

Title Storage performance of *Gloriosa superba* L. as a potential cut flower species in Europe
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Abstract

The effect of cold storage on the vase life and quality of freshly harvested cut flower stems of *Gloriosa superba* L. (Glory Lily/Climbing Lily) placed in Standard Vase Solution solutions was investigated. The vase life and fresh weight of *Gloriosa* inflorescences were significantly affected by storage temperature. A significant difference resulted between “dry” (inflorescences stored in polythene bags) and “wet” storage in a preservative solution ‘Standard Vase Solution’ (NaHCO₃ 125 mg/l, CaCl₂.2H₂O 99 mg/l, CuSO₄.5H₂O 1.2 mg/l introduced by van Meeteren et al., 1999) for flower quality features during vase life period. “Wet” storage (4 °C for 7 d) of fully open *Gloriosa* flowers markedly improved flower keeping quality. Chlorophyll fluorescence values (F_o , F_m and F_v) increased up to day 3 of vase period and then decreased over rest. Compared to other treatments, flowers kept at 4 °C (“wet” storage) for 7 days maintained a higher photosynthetic yield (0.76) during vase period. There is a significant decrease of chlorophyll fluorescence yield with increased storage temperature. The CIE $L^*a^*b^*$ colour system (McGuire, 1992) was used to assess the colour of petals and leaves with a Chroma meter. There is a positive influence on L^* (leaf lightness) and hue angle to longer vase life and fresh weight of flowers during vase period. However, there is no significant relationship of chroma value for vase life or fresh weight. Although visual quality could be maintained for up to 10 days in cold storage at 4 °C, flower quality decreased notably after 7 days. Our results indicate that “wet” cold storage at 4 °C for 7 days has the potential to be used for delaying inflorescence senescence, prolonging vase life and postharvest quality of *Gloriosa* cut flowers. *Gloriosa* is becoming an interesting floricultural crop in Europe. There is a potential to introduce it as a cut flower and as a potted plant to the international and European market.