

Title Regulation of postharvest fruit ripening by innovative storage technology
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Abstract

Storage technology is mainly concerned with minimizing the deterioration in fresh produce by slowing down the evolution and action of ethylene, fruit respiration and the development of fruit diseases and disorders. In climacteric fruit like apple and pear, controlled atmosphere (CA) storage technology is used worldwide. Innovations in CA technology like dynamic controlled atmospheres (DCA) and/or use of the chemical ethylene inhibitor (1-MCP) are new tools for the enhancement and preservation of quality and health promoting components or to avoid physiological disorders in climacteric fruit. Dynamic CA, with a non destructive monitoring system based on the chlorophyll fluorescence measurement allows the use of oxygen atmospheres during storage that are close to the lowest tolerance limits for fruit without inducing excessive anaerobic metabolism. In contrast to other available technologies, 1-MCP has the potential to control ethylene action by blocking the ethylene receptors and thereby maintaining fruit quality, mainly fruit firmness, not only during storage but also during the marketing and shelf-life periods. CA conditions with increased CO₂ concentrations are used for improved keep-ability of soft fruit such as different kinds of berries or stone fruit like cherries or plums. Similar effects can be achieved when specific plastic films are used for modified atmosphere packaging (MAP). However, there remain many questions over how best to apply these new technologies to better meet consumer requirements.