

# Biosynthesis of volatile compounds during on-tree maturation of 'Rich Lady' peaches

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## Abstract

The emission of aroma volatile compounds and the activity of some related enzymes were monitored throughout fruit maturation of 'Rich Lady' peaches (*Prunus persica* L. Batsch) with the general purpose of studying the development of the ability to produce aroma volatiles, and of identifying which enzymes may act as control points for the ripening-related increase in the volatile-synthesising capacity in this peach cultivar. Even though most of the identified compounds were detected at all sampling dates, the evolution throughout maturation was different for each individual compound. Only late-harvested peaches were found to produce lactones, which are typically associated to the characteristic peach flavour. Results also suggest that alcohol *o*-acyltransferase activity, the direct responsible for the esterification reaction in the last step of the pathway, was necessary but not sufficient for esters production. Transient increases in the production of alcohols, which were associated to alcohol dehydrogenase activity, were concomitant to esters emission, particularly hexyl and butyl esters, thus pointing out the relevance of precursor availability as a major factor influencing aroma volatiles production during on-tree maturation of 'Rich Lady' peaches.