Title 1-MCP improves postharvest quality of *Begonia* × *hiemalis*

Authors Y.J. Kim, S. Kwon, K.S. Kim

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Abstract

Elatior begonia (*Begonia* × *hiemalis*) is considered as an ethylene sensitive plant. Transportation circumstances produce ethylene and accelerate the abscission of flower buds and open flowers, yellowing and abscission of leaves, thus reduce display life in begonia. We performed an experiment to determine the main stress factor during transportation and the effects of 1-MCP using three concentrations (0, 5, 25, and 125 nl L^{-1}), and two treatment durations (0, 6, and 12 hr) on 'Blitz' and 'Carneval' begonia. Transportation conditions in simulated export container with darkness, vibration with continuous shaking (150 ± 20 RPM) on a rotary lab shaker, and low temperature (12°C) were held for 4 days. After simulated shipment and placement in an interior environment, a considerable percentage of flower buds and flowers abscised, which could be attributed to elevated ethylene concentrations inside the boxes. All levels of chemical protected the display life of plants, however 1-MCP was the most effective at concentrations of 125 nl L^{-1}/12 hr for 'Blitz' and 25 nl L^{-1}/12 hr for 'Carneval'. Thus, 1-MCP pre-treatment prior to packing begonia for shipment is recommended to increase the length of display life and to reduce abscission of open flowers and floral buds.