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Sparging of white wine

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Abstract:

Background and Aims: Sparging with an inert gas is often used in the wine industry to lower the dissolved oxygen concentration in wine. It is not well known, however, if this practice affects the composition of wine, and as well as the physio-chemical and operating factors affecting the efficacy of sparging. The main aims of this study were to assess the effect of sparging on white wine composition and to elucidate winemaking related factors affecting its efficacy.
Methods and Results: Chenin Blanc and Sauvignon Blanc white wines were exposed to several sparging regimes to evaluate the effect of gas flow rate, wine temperature, gas composition, bubble size, repeated sparging and extended sparging on sparging efficacy and wine composition.
Conclusions: Bubble size and wine temperature were the two main factors that influenced sparging efficacy the most. Sparging with nitrogen gas does not appear to influence the chemical composition of the wine to a large extent, except in the case of dissolved CO_2 concentration; however, sensory studies on its effects are required.
Significance of the Study: Sparging appears to be a safe practice for wine producers to lower dissolved oxygen concentration in wine if lost dissolved CO_2 can be replenished.

Keywords: bubble size, carbon dioxide, dissolved oxygen, nitrogen gas, sparging, temperature