

Title Tomato Precooling using Simple Hydrocooler and Fruit Quality Changes during Ambient and Cold Storage

Author Chu Doan Thanh, Luong Thi Song Van, Nguyen Thi Thuy Linh, Antonio Acedo Jr. and Katinka Weinberger

Citation Book of Abstracts, Asia-Pacific Symposium on Assuring Quality and Safety of Agri-Foods, August 4-6, 2008, Radisson Hotel, Bangkok, Thailand.

Keywords *Lycopersicon esculentum* L.; hydrocooling; storage; fruit shelf life

Abstract

A simple and portable hydrocooler developed for small farms and packhouses was used to rapidly cool breaker tomato (cv. Perfect 89) before storage at 25°C or 10°C. Water temperature was lowered to 10°C using ice and fruit were submerged until fruit temperature decreased to 13°C which was kept for 4, 8 and 12 min. Fruit dipped in ambient water served as control. Ripening-associated softening was expectedly slower at 10°C than at 25°C. Hydrocooled fruit showed comparable rate of softening as the control but at the end of storage, they were firmer than control fruit. Cooling duration had no appreciable effect on fruit stored at 10°C. Fruit stored at 25°C and precooled for 8-12 min had higher firmness than the other treatments at the end of storage. Soluble solids content (SSC) of hydrocooled fruit was either higher or comparable to the initial level. SSC of the control decreased with storage at both temperatures. Titratable acidity decreased with storage regardless of treatment. At 10°C, fruit acidity decreased more rapidly in the control than in hydrocooled fruit. At 25°C, hydrocooling had no appreciable effect. It had also no marked influence on fruit decay. However, at 10°C, decay was lower in hydrocooled fruit showing less evident chill damage than control fruit.