Selenium enhances the vase life of *Lilium longiflorum* cut flower by regulating postharvest physiological characteristics

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Abstract

In this paper, we studied the role of sodium selenite (Na_2SeO_3) in improving cut flower's vase life of *Lilium longiflorum*. Experimental findings displayed that Na_2SeO_3 remarkably enhanced the activities of superoxide dismutase (SOD), peroxidase (POD), catalase (CAT), ascorbate peroxidase (APX), glutathione reductase (GR), dehydroascorbate reductase (DHAR) and monodehydroascorbate reductase (MDHAR), improved relative water content (RWC) and the levels of soluble sugar, proline and soluble protein in cut flower's petals of *Lilium longiflorum*, compared with control. Meanwhile, Na_2SeO_3 remarkably decreased the production of malondialdehyde (MDA) and hydrogen peroxide (H_2O_2), compared with control. Furthermore, Na_2SeO_3 remarkably improved the vase life of L. *longiflorum* cut flower, compared with control. These findings suggested that Na_2SeO_3 improved the vase life by regulating the antioxidant system and osmotic adjustment ability of L. *longiflorum* cut flower.