# *Strawberry Tissue Culture*

## INTRODUCTION

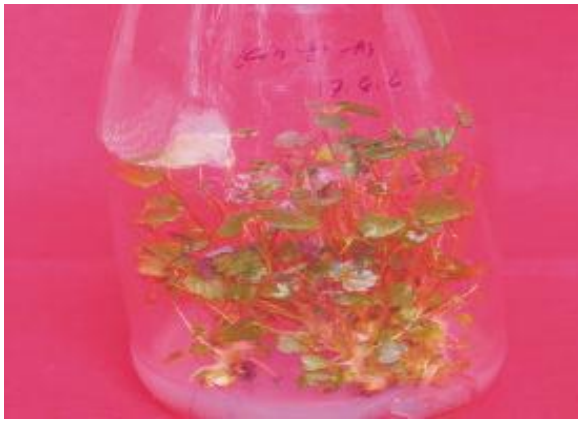
Strawberry (*Fragaria* x *ananassa* Duch.) is a natural hybrid of *Fragaria chiloensis* L. P. Mill. and *Fragaria virginiana* Duch. It is a perinnial, stoloniferous herb belongs to the Rosaceae family. Strawberries have traditionally been a popular delicious fruit for its flavour, taste, fresh use, freezing and processing. It contains relatively high quantities of ellagic acid, which has a wide range of biological activity. It is produced in 71 countries worldwide on 506000 acres. Production of propagules through runner has been reported to contribute 90% of total Dutch strawberry production, the product in Elsanta cultivars was found to be susceptible to several fungal diseases In the view of the potential commercial value, it is highly desirable to develop methods of rapid, efficient and large scale multiplication of *Fragaria* X *ananassa* Duch. through tissue culture.

## MATERIALS AND METHODS

- Fresh nodes from strawberry mature plants (Fig. 1A) were collected.
- Explants were washed under running tap water and then washed again thoroughly by adding a few drops of Tween-20.
- They were then surface sterilized in a 0.1% mercuric chloride for 5 min followed by rinsing them four times with double distilled water inside the Laminar Air flow chamber.

### Tissue Culture

Small nodal segments (0.5–1.0 cm) were cultured on MS I medium (half-strength Murashige
and Skoog salts and vitamins, 2 % sucrose, 1mg/l IAA, 0.6% agar pH 5.8) on which they will usually form shoots and roots. The cultures were incubated at 25 ± 2°C with 16 h photoperiod. Subcultures were done every 21 days interval.  After roots form and the explant is approximately one cm. tall, the meristem plant is transferred to a maintenance medium without growth hormones (Murashige and Skoog salts and vitamins, 3% sucrose, 0.2% Phytagel®, pH 5.8). The plants are transferred to fresh medium every four to eight weeks.

A   D

B   E

C   F

Fig. 1: Micropropagation of Strawberry from nodal segments. A. Nodal segments used as explants. B. Shoot proliferation on MS supplemented with 1.5 mg/l BA+0.1 mg/l KIN after 7 days of culture. C. Shoot proliferation on MS+1.5 mg/l BA+0.5 mh/l KIN after 20 days of culture. D. Shoot proliferation on MS+1.5 mg/l BA+0.5 mg/l KIN after 35 days. E. Rooted shoots on 1.0 mg/l IBA after 3 weeks of culture. D. Regenerated plantlets of strawberry in polybags after 20 days of transplantation