

Title Effects of 1-methylcyclopropene on ripening of ‘Larry Ann’, ‘Songold’ and ‘Suplumsix’ plums (*Prunus salicina* Lindell) during postharvest storage and shelf life

Author Belén Velardo, Mercedes Lozano, M. Josefa Bernalte, M. Concepcion, Cristina Pintado and Teresa Hernandez

Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey. 256 pages.

Keyword 1-MCP; plum; ripening

Abstract

The effects of 1-methylcyclopropene (1-MCP) on different products have been previously reported, taking into account parameters such as its concentration, assay temperature, cultivar, fruit ripening stage and packaging. However, these investigations have been carried out under laboratory conditions. Studies conducted on real situation are rarely reported. The aim of this work was to study the effect of 1-MCP on three plum cultivars when it is applied in real Fruit Company facilities. To achieve this goal, three plum cultivars ‘Larry Ann’, ‘Songold’ and ‘Suplumsix’ were treated with SmartFresh® (3.33% of 1-MCP) according to the commercial directions at 1°C for 24 hours. The untreated (control) and treated fruit was stored at 1 °C for 4 weeks, after this period fruit was stored at 20 ° C during 3, 7 and 11 days for shelf-life studies. At each sampling date, quality parameters were measured, namely, total soluble solids content (TSS), total acidity (TA), acceptability index (AI), firmness and skin and flesh colour, in order to evaluate the effects of 1-MCP on the fruit quality. 1-MCP reduced firmness losses on ‘Larry Ann’ and ‘Songold’ plum cultivars both during refrigerated storage and shelf-life. It had no effect on ‘Suplumsix’ texture, probably due to the low ethylene production of this cultivar. 1-MCP did not affect on TSS content and TA remained constant for the three cultivars. 1-MCP helped to maintain skin colour on ‘Larry Ann’ and ‘Songold’ up to 7 and 11 days of shelf-life, respectively. It had no effect on ‘Suplumsix’ skin colour, probably because colour development is an ethylene-independent phenomenon on this plum cultivar. 1-MCP maintained flesh colour of the three plum cultivars during refrigerated storage and shelf-life.