Maintaining the postharvest quality and bioactive compounds of jujube (*Ziziphus jujuba* Mill. Cv. 'Li') fruit by applying 1-methylcyclopropene

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Abstract

The aim of this research was to determine the effects of 1-methylcyclopropene (1-MCP, 312.5, 625 and 1000 nl L^{-1}) on fruit quality and bioactive compounds of jujube (*Zizyphus jujuba* Mill. cv. 'Li') fruit during the cold storage [at 0 ± 0.5 °C and 90 ± 5% relative humidity (RH) for 60 days (d)]. Throughout the cold storage, decrease in weight and firmness losses and respiration rates were significantly delayed with 1-MCP treatments. At the end of the cold storage, firmness, L* and hue angle value of jujube fruit treated with 1000 nl L^{-1} 1-MCP were higher than the control and the other 1-MCP treatments. During the cold storage, titratable acidity, vitamin C, total phenolics, antioxidant activity (both DPPH and FRAP assay) and phenolic compounds of jujube fruit treated with 1-MCP were higher than the control fruit. At the end of the cold storage, 4-aminobenzoic acid, 4-hydroxybenzoic acid, caffeic acid, ferulic acid, protocatechuic acid, *p*-coumaric acid and rutin contents of jujube fruit were better maintained with 1-MCP treatments. It was concluded based on present findings that 1-MCP could be used as an effective strategy for delaying postharvest quality losses and maintaining phytochemical compounds in jujube fruit throughout the cold storage.