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The use of glucose oxidase and catalase for the enzymatic reduction of the potential ethanol content in wine

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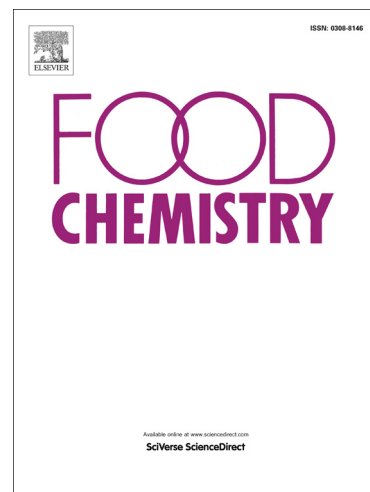
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## 15 **Abstract**

16 Due to the increase of sugar levels in wine grapes as one of the impacts of climate  
17 change, alcohol reduction in wines becomes a major focus of interest. This study  
18 combines the use of glucose oxidase and catalase activities with the aim of rapid  
19 conversion of glucose into non-fermentable gluconic acid. The H<sub>2</sub>O<sub>2</sub> hydrolysing  
20 activity of purified catalase is necessary in order to stabilize glucose oxidase activity.

21 After establishing the adequate enzyme ratio, the procedure was applied in large-  
22 scale trials (16L- and 220L-scale) of which one was conducted in a winery under  
23 industrial wine making conditions. Enzyme activity as well as wine flavour were  
24 clearly influenced by the obligatory aeration in the different trials. With the enzyme  
25 treatment an alcohol reduction of 2 % vol. was achieved after 30 h of aeration.  
26 However the enzyme treated wines were significantly more acidic and less typical.

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