

**Title** Extension of shelf-life of apple fruit by 1-methylcyclopropene in combination with polyethylene bags

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#### **Abstract**

Apple fruits (*Malus domestica* Borkh.) cultivar “Soltani” is a kind of juicy apple which is grown widely in central part of Iran from long time ago and has very short shelf-life (ca. 1 week) and storage span and coming very early to the market around May and mostly used for juice making. Therefore, the effect of anti-ethylene compound 1-methylpropene in combination with polyethylene bags on the shelf-life of this cultivar was investigated. 1-MCP treatment delayed fruit softening and extended shelf-life in association with suppression of respiration. Apple fruit over ripening was delayed when exposed to 0.5-1  $\mu\text{l.l}^{-1}$  1-MCP for 24 h, and increasing concentrations of 1-MCP were generally more effective for longer periods of time. Similar results were obtained with fruit sealed in polyethylene bags (30  $\mu\text{m}$  thick) containing 1-MCP at various concentrations, but longer delay in softening was achieved. The greatest longevity of about 28 days was realized by packing fruit in sealed polyethylene bags with 1-MCP at either of 1 or 2  $\mu\text{l.l}^{-1}$ . Thus, application of 1-methylpropene in combination with the use of polyethylene bags can greatly extend the postharvest life of “Soltani” apple.