

Title Changes in physicochemical characteristics and volatile compounds of apricot (*Prunus armeniaca* L. cv. Bergeron) during storage and post-harvest maturation

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Abstract

The effects of storage and post-harvest maturation on the physicochemical characteristics and volatile constituents of Bergeron apricot were investigated during the 2007 season over two experiments. Fruits, harvested at two distinct stages of maturity, in two different experimental orchards, were stored in cold chambers at +1 °C for up to 3 weeks and then subjected to a post-harvest maturation in ripening chambers at 20 °C and 60–70% RH up to 7 days. Firmness, soluble solids (SS), titratable acidity (TA), and the levels of the main volatiles were determined. Physicochemical changes included a significant decrease of firmness during both storage and post-harvest maturation whereas the levels of SS and TA were found to be very similar. The results also indicated that, whatever their initial stage of maturity at harvest, the rates of softening of apricots during storage and/or post-harvest maturation were very comparable. During post-harvest maturation, the levels of C₆-compounds decreased drastically whereas, at the same time, those of esters, lactones and terpenic compounds greatly increased. During storage at 1 °C, a decrease of C₆-compounds was also observed. As regards other compounds, there were some statistically different results between samples but the changes observed for lactones, esters and terpenic compounds were relatively small in comparison to those observed during post-harvest maturation at 20 °C. The results also showed that, at the end, qualitative and quantitative differences can be observed in the “ready-to-eat” apricots according to their initial stage of maturity at harvest. On average, apricots harvested at the most advanced stage of maturity have, on average, the highest levels of soluble solids and the highest levels of volatile compounds of interest.