

Aroma volatile compounds of 'Belletardie® (Tardibelle)' peach fruit in relation to harvest date and cold storage technology

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Abstract

This work assessed the effects of harvest date, storage conditions and post-storage ripening period on fruit quality and aroma emission by 'Belletardie®' peach. Fruits were harvested on two dates (18 September, 21 September) and stored in air or controlled atmosphere (3 kPaO₂/10 kPaCO₂). After three weeks of storage at 0°C plus 0 and 7 days of ripening at 20°C, standard quality parameters and aroma volatile emission were analyzed. Volatile compounds emitted by peach samples were extracted and analyzed using a dynamic headspace system with activated charcoal trap and GC-FID, respectively. Data were subjected to Principal Component Analysis (PCA). The highest total aroma emission was obtained for late-harvested fruit after 7 days of ripening at 20°C regardless of atmosphere conditions. The PCA model revealed which volatile compounds accounted most for the differences observed in the volatile profile of samples among treatments. The concentration of the main compounds contributing to the flavour of 'Belletardie®' peach increased after 7 days at 20°C subsequent to cold storage.