

Title Role of sugar in the vase solution on postharvest flower and leaf quality of Oriental lily 'Stargazer'.
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Abstract

Individual *Lilium* sp. 'Stargazer' flowers lasted about 4.5 to 5 days and weighed approx equal to 14 g. Addition of 2% sugar into the vase solution neither affected the longevity nor the size of the flowers but significantly enhanced anthocyanin content and, thus, the intensity of petal colour. Defoliation of Oriental lilies, the common practice of retail florists, did not affect the opening, longevity, and size of the open flowers, but did result in lighter-colour petals when placed in a solution without sugar. Addition of sugar to the vase solution counteracted the adverse effects of defoliation on petal colour. Sugar in the vase solution did not overcome the increased bud blasting and the reduced longevity and size of flowers induced by cold storage. However, it enabled more flowers to open fully, which, without sugar, remained only partially open. Excised bud experiments revealed that bud size of 6.1 cm and 7.0 cm were critical for opening of non-cold-stored and cold-stored buds, respectively. Unlike other cut flower species in which flowers for long-term storage or long-distance transport are harvested at a tighter-bud stage than those intended for the local market, in 'Stargazer', harvesting of stems where the smallest bud is >7.0 cm would be critical in reducing cold-storage-induced bud blasting.