Abstract

'Fuji' apples were harvested at two different dates, over two consecutive years (1999 and 2000), and stored under different atmosphere conditions: AIR (21 kPa O_2+0.03 kPa CO_2), SCA (3 kPa O_2+2 kPa CO_2) or ULO (1 kPa O_2+2 kPa CO_2). After 3, 5 or 7 months of storage plus 1 or 10 days of ripening at 20 °C, aroma volatile emission and quality parameters were measured. Generally, the highest total aroma emission was obtained after 5-months storage and 1 day of ripening at 20 °C regardless of atmosphere conditions, for early-harvested fruit. After 7-months storage, the ULO atmosphere depressed total aroma volatile emission. The compounds contributing mostly to the characteristic aroma of 'Fuji' apples were ethyl 2-methylbutanoate, 2-methylbutyl acetate and hexyl acetate, and their concentrations were higher the first day after removal from storage at 5, 3 and 7 months, respectively. Storage conditions and season had a significant effect on aroma volatile compounds.