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RESEARCH ARTICLE :

Allevation of oxidative stress and increase of vase life by exogenous proline in rose (*Rosa hybrida* L. cv. 'MINUPARLE')

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SUMMARY : The effect of exogenous proline on vase-life of cv. 'MINUPARLE' rose (*Rosa hybrida* L.) was studied. Application of 5mM proline enhanced the vase life of 'Minuparle' roses by 3.5 days by suppressing the oxidative stress. The increase in vase life was associated with higher concentration of endogenous proline and lower levels of superoxide radicals (O_2^-). Proline treated flowers showed was lowest production of O_2^- 1.2-fold (Stage-2), 1.6-fold (Stage-3), and 1.7-fold decline at Stage-4 of flower senescence in comparison to control. Various iso-forms of superoxide dismutase (SOD) were found in senescing rose petals in all the treatments. Proline dehydrogenase (PDH) activity was high in proline treated flowers upto Stage-6 of flower senescence. Higher energy production from proline catabolism helped in delaying the ageing process of flower petals. Reciprocal relationship was observed between GSSG and GSH/GSSG Ratio and higher GSH/GSSG ratios were observed upto Stage-6 in petal of treated flowers in comparisons to control.

KEY WORDS :
Oxidative stress, Rose, Exogenous proline

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