

Title Effect of refrigerated storage on aroma and alcohol dehydrogenase activity in tomato fruit

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Abstract

Recommended temperatures for refrigerated storage of tomato (*Solanum lycopersicum*) have been established based on maintenance of physical and visual characteristics without considering their effect in tomato flavor. In this study, the effect of refrigerated storage (10 °C) was compared to storage at 20 °C on the volatile chemical profile of the aroma of light red tomato '7705' using GC-MS. Changes in the aroma volatile profile were correlated with a sensory analysis, using the quantitative descriptive analysis (QDA) method, and with alcohol dehydrogenase (ADH) enzyme activity. Refrigeration induced changes in levels of 3-methylbutanal, linalool, guaiacol, hexanol, *trans*-2-hexenal and *trans*-3-hexenol. Some of these alterations may be explained by a decrease in ADH enzyme activity observed in refrigerated tomato. They were reflected in aroma perception as an increase in the descriptors solvent-humidity and medicinal and a decrease in the descriptor lemon tea.