

## **FIELD ESTABLISHMENT OF *IN VITRO* RAISED PLANTS OF *EPHEDRA GERARDIANA***

*Ephedra* is a seed bearing non flowering plants belonging to the highly evolved order of Gymnosperm, Ephedrales. The major active ingredients of *Ephedra* which impart medicinal property in it are alkaloids that constitute 0.5 to 2.5 % of total mass, and are referred to as ephedrine type alkaloids. Over exploitation due to its medicinal property has render it to endangered category.

Tissue culture techniques offer a suitable alternative to traditional methods of multiplication by resorting to micro-propagation and then re-introduction of plants into affected areas. The basal MS medium supplemented with different plant growth regulators as adjuvant have been used to embryo culture and nodal and internodal segment culture raised plantlets of *Ephedra gerardiana*. 20-25 days after rooting, plantlets were transferred to plastic pots containing autoclaved coarse sand and garden soil in equal proportions for transplantation, and irrigated with sterile tap water. Initially the plants were covered with a small plastic bag and chamber for 20-25 days for acclimatization. The plants thus produced were finally grown in glass house followed by soil beds in Forest Dept. Medicinal Plant Nursery, Deovan, Chakrata, Uttarakhand.

PI has successfully demonstrated the technology for micropropagation of *Ephedra gerardiana* from nodal explants and embryo followed by successful transfer to field (Fig.1).



## R & D Achievements

Uttarakhand State Council For Science & Technology

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*In-vitro* node culture, stages of rooting and different stages of transplantation in pots followed by glass house

