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**Título artículo:** Can SO<sub>2</sub> reduction in white wines be achieved by using CO<sub>2</sub> saturated grape musts ?.

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#### RESUMEN:

The purpose of this work was to study the possibility of partially or totally SO<sub>2</sub> replacing by using saturation of grape musts with CO<sub>2</sub> at the prefermentative stage. No differences were observed in main oenological parameters between wines from musts un- and treated with CO<sub>2</sub>. Chromatic characteristics of all wines, at the bottle stage, showed similar values of lightness. Wines from CO<sub>2</sub> saturated grape musts were characterized by more greenish tones in color according to CIELab a\* coordinate, visual attribute demanded by consumers in this type of wines. In addition, the decrease of SO<sub>2</sub> doses showed wines with more yellow color and higher values of absorbance at 420 nm. Regarding volatile composition, it is noteworthy that the saturation of must with CO<sub>2</sub> and the consequent SO<sub>2</sub> dose reduction resulted in a fruit- and floral-driven wine style due to the higher content in certain esters that contribute most to the aromatic character of white wines. The sensory analysis of wines was carried out by Napping® technique. The musts treated with CO<sub>2</sub> in the prefermentative stage provided more aromatic and fruity wines. After 12 months of storage, wines from must treated with CO<sub>2</sub> and without SO<sub>2</sub> doses showed lower lightness and a yellow color with more greenish tones. From a microbiological point of view, wines have been stable against acetic bacteria, but the absence of SO<sub>2</sub> has led to the development of malolactic fermentation in the bottle.

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