Title Responses of 1-MCP application in plums stored under air and controlled atmospheres

Author A.M. Menniti, I. Donati and R. Gregori

Citation Postharvest Biology and Technology, Volume 39, Issue 3, March 2006, Pages 243-246

Keywords 1-Methylcyclopropene; Firmness; Colour; *Monilinia laxa*; Internal breakdown; Air and CA storage

Abstract

The potential of 1-MCP for controlling ripening in 'Angeleno' plum fruit under air and controlled atmosphere (CA) storage was explored, and the possibility that 1-MCP can inhibit development of brown rot caused by *Monilinia laxa* and internal breakdown in 'Fortune' and 'Angeleno' plums tested. After harvest, fruit were exposed to 300 and 500 nl l^{-1} (in 2003) and 500 nl l^{-1} 1-MCP (in 2004) at low temperatures (0–3 °C) for 24 h. After treatment the plums were stored in air at 0 °C and 'Angeleno' fruit were also stored in CA storage (1.8% O_2 + 2.5% CO_2). Following storage, fruit were kept at 20 °C. In 'Angeleno' fruit, 1-MCP was effective in delaying the loss of firmness and colour changes during holding at 20 °C. 1-MCP reduced brown rot in fruit stored in CA but no significant reduction was found in air storage. Internal breakdown, a major physiological storage disorder in plums, was inhibited by 1-MCP treatment. Furthermore, since 1-MCP applied in air storage showed better results than the control in CA conditions, an application of 1-MCP before air storage could be the best way to reduce the ripening process for short or medium storage periods (40 and 60 days). CA storage plus 1-MCP treatment could be used for long periods (80 days).