REGENERATION IN LEAF CALLUS CULTURES OF *EUPHORBIA HIRTA* LINN

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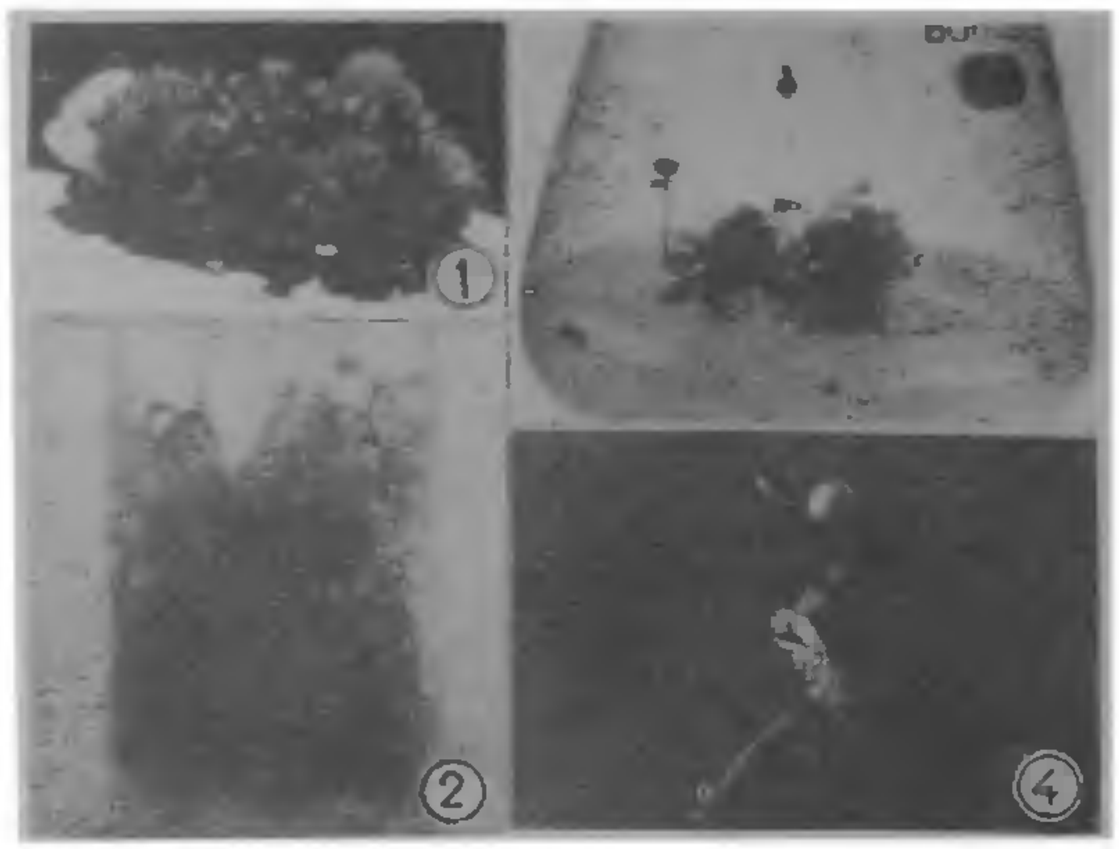
ORGANOGENESIS has been demonstrated in a number of economically important plants[1]. Genus *Euphorbia* is an important source of hydrocarbon production[2]. *Euphorbia hirta*, an annual herb is well known for its anticancerous property[3] and contains phenolics which minimize the aflotoxin elaboration of cereals[4]. In view of its great medicinal use[5], the present investigation was undertaken to find out the regenerative potentials of the leaves of *E. hirta* L.

Young leaves of naturally grown *E. hirta* were collected from Thiagarajar College campus. They were washed thoroughly with tap water and treated with 1% solution (v/v) of Cetavlon (a detergent) for 5 min. After several washings in distilled water, the leaves were surface-sterilized with 0.1% mercuric chloride for 5 min. Then the leaves were rinsed repeatedly in sterile distilled water. Discs were punched from the leaf lamina with sterile cork borer (10 mm dia) and inoculated on Murashige and Skoog's medium[6] (MS) containing 2% sucrose and 0.8% agar (Difco-Bacto). Various concentrations and combinations of NAA and BAP were used. Callus tissues were subcultured once in three weeks on fresh medium. Cultures were maintained at 27±2°C with 16 hr illumination (about 2000 lx). For each treatment at least 20 cultures were raised and all experiments were repeated for 5 times.

Callus proliferation was observed from the cut margin of the leaf explant cultured on MS medium supplemented with 1 mg/l NAA and 1 mg/l BAP, after 2 weeks. Chlorophyllous shoot forming (SF) and non-chlorophyllous non-shoot forming (NSF) calli were developed from the same explant (figure 1). Shoot buds differentiated from the SF callus, if transferred to MS medium containing various concentrations of BAP (0.5, 1.0, 2.0 and 3.0 mg/l) and 0.5 mg/l NAA in all. Greater number of shoots (15–22) developed from SF callus after 2–3 weeks in MS medium with 3.0 mg/l BAP (figure 2). Shoots were subcultured to MS medium supplemented with GA (2 mg/l) for elongation prior to rooting. Rooting of the shoots was achieved in the half-saturated MS medium containing 2 mg/l IAA only (figure 3). One week after transfer, the roots were emerged from the base of shoots with little callusing (figure 4).



Figures 1–4. **1.** Shoot forming (dark) and non-shoot forming (white) callus, **2.** Development of shoots from shoot forming callus. **3.** Induction of roots from shoots. **4.** Rooted plantlet.

The regeneration of *E. hirta* could be easily achieved from leaf explant and the technique could be exploited for biosynthesis of phenolic compounds.

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