

Title Effect of nitric oxide and thidiazuron on extending postharvest life of carnation (*Dianthus caryophyllus* cv. Nelson) cut flowers

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Abstract

It has been shown that nitric oxide (NO*) as a diffusible multifunctional plant signal molecule, extend the postharvest life of a range of flowers. In the present study, we evaluated the effect of nitric oxide generating compound (sodium nitroprusside, SNP) and thidiazuron as an ethylene biosynthesis inhibitor on vase life and some qualitative characteristics (e.g., appearance, chlorophyll content, flower diameter) of cut carnations. Cut flowers were treated for 48 hours with sodium nitroprusside as NO° donor at four concentrations (0, 20, 50 and 100µM) alone and in combination with thidiazuron at two concentrations (0 and 50 µM). Cut flowers then transferred into distilled water and also the solution containing sucrose (4%) and 8-hydroxyquinoline sulfate (300 ppm). The results showed that the effect of application of preservative solution after pulsing on vase life, appearance and flower diameter are significant at P> 1% level, compared to water. Treatment with 100 µM sodium nitroprusside resulted in improved vase life and appearance with inhibition of ethylene biosynthesis by nitric oxide and 50 µM SNP in combinatin with thidiazuron were effective in maintaining the chlorophyll content and flowers diameter of cut carnation flowers.