The use of micro-oxygenation (MOX) during red wine production is fairly common, with MOX wines showing increased colour density, fruity aromas, and polymeric pigments. There is very little research available on how to determine the optimal rate/amount of MOX for a specific wine. The amount and rate of oxygenation must be balanced with the wine’s specific chemical composition to prevent detrimental effects. Higher rates of oxygen addition is used prior to MLF due to the presence of a range of reactive species capable of consuming oxygen including grape-derived phenolic material, yeast hulls and wine solids. Oxygen application rate pre-MLF ranges from 5 to 90 mL/month for 10 to 25 days and 2 to 9 mL/month post-MLF for between 56 and 252 days.  

To investigate this question, a Cabernet Sauvignon wine was produced at the UC Davis Teaching and Research Winery during the 2013 and 2014 harvests. Wines received different rates and durations of both pre- and post-MLF MOX. Due to space constraints the data shown will focus on the 2014 wines.

**RESULTS AND DISCUSSION**

**•** There was no build-up of acetaldehyde in any of the treatments.

**•** Both total and free SO2 levels decreased during MOX with the fastest depletion in the higher MOX rate treatments (Fig. 2).

**•** Fluctuations in SO2 due to release of SO2 from bound (Fig. 2)

**•** No build-up of DO in any MOX treatment – only 20-9 had DO of 1-200 µg/L after first week of treatment.

**•** Both pre- and post-MLF MOX wines independent of rate followed a similar UV-Vis evolution than the control over time for all wavelengths monitored.

**•** Only hue (420nm/520nm) indicate an impact of MOX rate (Fig. 3 and 4).

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**REFERENCES**


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