

Title Variation in ethylene-induced postharvest flower abscission responses among *Chamelaucium* Desf. (Myrtaceae) genotypes

Author Andrew J. Macnish, Donald E. Irving, Daryl C. Joyce, Vasanthe Vithanage, Alan H. Wearing and Allan T. Lisle

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Abstract

Postharvest flower abscission is an ethylene-mediated process that can reduce the marketability of cut *Chamelaucium* Desf. (Myrtaceae) flowers. The sensitivity of 51 *Chamelaucium* cut flower genotypes to ethylene was evaluated. Sensitivity varied among genotypes both between and within different species and crosses. *Chamelaucium uncinatum* × *Chamelaucium micranthum* cv. 'Sweet Georgia' and *C. uncinatum* cvv. 'Early Nir', 'Paddy's Late', 'Purple Pride', 'CWA Pink' and 'Early Hard' flowers were highly sensitive to ethylene. These genotypes shed 10% of their flowers in response to a 12 h treatment with $<0.01 \mu\text{l l}^{-1}$ ethylene at 20 °C. In contrast, *C. megalopetalum* 'Winter White' and 'Iceberg' flowers were insensitive to ethylene even at $100 \mu\text{l l}^{-1}$ for 12 h at 20 °C. Sensitivity to ethylene varied between harvests during the flowering season and for the same genotypes harvested from different farms. Sensitivity of *C. uncinatum* cv. 'Purple Pride' flowers to treatment with $1 \mu\text{l l}^{-1}$ ethylene also decreased towards the end of vase life in association with slight dehydration. Variation in ethylene-induced abscission responses highlights the need to screen flowers from multiple harvests and varying growing conditions when assessing ethylene sensitivity. Screening genotypes for ethylene sensitivity should facilitate selection of *Chamelaucium* species with greater durability for export handling.