

Title The effect of hydrocooling on the keeping quality of early ripening pear cultivars

Author Maria Giovanna Molinu, Tullio Venditti, Antonio Dore, Antonio Petretto, Guy D'hallewin and Mario Agabbio

Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey. 256 pages.

Keyword Pear; hydrocooling; precooling

Abstract

The keeping quality of three early ripening pear (*Pyrus communis*) cultivars, two belonging to the local biodiversity (S. Domenico and S. Giovanni migliorata) and a National one (Coscia) was evaluated, during the postharvest life, as affected by two hydrocooling temperatures. Fruit of 'S. Domenico' and 'S. Giovanni migliorata' were harvested in the middle of June and 'Coscia' in July when they reached their optimal stage for consumption and before the internal break down started in the local cultivars. Harvest took place in the morning, and then in the laboratory all fruit was heat conditioned until the core reached 30 °C. One third of the fruit was immediately cold-stored for 7 days at 5 °C and 95±2% RH followed by a 3 day simulated marketing period at 17°C and 75% RH. Half of the remaining fruit was hydrocooled with water at 0 °C to reach inside the fruit 5 °C (HC-5C) and the other half to reach 2 °C (HC-2C). Then, fruit was cold-stored as reported above. Both hydrocooling temperatures improved the keeping quality of the pears, during storage and SMP. Compared to the control fruit, pulp of hydrocooled fruit remained more firm and in Coscia, handling blemishes were less evident. During the SMP most of the fruit that was not hydrocooled became un-marketable due to the internal break down in local cultivars and to the development of molds in Coscia. With both hydrocooling temperatures the internal break down was completely inhibited during the whole experiment in 'So Giovanni migliorata', while in 'S. Domenico' fruit hydrocooled up to 5 °C evidenced a start of internal break down at the end of SMP. The results evidenced a strong effect of hydrocooling on the delay of internal break down in local early ripening pear cultivars.