

Effects of neodymium on the vase life and physiological characteristics of *Lilium Casa Blanca* petals

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Abstract

In this paper, we investigated the effects of neodymium trichloride (NdCl_3) on the vase life and physiological characteristics of the petals of *Lilium Casa Blanca* cut flower. The results showed that NdCl_3 markedly enhanced the activities of antioxidant enzymes ascorbate peroxidase (APX), superoxide dismutase (SOD), catalase (CAT), peroxidase (POD), glutathione reductase (GR) and glutathione peroxidase (GPX), the contents of reduced ascorbate (AsA), reduced glutathione (GSH) and osmotic adjustment substances soluble sugar, proline and soluble protein, the ratios of AsA/DHA and GSH/GSSG, as well as the relative water content (RWC) in the petals, compared with control. However, NdCl_3 markedly reduced malondialdehyde (MDA) content and electrolyte leakage (EL) in the petals, compared with control. Meanwhile, NdCl_3 markedly increased the vase life, compared with control. Above results indicated that NdCl_3 prolonged the vase life of *Lilium Casa Blanca* cut flower by enhancing the antioxidant capacity and water-holding ability of the petals.