

Title Effects of nitric oxide fumigation on phenolic metabolism of postharvest Chinese winter jujube (*Zizyphus jujuba* Mill. cv. Dongzao) in relation to fruit quality

Author Shuhua Zhu, Lina Sun and Jie Zhou

Citation LWT - Food Science and Technology, Volume 42, Issue 5, June 2009, Pages 1009-1014

Keywords Chinese winter jujube (*Zizyphus jujuba* Mill. cv. Dongzao); Nitric oxide; Phenolic metabolism; Quality

Abstract

The effect of nitric oxide fumigation on phenolic metabolism of harvested Chinese winter jujube in relation to the fruit quality was investigated. The fruits were fumigated for 3 h with NO (0, 10, 20 and 30 $\mu\text{l/l}$) then stored at 22 °C and RH 95%. Changes in color, phenol and anthocyanin levels in pericarp, activities of the related enzymes, and total soluble solids and vitamin C from mesocarp were measured. The results showed that treatment with 20 $\mu\text{l/l}$ NO significantly slowed the increase in red index, inhibited changes of polyphenol oxidase (PPO) and phenylalanine ammonia lyase (PAL) activities, maintained a low total anthocyanin content and a high total phenol content, and delayed the increase of soluble solids and decrease of vitamin C. Treatment with NO solution at less than 1 $\mu\text{mol/l}$ exhibited inhibitory effects on *in vitro* PPO and PAL activities in a dose-dependent manner.