

Title The effects of gibberellin₄₊₇ on the vase life and flower quality of *Alstroemeria* cut flowers

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Abstract

Leaf yellowing is a major problem in *Alstroemeria* and absence of leaf senescence symptoms is an important quality attribute. Two *Alstroemeria* cultivars ‘Yellow King’ and ‘Marina’ were sourced from a commercial farm and harvested when sepals began to reflex. Stems were re-cut under water and kept in vase solutions of gibberellin A₄₊₇ (0, 2.5, 5.0, 7.5, 10.0, 12.5 or 15.0 mg l⁻¹ [Provide^r]). Treatments and cultivars were combined in a factorial fashion and arranged in a completely randomised design. Application of GA₄₊₇ in the holding solution at 2.5–10.0 mg l⁻¹ significantly delayed the onset of leaf senescence by around 7 days and significantly increased days to 50% petal fall by ca. 2 days. Additionally, these GA₄₊₇ concentrations resulted in higher retention of leaf nitrogen, leaf chlorophyll and also increased leaf water content, while reducing leaf dry weight, all relative to untreated controls. Cultivar ‘Yellow King’ had significantly longer vase life and a better retention of leaf quality than ‘Marina’. Our results suggest that a concentration of 10 mg l⁻¹ GA₄₊₇ can be used to prolong vase life, delay leaf senescence and enhance post-harvest quality of *Alstroemeria* cut flowers during their transport to market.