

# Storage protocol for improving the postharvest performance of *Iris versicolor* cut scapes

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Acta Horticulturae 1060: 71-79. (2015)

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## Abstract

An experiment to determine the synergistic effect of cold treatment and protein synthesis inhibition of *Iris versicolor* (*Iridaceae*) cut scapes was developed to determine its effective postharvest storage protocol. Scapes were harvested at 8:00 h from healthy plants with the oldest bud of scapes at pencil stage (optimal harvest maturity stage, 1 day before anthesis). The 35 cm cut scapes were cool stored at 5°C for 72 h before or after pulse treatment with protein synthesis inhibitor, cycloheximide (CHI) at 0.1 mM concentration for 1 h. A set of untreated scapes wet stored at 5°C represented the control treatment. Treatment effects were evaluated by placing scapes in holding solutions containing distilled water (DW), or sucrose 0.1 M+8-HQS 100 mg/L (SUC+HQS), or sucrose 0.1 M+8-HQS 100 mg/L+CoCl<sub>2</sub> 0.1 mM (SUC+HQS+CoCl<sub>2</sub>) at room temperature (RT) under laboratory conditions. Pretreated scapes with CHI before 72 h wet storage at 5°C showed a significant enhancement of vase life by an increment of 3 days, sustained rate of blooming, higher floral diameter, soluble protein content and sugar fractions in petals as compared to control. Scapes pretreated with CHI, stored at 5°C and transferred to vases containing (SUC+HQS+CoCl<sub>2</sub>) exhibited a considerable enhancement in vase life compared to scapes transferred to (DW) or (SUC+HQS). The vase solutions containing (SUC+HQS) or (SUC+HQS+CoCl<sub>2</sub>) resulted in the maintenance of higher fresh and dry mass of flowers. The present study suggests that pulse treatment of *Iris versicolor* cut scapes with 0.1 mM CHI before cool wet storage at 5°C for 72 h, followed by transfer to holding solution containing (SUC+HQS+CoCl<sub>2</sub>) can be used as an effective postharvest storage system to bring out the transportation within 72 h, without reducing the vase life. The study holds potential for proteomics related aspects pertaining to biotechnological approach for postharvest life improvement of ornamentals.