

Title Effect of 1-methylcyclopropene and/or chitosan coating treatments on storage life and quality maintenance of Indian jujube fruit

Author Zhong Qiuping and Xia Wenshui

Citation LWT - Food Science and Technology, Volume 40, Issue 3 , April 2007, Pages 404-411

Keywords Indian jujube fruit; 1-Methylcyclopropene; Chitosan; Coating; Storage life; Quality maintenance

### Abstract

Indian jujube (*Ziziphhus mauritina*, cv. 'Cuimi') fruits were harvested at stage of mature-green and then treated with 1-methylcyclopropene (1-MCP) at two doses (0 and 600  $\text{nl l}^{-1}$ ) for 12 h at room temperature. Half of the fruits were coated with 1.5 g/100 ml of chitosan (CTS) solution after 1-MCP treatment and subsequently stored at room temperature and 80–90% relative humidity (RH). Results indicated that 600  $\text{nl l}^{-1}$  of 1-MCP, 1.5 g/100 ml of CTS or their combination were effective in terms of senescence inhibition during storage and compared to control, the storage life was extended by 7, 5 and 8 d, respectively. Fruits treated with the combination of 1-MCP and CTS coating showed better retention of chlorophyll content, total soluble solids, ascorbic acid and fruit firmness, delayed climacteric ethylene evolution and respiration rate, reduced stem-end rots incidence, decreased PG and LOX activities than those with other treatments. Coating alone reduced weight loss and stem-end rots incidence. It delayed the declining firmness and the onset of climacteric ethylene production and respiration rate, but did not influence the peak levels of ethylene and respiration rates. The treatment with only 1-MCP delayed the degreening process and suppressed PG and LOX activities through 10 d at room temperature. The results showed that the treatment with the combination of 1-MCP and CTS coating improved greatly the storage life extension and quality maintenance of Indian jujube fruit at room temperature storage.