Title Effect of nano-packing on preservation quality of Chinese jujube (*Ziziphus jujuba Mill.* var. *inermis (Bunge) Rehd*)

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Abstract

The effect of a novel nano-packing material on preservation quality of Chinese jujube (*Ziziphus jujuba Mill.* var. *inermis (Bunge) Rehd*) during room temperature storage was investigated. The nano-packing material with lower relative humidity, oxygen transmission rate and high longitudinal strength (2.05 g/m^2 24 h, 12.56 cm^3/m^2 24 h 0.1 MPa and 40.16 MPa, respectively) was synthesized by blending polyethylene with nano-powder (nano-Ag, kaolin, anatase TiO_2, rutile TiO_2). The results showed that the nano-packing material had a quite beneficial effect on physicochemical and sensory quality compared with normal packing material. After 12-day storage, fruit softening, weight loss, browning and climatic evolution of nano-packing were significantly inhibited. Meanwhile, the contents of titrable acid and ascorbic acid were decreased to 0.21%, 251 mg/100 g, for nano-packing and 0.15%, 198 mg/100 g, for normal packing; The contents of total soluble sugar, reducing sugar, total soluble solids and malondialdehyde were increased to 28.4%, 5.2%, 19.5% and 98.9 μmol/g for nano-packing and 30.0%, 6.3%, 23.1% and 149 μmol/g for normal packing. Therefore, the nano-packing could be applied for preservation of Chinese jujube to expand its shelf life and improve preservation quality.