also reflected in the growth of the different yeast strains. Copper also increased the VA production by yeast strains with certain strains being affected more than others.