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Rapid clonal multiplication and conservation of *Origanum vulgare*: An aromatic and medicinal plant using apical buds and leaf by *in vitro* techniques

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Origanum vulgare L., a perennial herb belonging to the family Lamiaceae is cultivated for its leaves for extraction of essential oil. The oil of *Origanum*, obtained from all the aerial parts of the plant is used in high grade flavor preparations, perfumery, cosmetic and liquor industries. In order to meet the growing demand of its oil and herbage, *in vitro* techniques are being used as an alternative method for large scale multiplication and conservation. In the present investigation, *in vitro* apical buds were cultured on MS medium supplemented with BAP to induce multiple shoots. *In vitro* leaf explants were cultured on MS basal medium supplemented with BAP+2,4-D to induce callus which was sub cultured onto the same medium to obtain profuse callus. Callus was later cultured on shoot regenerating medium, MS+BAP+2,4-D to produce multiple shoots. Well developed multiple shoots developed roots on the same medium and the axenic plants were subjected to hardening. Regenerated plants were acclimatized which were transferred to soil with 80-90% of survival frequency. *In vitro* and *in vivo* leaves were subjected to phytochemical analysis for the determination of principle component. *In vivo* leaf and stem contains higher percentage of thymol and of methyl chavicol. The *in vitro* apical buds were used for synthetic seed production using sodium alginate and calcium chloride as matrix and complexing agent for encapsulation. Hardened multiple shoots obtained from apical bud, leaf callus and synthetic seeds serves as a source of ex situ conservation.

Biography

D Leelavathi is currently working as an Associate Professor in the Department of Botany at MES College, Bangalore. She has published 10 research papers, presented in various international and national journals/conferences and she is currently working on a minor research project funded by UGC. She has also presented a paper in 4th international conference on medicinal plants and herbal products held at John Hopkins University, USA, 2012.

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