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Título capítulo: Malolactic fermentation of tempranillo wines: effects on chemical composition and sensory quality.

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RESUMEN:
This chapter describes changes that occurred in the enological parameters, volatile fraction composition, and sensorial quality of Tempranillo wines as a result of malolactic fermentation (MLF). The first part is dedicated to evaluating the influence of the strain of lactic acid bacteria (LAB) inoculated to perform the MLF for what three *Oenococcus* (O.) *oeni* strains were assayed: an autochthonous strain, C22L9, isolated from a winery in Castilla-La Mancha (Spain), and two other commercial strains, PN4™ and Alpha™ (Lallemand Inc.), all introduced by direct inoculation (MBR™). Strain C22L9 carried out MLF slightly faster than the two other commercial strains, leading to a lower increase in volatile acidity and 2,3-butanedione and 3-hydroxy-2-butanone concentrations, higher lactic acid content, and lower degradation of citric acid. The second part of the chapter is dedicated to evaluating the pros and cons of co-inoculation (COI) of LAB and yeast versus the traditional process carried out in wineries in which LAB are inoculated after completion of alcoholic fermentation by yeast, in a process known as sequential inoculation (SEQ). The study was performed over two commercial yeast strains (VRB™ and VN™) and an autochthonous *Oenococcus oeni* strain (C22L9), and parameters analyzed include the kinetic of vinification process and the chemical and sensory characteristics of Tempranillo wines produced. Results from this research showed that concurrent yeast/bacteria inoculation of musts produced a significant reduction of process length, without a pronounced degradation of L-malic acid during AF, nor an excessive increase in volatile acidity.

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