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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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