

Title Volatile ester-synthesising capacity in 'Tardibelle' peach fruit in response to controlled atmosphere and 1-MCP treatment

Author Abel Ortiz, Jordi Graell, M. Luisa López, Gemma Echeverría and Isabel Lara

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Abstract

Peach fruit is highly perishable, which drastically restricts storage potential and marketing possibilities. Although aroma is a very important attribute for sensory quality of peach, post-harvest procedures, aimed at extending commercial availability of fruit, have focused preferentially on other quality aspects. In this work, we were interested in assessing the effect of 1-methylcyclopropene (1-MCP) treatment and controlled atmosphere storage on the post-storage production of volatile esters, important aroma-contributing compounds, by fruit of the late season cultivar 'Tardibelle'. Results indicate that the supply of alcohol and acyl-CoA precursors was altered as a consequence of treatments considered, leading to significant changes in the emission of some volatile esters, particularly of the straight-chain type. Some enzyme activities involved in the production of volatile esters from fatty acids were partially inhibited in 1-MCP-treated fruit, suggesting that they are under ethylene regulation, although tissue-specific differences were also observed. Lipoxygenase and hydroperoxide lyase activities were particularly relevant for these modifications.