

Postharvest physiology of cut *Gardenia jasminoides* flowers

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Abstract

We investigated the postharvest physiology of *Gardenia jasminoides*, and a range of postharvest treatments that might permit its use as a cut flower. The effects of different vase solution treatments, containing a range of biocides, acidulants, carbohydrate sources and/or growth regulators on the postharvest performance of cut gardenia flowers were studied by measuring water uptake (WU), water loss (WL) and relative fresh weight (RFW) of the flowers during vase life. In deionized (DI) water, gardenia flowers wilted after 2–3 days. Pulse treatment with silver thiosulfate (STS) to inhibit ethylene responses had no effect on vase life. However, abscisic acid (ABA) treatment increased vase life to 5 days by reducing WL and maintaining RFW. Including a cytokinin, benzyl adenine (BA), in the vase solution was the most effective plant growth regulator treatment, doubling vase life to 5.5 days. Vase solutions containing a commercial flower preservative, or combining citric acid, sucrose and aluminum sulfate also doubled the vase life of gardenia flowers. NaOCl in the vase solution provided little benefit, but acidification with aluminum sulfate (AS) or citric acid (CA) increased initial WU and extended vase life. The results suggest that improving water uptake is important for extending the vase life of cut gardenia flowers, and that acidification of the vase solution is an effective tool.