

**Title** Postharvest conservation of cut stems of *Genista monosperma* 'Gabriella' in controlled environmental conditions and preservative solutions

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### Abstract

*Genista monosperma* Lam. is an ornamental woody species, widely cultivated in the Italian North-West coast for cut flower production during the winter season. The effectiveness of controlled atmospheres (CA) associated with different conservation solutions and methods on cut flowers of *G. monosperma* 'Gabriella' were investigated. Cut stems were stored in three different storage cells (2°C and 90% UR) with 21, 10 and 5% O<sub>2</sub>, respectively. In each storage cell, cut stems were submitted to the following pre-treatments: Chrysal Clear<sup>®</sup> solution (9.38 g/L), Chrysal RVB<sup>®</sup> pulsing (1 g/L), conservation in dry box with KmnO<sub>4</sub> (0.079 g/L), compared to the control in tap water. After one month, cut flowers were treated with solutions containing Tween 20<sup>®</sup> (500 µg/L) or GA<sub>3</sub> (5 µg/L), compared to the control in tap water. In cut flower stored at 21% O<sub>2</sub> an evident fresh weight loss was detectable. However, the pre-treatment with Chrysal Clear<sup>®</sup> solution enhanced the cut flower longevity and the fresh weight maintenance. In particular, this pre-treatment performed in atmospheres with 21 or 5% O<sub>2</sub> followed by the GA<sub>3</sub> treatment could extend the vase-life up to 6-7 days, compared to 1-3 days of the control. Concerning the storage in dry boxes, good results were obtained combining a low oxygen concentration (5-10%) with Tween 20<sup>®</sup> treatment (longevity of about 5 days). These preliminary results suggest the usefulness of storage in controlled atmospheres combined with different postharvest treatments.