

6th Global Summit on Plant Science

October 29-30, 2018 | Valencia, Spain

Influencing regeneration potential in *Dianthus caryophyllus* L. (carnation) by manipulation of culture medium

Smita Purohit
The IIS University, India

Growth and morphogenesis of plant tissues under *in vitro* conditions are largely influenced by the composition of the culture media. Therefore, in this study, effects of copper sulphate in regeneration medium of *Dianthus caryophyllus* were examined. Nodal segments were cultured on MS medium supplemented with BAP (0.5 mg l⁻¹) + NAA (0.5 mg l⁻¹) and different levels of CuSO₄ (0, 0.1*, 1, 2, 3, 5, 10 μM). The levels of CuSO₄ in the induction as well as proliferation medium highly influenced the shoot regeneration. Highest number of shoot buds per explant was obtained when the concentration of CuSO₄ was increased two times the normal MS level. The effect of various antioxidant enzyme activities (catalase, SOD and peroxidase) was studied on different levels of copper sulphate. It was found that the enzyme activities increased with the increasing levels of copper sulphate and also increased with increased morphogenic competence of the *in vitro* cultures. The enzyme activities showed a decline where the number of shoot buds was less. Therefore, this confirms a relationship between the organogenesis and stress levels in the *in vitro* cultures.

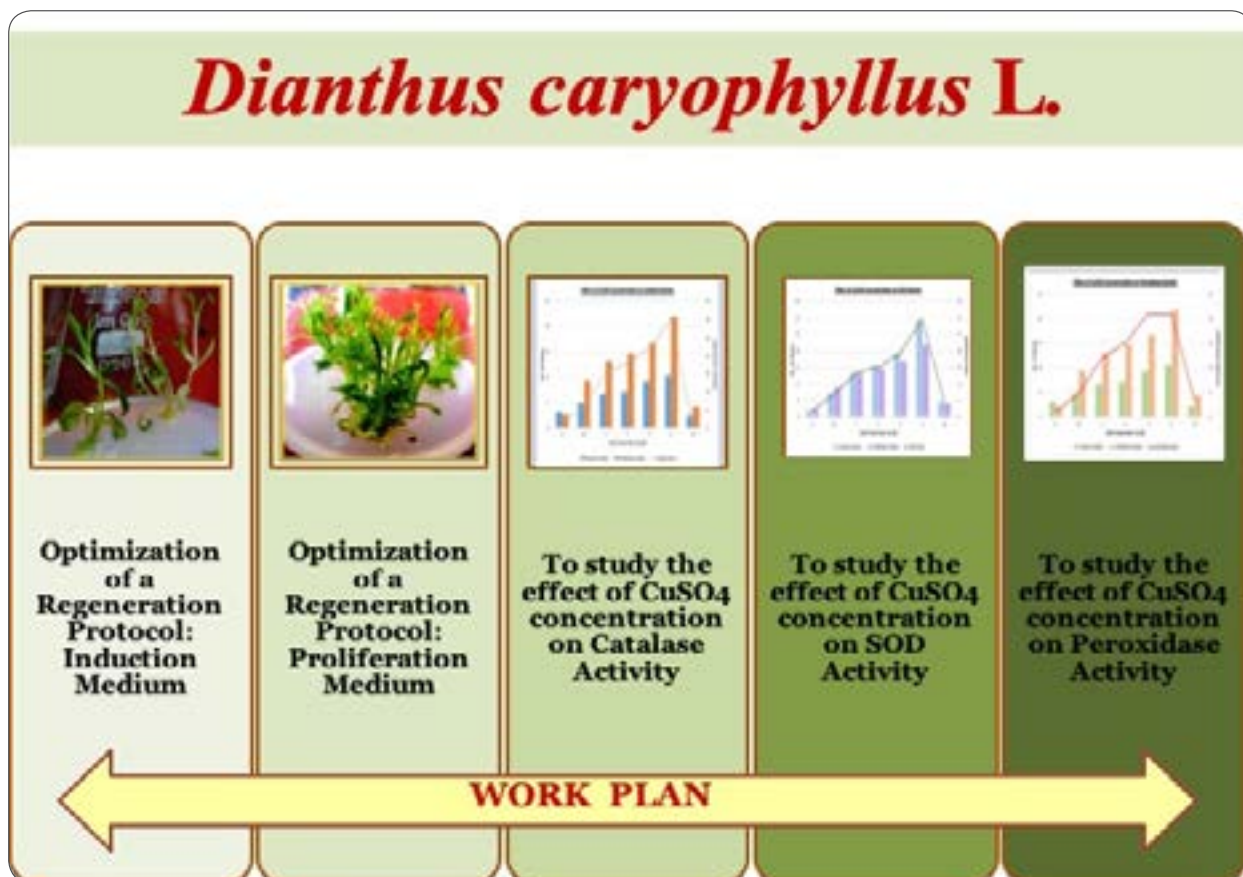


Figure 1: Study of effect of CuSO₄ concentration of different enzyme activities.

6th Global Summit on Plant Science

October 29-30, 2018 | Valencia, Spain

Recent Publications

1. Purohit S and Agarwal M (2017) Mineral manipulation and Antioxidative studies in Carnation - *Dianthus caryophyllus* L. International Journal of Crop Science and Technology 3:1-8.
2. Yadav A, Joshi A, Kothari S L, Kachhwaha S and Purohit S (2017) Medicinal, nutritional and industrial applications of Salvia species: A revisit. International Journal of Pharmaceutical Science Review & Research 43(2):27-37
3. Agarwal M and Purohit S (2013) Overcoming hyperhydricity and profiling the affected proteins in micropropagated carnation. IIS University Journal of Science and Technology 2(1):32-37.
4. Agarwal M and Purohit S (2013) Changes in antioxidant enzymes activity during *in vitro* morphogenesis of carnation and the effect of antioxidants on plant regeneration. World Journal of Sciences and Technology 2(7):87-92
5. Purohit S and Kothari S L (2007) Direct somatic Embryogenesis from cotyledon and cotyledonary node explants in Bishop's weed- *Trachyspermum ammi* (L.) Sprague. *In vitro* cellular & developmental biology- Plant 43(2):154-158.

Biography

Smita Purohit, Associate Professor & Former Head, Department of Botany, The IIS University, Jaipur has her expertise in plant tissue culture, stress physiology, molecular biology, mineral manipulation and phytochemical studies. She has worked on various plant systems like *Cuminum cyminum*, *Dianthus caryophyllus*, *Cissus quadrangularis*, *Salvia hispanica* to name a few. She has also authored books in the field of Genetics and Plant Breeding and has supervised few doctoral and many MPhil candidates and has published many research papers in national and international journals of repute.

smita.purohit@gmail.com

Notes: