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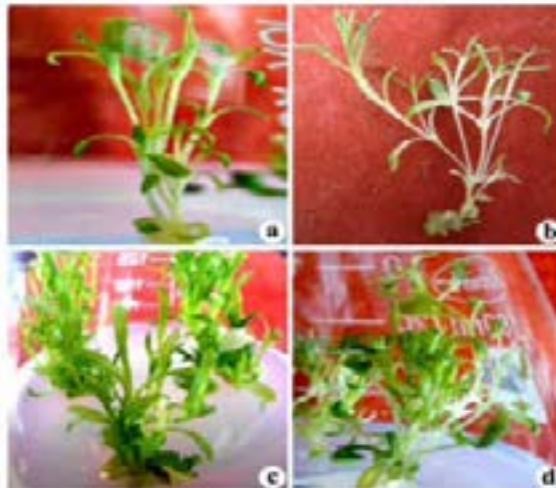
# AGRICULTURE & HORTICULTURE

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## Mineral manipulation and antioxidative studies in carnation - *Dianthus caryophyllus* L

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The effect of ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ) on shoot bud induction and proliferation from nodal explants of *Dianthus caryophyllus* L. was investigated. Shoot buds were induced on MS medium supplemented with  $2.2 \mu\text{M}$  BAP and  $2.7 \mu\text{M}$  NAA. The induced shoot buds were sub-cultured on medium with same hormonal composition for their proliferation. Both shoot bud induction and proliferation media were supplemented with different levels of  $\text{NH}_4\text{NO}_3$  (0, 5.15, 10.3, 20.61, 41.20 mM).  $\text{NH}_4\text{NO}_3$  highly influenced the shoot bud formation and their subsequent proliferation. In the present investigation,  $\text{NH}_4\text{NO}_3$  at one-fourth of MS level was found to be beneficial for controlling the hyperhydricity of regenerated shoots whereas the number of shoots was comparable to the control cultures. The MS or higher levels of  $\text{NH}_4\text{NO}_3$  were observed to suppress healthy morphogenesis and resulted in increased hyperhydricity. The physiological disorder of hyperhydricity, commonly observed in carnation micro-propagation, was also controlled with 100% efficiency by reducing  $\text{NH}_4\text{NO}_3$  at one-fourth of MS level. Antioxidant enzyme activity was minimum in normal and healthy shoots. The activity increased with increase in the number of hyperhydric shoots.



### Biography

Smita Purohit is presently working as a Senior Assistant Professor and Head in The IIS University, Jaipur, India. She has an expertise in the field of Plant Tissue Culture, Stress Physiology, Molecular Biology and Crop Science. The present research article signifies the effect of *in vitro* morphogenesis on antioxidative enzymes like SOD, CAT. These antioxidative enzyme systems provide crucial protection against oxidative stress imposed by reactive oxygen species.

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