

Salicylic acid retards senescence and makes flowers last longer in *Nicotiana plumbaginifolia* (Viv)

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Plant Physiology Reports 26: 128–136. (2021)

Abstract

Salicylic acid (SA) is known to be a plant signalling molecule that plays an important role in growth, development and defence response in plants. During the present study the effect of exogenous application of SA on the senescence of cut *Nicotiana plumbaginifolia* flowers was investigated. The buds were subjected to different concentrations (0.05, 0.1, 0.15, 0.20 and 0.25 mM) of SA. A separate set of flowers kept in distilled water designated the control. The flowers treated with various concentrations of SA resulted in improved flower longevity besides maintaining higher membrane stability index, soluble proteins and sugar fractions. SA treatment decreased the α -amino acid, total phenol content, lipid peroxidase and lipoxygenase activity. The flowers treated with SA showed a significant increase in activity of antioxidant enzymes like superoxide dismutase, catalase and ascorbate peroxidase. Among various concentrations used, 0.05 mM SA was found to be most effective in enhancing the flower longevity. Thus, exogenous SA could maintain membrane integrity by increasing antioxidant system activity, thereby retarding the senescence of cut *N. plumbaginifolia* flowers.