Title Rose flower longevity in response to ethylene and 1-methylcyclopropene (1-MCP)

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Abstract

The objectives of this work were to determine the ethylene sensibility of seven cut rose cultivars and also the best 1-MCP concentration and treatment period on their postharvest quality. The cultivars Grand Gala®, Versilia, Texas, Konfetti™, Tineke, Sandra and Vega, were exposed to 0, 1, 10, 100 or 1000 µl L^{-1} ethylene concentrations during a 12 h period. 'Grand Gala®' exhibited the highest ethylene sensitivity by decreasing its postharvest flower longevity, and 'Konfetti™' the most resistant cultivar to the ethylene effects. In order to evaluate the effects of 1-MCP, 'Grand Gala®' and 'Konfetti™' were exposed to 0, 0.1, 0.5, 1.0 or 1.5 g m^{-3} of Ethylbloc® during 3, 6 and 12 hour periods. The treatment 1.5 g m^{-3} of Ethylbloc® during 3 h increased the 'Grand Gala®' flower longevity to 7.2 days. At that concentration, the flower exhibited several opened petals and estimated maximum leaf longevity of 5.1 days. At that same treatment 'Konfetti™' exhibited flower and leaf longevity of 12.1 and 10.8 days, respectively. 'Konfetti™' flowers completely opened at the treatment 1.5 g m^{-3} of Ethylbloc® during 12 h.