

Title Effect of calcium treatment on nanostructure of chelate-soluble pectin and physicochemical and textural properties of apricot fruits

Author Hui Liu, Fusheng Chen, Hongshun Yang, Yongzhi Yao, Xiangzhe Gong, Ying Xin and Changhe Ding

Citation Food Research International, Volume 42, Issue 8, October 2009, Pages 1131-1140

Keywords Firmness; Nanostructure; Atomic force microscopy (AFM); Apricot; Calcium

Abstract

The effects of calcium and storage time on physicochemical properties and nanostructure of chelate-soluble pectin (CSP) of apricots (*Prunus armeniaca* L.) at 0 °C were investigated. During the storage, the firmness did not change with the contents but consistent with the morphology changes of CSP, which were characterized by atomic force microscopy (AFM). The branching structures of CSP decreased, meanwhile, the frequencies of chains with small width (<35 nm) and lengths (<500 nm) of CSP chains increased, which showed more in the control group than in the 1% calcium treated group. Compared to the control and 3% calcium treated groups, treatment with 1% calcium delayed the changes of physicochemical properties and degradation of the depolymerization of CSP during the fruit softening. The results provided us with a way to investigate the quality indexes from structural studies of nanoscale.