Title 1-Methylcyclopropene (1-MCP) pretreatment prevents bud and flower abscission in *Mokara* orchids

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Citation Abstracts of 7th International Postharvest Symposium 2012 (IPS2012). 25-29 June, 2012. Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia. 238 pages.

Keywords Mokara; abscission; ACC oxidase activity; ethylene production; 1-MCP

Abstract

Mokara 'Oriental Red' and 'Chao Praya Pink' cut orchids were treated for 6 h at 25°C with or without 1-MCP. Treated cut orchids were exposed to 800 ppm of 1-methylcyclopropane (1-MCP). Then all the samples were exposed to 1 ppm ethylene for 16 h and placed in sugar solution at 25 °C to follow abscission. It was observed that, in *Mokara* 'Oriental Red' cut orchids, 20-80% of the floral buds and 0-20% of the open flowers abscised within 1 week. However, in treated sample, the 1-MCP pretreatment largely prevented this abscission during vase life with all floral buds and all open flowers maintained in first week and abscised within the 2 weeks of treatment. In *Mokara* 'Chao Praya pink', the 1-MCP pretreatments also extended the vase life by prolonging their vase life from 14 days in control to 21 days in treated samples. Result also showed that 1-MCP treatment inhibited ethylene production of the cut flowers by lowering both ACC oxidase activity and ethylene concentration. In conclusion, cut orchids of *Mokara* 'Oriental Red' and *Mokara* 'Chao Praya Pink' had good response to 1-MCP pretreatment.