

Title The influence of relative humidity on disease caused by *Botrytis cinerea* in non-harvested versus harvested waxflower flowers

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Abstract

Waxflower (*Chamelaucium*) is an Australian native plant cultivated for cut flowers. The major problem during postharvest handling and transport of cut waxflower stems is floral abscission caused by *Botrytis cinerea*. To investigate infection of waxflower flowers by this fungal pathogen, experiments were conducted encompassing various environmental conditions in the laboratory, greenhouse and field with two waxflower cvs. Mullering Brook and My Sweet Sixteen. Under laboratory conditions at 20°C and >95% RH in moistened bags, flowers of both cultivars either harvested or non-harvested showed similar susceptibility to *B. cinerea*. For inoculated and non-inoculated sprigs at 11 days after treatment, disease incidence on cvs. Mullering Brook and My Sweet Sixteen flowers ranged between 99.0–99.2% and 88.4–88.9%, respectively. Corresponding floral abscission ranges were 98.5–100% and 88.4–92.9%, respectively. Under greenhouse conditions and >95% RH, floral abscission ranges for inoculated flowers of both cultivars were 69.1–71.1% and 46.0–73.0%, respectively. Corresponding disease incidence ranges were 54.9–55.8% and 28.8–43.4%, respectively. Under field conditions and >95% RH, cv. My Sweet Sixteen flowers were more resistant to *B. cinerea* infection (3.0–3.1% in year 1; 0.9–2.0% in year 2) than were cv. Mullering Brook flowers (33.1–51.9% in year 1; 44.0–57.1% in year 2). Under all experimental conditions, inoculated flowers that were not covered with moistened bags showed significantly ($P < 0.05$) lower levels of disease incidence (0–11.9%) and floral abscission (2.4–37.8%). This observation is consistent with quiescence of the fungus in the field, and activation of infection by favourable temperature and humidity conditions after harvest leading to floral abscission.

<http://www.springerlink.com/content/h41468rh202411w7/fulltext.pdf>