

Title Effect of Ice Treatment on the Quality of Litchi Fruit
Author Zeng Kaifang and Edna Pesis
Citation Program and Abstracts, 3rd International Symposium on Longan, Lychee and Other Fruit Trees in Sapindaceae Family, August 25-29, 2008, Fuzhou, China. 132 pages.
Keywords litci; ice treatment; cooling

Abstract

To learn how ice treatment may affect the quality of litchi fruit, the litchi fruits were treated with 3 treatments: control – untreated fruit placed in plastic containers (2kg); fruit placed in plastic containers with crushed ice; fruit dipped in 0.1% Prochloraz and then placed in plastic containers with crushed ice. All fruits were stored at 0°C for 12 days and then transferred to 8°C for 6 days shelf-life. Fruit visual appearance, peel browning and volatiles in fruit juice were monitored after 12 days storage at 0°C and shelf-life. The results showed that, the fruit treated with ice + 0.1% Prochloraz remained bright red in color, while the initial red color of control fruit and fruit treated with ice alone had largely disappeared by the end of the experiment. The fruit treated with ice produced significantly higher levels of acetaldehyde (AA) and ethanol than control fruit during storage, while there were no remarkable effects on the soluble solids content (SSC) and titratable acidity among different treatments. The study further showed that polyphenol oxidase (PPO) and peroxidase (POD) activities of control fruit peel were significantly higher than those of ice treated fruit during 0°C storage and after shelf-life. However, alcohol dehydrogenase (ADH) and pyruvate decarboxylase (PDC) activities of control fruit pulp were significantly lower than those of ice treated fruit. These results suggested that ice treatment, especially ice + 0.1% Prochloraz treatment kept better quality of litchi fruit during cold storage or after shelf-life.