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In vitro multiplication of *Ficus benjamina* cv. STARLIGHT

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SUMMARY

Response of the axillary bud explants collected from *Ficus benjamina* Cv. Starlight was studied *in vitro.* M.S. basal medium supplemented with BAP 1.0 mg. Litre^{-1} was found to be the best for establishment of explants. Maximum number of multiple shoots were developed on MS+BAP(1.0 mg. Litre^{-1}) + Ademine Sulfato (50 mg. Litre^{-1}), while 1 mg. Litre^{-1} of NAA fortified with 1 mg. Litre^{-1} of charcoal resulted into profuse rooting. The best hardening treatments were T_2C_2 (Transferring the plantlets first to distilled water for 6 hours then to soilrite and then keeping under mist was found to enhance their survival.

Key words : Ficus, Micropropagation and Axilary bud.

One of the major areas in which plant biotechnology has begun to manifet its potential in India is Micropropagation with tissue culture [Bonghe *etal.* (1997), Del and Picazo (1992)]. The work on micropropagation of Ficus (*Ficus benjamina*) has been reported by Krisstian Sen (1990), Trujillo *etal.* (1994), Gabryszewska and Rumickl (1997), in *Ficus benjamina* L. The present investigation reports the response of axillary bud in *in vitro* culturing in Ficus.

MATERIALS AND METHODS

The present investigation was conducted during 1999-2000 in Plant Tissue Culture Laboratory, MSSCL, Akola. The experimental material comprised of Ficusplants cultivar Starlight. The *in vitro* propagation of Ficus was attempted by using different media treatments for establishment/initiation, development of multiple shoots, rooting and hardening.

The axillary bud 0.5-1 cm. Long were taken and treated with Tepol, and after through washing under tap water, they were surface sterilize with 0.1 per cent $HgCl_2$. These sterilized axillary buds after removing outer layer were established on MS medium (Murashige and Skoog, 1962) supplemented with different concentrations of cytokinin (BAP) and then in proliferation media (MS) supplemented with different concentrations of Cytokinin (BAP) alone and in combination with auxins, Adenine Sulphate for multiple shoots.

The pH of the medium was adjusted to 5.8 and was autoclaved at the pressure 1.06 kg/sq cm. For 20 minutes. The cultures were incubated at 25±2^{0}C under 16 hours light (2000 lux) and 8 hours darkness. The explants (buds) were sub cultured on the fresh medium 2-3 times to avoid the problem of phenolics in the medium. The observation were recorded on number of multiple shoot produced 30 days after inoculation

RESULTS AND DISCUSSION

The effects of different concentrations of cytokinin were tested on establishment medium. It was observed that optimum concentration of cytokinin (BAP) for establishment of aaxillary bud was MS + BAP 1.0 mg. Litre^{-1}. It was observed that low concentration of cytokinin (BAP) resulted into good establishment. Axillary bud seemed to have better survival than shoot tip and leaf segment.

Well established explant were inoculated on MS medium supplemented with different concentration of cytokinin alone or in combination with auxin and Adenine Sulphate for induction of multiple shoots from the established cultures. Maximum number of multiple shoots were observed when MS medium supplemented with BAP 1.0 mg. Litre^{-1} + Adenine Sulphate 50 mg litre^{-1}, as compared to shoot formation in MS medium supplemented with BAP alone or in combination with auxin (NAA). This may be

Table 1 : Effect of different concentration of cytokinin in establishment (%) medium.

Sr. No.	Treatment mg litre^{-1}	Establishment (%)	Growth
1	MS+BAP (0.5)	50	+
2	MS+BAP (1.0)	90	+++
3	MS+BAP (2.0)	85	+++
4	MS+BAP (3.0)	65	++

+ Poor growth, ++ Fair growth +++Good growth

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