

Title Calcium and 1-methylcyclopropene delay desiccation of *Lupinus havardii* cut racemes.
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Abstract

Lupinus havardii Wats. is a promising new specialty cut flower crop, but data on its greenhouse culture and management are limited. Two experiments investigated senescence-delaying activity of preharvest Ca fertilization and postharvest preconditioning with 1-MCP on *L. havardii* 'Texas Sapphire' cut flower stems (racemes). In the first study, Ca (as CaCl₂) was added to the nutrient culture solution at concentrations of 0, 2.5, 5.0, and 10.0 mM for 88 days in a greenhouse. Additional CaCl₂ supply did not affect the total number of racemes produced per plant, the average number of flowers per raceme, or the retention of individual flowers on cut racemes over a 7-day vase period. However, Ca concentration in cut raceme tissues, ranging from 5.3 to 7.6 mg.g⁻¹ dry weight, increased linearly with increasing Ca concentration in the nutrient solution, which was accompanied by a linear increase in average fresh weight retention per raceme and individual mature flowers (up to 7% above controls) during the 7-day vase period. In the second study under similar plant culture and vase conditions, 1-MCP applied at harvest resulted in an average fresh weight retention increase of 9% above controls during 7 days in the vase. Equivalent levels of desiccation in control racemes (loss in fresh weight retention) were delayed by 1.5 to 3 days in racemes with the highest Ca concentrations and those that had been preconditioned with 1-MCP. In view of the physiological significance of desiccation in cut flower quality loss, preharvest Ca fertilization and postharvest 1-MCP preconditioning may be useful techniques for delaying senescence and maintaining vase quality of cut *L. havardii* racemes. Chemical name used: 1-methylcyclopropene (1-MCP).