

Title Study on postharvest quality deterioration of Cuiguan pear
Author Wen X. Chen, Hai Y. Gao, Li L. Song, Yong J. Zhou, Hang J. Chen and Yong H. Zheng
Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey.
256 pages.
Keyword Cuiguan pear; PPO; quality

Abstract

Cuiguan pear is the most important pear cultivar grown in Zhejiang province of China. Because of its unique eating quality that is superior to the most other available pear cultivars, Cuiguan pear is highly welcomed by consumers. However, Cuiguan pear is harvested at hot raining season and is susceptible to deterioration after harvest. The fruit will rapidly lost their market value limiting the storage life about 2-3 weeks under common cold storage conditions. The physiological and quality changes of Cuiguan pear stored both at room and low temperature were investigated. The results showed that soluble sugar, titratable acid and vitamine C contents decreased rapidly after harvest, which indicated that quality deterioration in Cuiguan pear was a senescence process and closely related to nutrients loss. During postharvest senescence, the consumption of nutrients caused by respiration made the fruit lose their unique flavor. Meanwhile, the accumulation of active oxygen species due to inefficient scavenging capacity of SOD, CAT, POD resulted in damage of cell construction, which in turn promoted the senescence process mainly manifested as fruit softening and the formation of off-flavor. The deconstruction of cell membrane also provided the contact of PPO and polyphenolic compounds leading to flesh browning. The production of ethylene stimulated fruit respiration. Low temperature significantly inhibited fruit senescence process, therefore refrigeration is a key to postharvest storage of Cuiguan pear.