

Title Vase life and root propagation of Geraldton wax (*Chamelaucium* spp.) cut flowers treated with glyphosate

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Citation Horticulture, Environment, and Biotechnology, 51(6) p. 545-550, 2010.

Keywords Hybrids; Grain legumes; Immersion

Abstract

Glyphosate [N-(phosphonomethyl)glycine] as RoundupV₂ (360 g • L⁻¹ a.i.) can render cuttings taken from cut flowers inert and unable to be propagated. It may also affect other plant physiological processes such as the vase life. In this study the effects of glyphosate on vase life and root propagation of cutting taken from cut flowers of Geraldton wax varieties 'Purple Pride' (*Chamelaucium uncinatum*), and 'Bridal Pearl' and 'Albany Pearl' (*C. uncinatum* × *C. megalopetalum* hybrids) were investigated. Cuttings of 'Purple Pride' pulsed in a 0.1% RoundupV₂ (0.36 g • L⁻¹ glyphosate) solution for 20 minutes failed to produce roots and were dry within 28 days; leaf vase-life also increased by three days with no adverse effect on flower vase life, normally evidenced by accelerated senescence and petal closure. Pulsing in a 1% RoundupV₂ (3.6 g • L⁻¹ glyphosate) or 10% RoundupV₂ (36 g • L⁻¹ glyphosate) solution for 20 minutes increased flower vase life by 3 to 5 days. Pulsing in RoundupV₂ solutions for longer durations at these concentrations did not decrease flower vase life below the control, but leaf vase life was reduced from 10 days (control) to between 4 (1% RoundupV₂ 120 minutes) and 7 days (10% RoundupV₂ for 60 minutes). A similar result was also found for 'Bridal Pearl' except that there was no improvement in flower vase life following a 20 minute pulse in a 0.1% RoundupV₂ solution. No roots occurred in cuttings taken from flowering stems of 'Albany Pearl' pulsed in a 0.1% RoundupV₂ solution for 20 minutes at 20°C or immersed in a 0.25% RoundupV₂ solution for one minute. There was also no reduction in vase life of flowers and leaves of sprigs taken from stems pulsed or immersed in these RoundupV₂ solutions. A protocol using a 0.1% RoundupV₂ solution as a 20 minute pulse or a stronger 0.25% RoundupV₂ solution as a 1-minute immersion should provide an effective postharvest treatment to prevent propagation of cuttings taken from Geraldton wax cut flowers.