Title Treatment with thidiazuron improves opening and vase life of iris flowers

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Abstract

The marketability of Dutch iris (*Iris* × *hollandica*) cut flowers is limited by their short display life and frequent failure to open fully. We tested the ability of thidiazuron (TDZ), a phenyl-urea compound with cytokinin-like activity, to improve iris flower opening and longevity. A postharvest pulse with 0.2–1 mM TDZ for 6–24 h at 0 or 20 °C extended the vase life of flowers by up to 1.5 d relative to control (0 mM TDZ) stems in water. TDZ treatment also stimulated growth of the pedicel and ovary by up to 2.5 cm that, in turn, led to more complete opening of flowers. Inclusion of 1 mM gibberellic acid (GA_3) in the TDZ pulsing solution did not extend vase life further but did increase flower shoot elongation by an additional 1.0 cm. Provision of 20% sucrose with the TDZ plus GA_3 treatment had an additive effect, increasing vase life and shoot growth by a further 0.8 d and 1.0 cm, respectively. Pulsing stems with this combined treatment prior to storing flowers dry for 14 d at 0 °C provided maximum flower opening and display life after storage. Treatment with 0.5 mM TDZ stimulated a significant increase in ethylene production by flowers during their opening.