Title Evaluation of pre-harvest applications of host defence elicitors against *Botrytis* infecting waxflower postharvest

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Abstract

Known host defence elicitors [e.g., methyl jasmonate (MeJA), benzothiadiazole (BTH), silicon (Si)] have demonstrated efficacy against fungal pathogens of various plant species. *Botrytis cinerea* causes flower abscission and grey mould disease on harvested Geraldton waxflower *(Chamelaucium uncinatum).* The efficacy of these elicitors against Botrytis on waxflower was evaluated. They were sprayed separately onto field-grown plants of cvs. Mullering Brook and My Sweet Sixteen at various concentrations (0, 500, 750, 1000 µM MeJA; 0, 50, 100, 150 mg BTH/L; 0, 500, 1000, 1500 mg $Si0_2$/L) and timings (once at 10 and 6 d before harvest or twice at 10 + 5 d and 6 + 3 d before harvest for the two cvv, respectively) of application. Harvested flower stems were either left uninoculated or inoculated with *Botrytis* spores. Disease severity and flower fall were recorded during subsequent incubation at 20°C and 95-100% RH. Stem vase life, relative fresh weight and vase water usage were also recorded during vase life evaluation at 20°C. BTH and Si treatments generally did not reduce either grey mould disease severity or flower abscission on either cultivar. Similarly, MeJA had no significant ($P>0.05$) effects on disease severity on Mullering Brook. However, pre-harvest spray treatments with MeJA at 500 and 750 µM significantly ($P<0.05$), but only slightly, reduced *Botrytis* on My Sweet Sixteen. No elicitor treatment reduced flower fall on either cultivar. Moreover, pre-harvest spray applications of MeJA, BTH and Si had little or no positive effects on cut-flower stem vase life, relative fresh weight and water usage.