of the leaves from polluted water bodies coupled with various inorganic minerals appeared to have resulted in an increased fecundity of the weevils.

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MULTIPLE SHOOT FORMATION IN EMBRYO CULTURE OF *SOLANUM MELONGENA*

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THE effectiveness of *in vitro* methods in improving crop plants makes them an attractive practical alternative to conventional techniques. For rapid *in vitro* multiplication of plants along with seedling explants, embryos too have been successfully used[1,2]. In *Solanum melongena*, a vegetable crop plant regeneration from callus[3–6], anthers[7,8] and seedling explant[9,10] was reported. This investigation outlines the formation of multiple shoots in embryo cultures of *S. melongena*, var. Pusa Purple Long (PPL) and further development into complete plantlets.

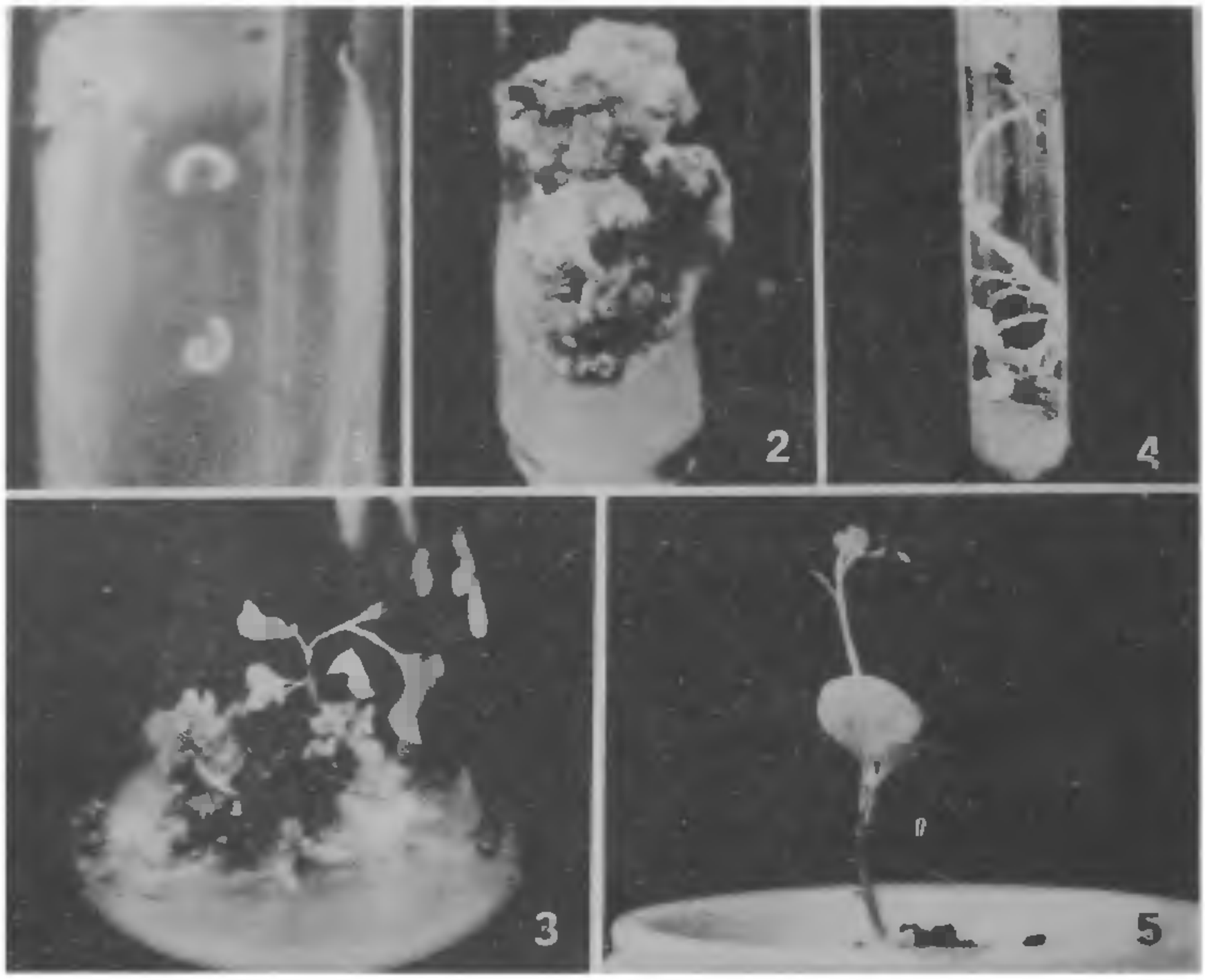
Wet seeds of *S. melongena* were surface-sterilized by 0.1% mercuric chloride for 5 min and washed repeatedly in sterilized distilled water. Excised embryos were cultured on Murashige and Skoog's (MS)[11] medium consisting of auxins and cytokinins. The pH of the medium was adjusted to 5.8 by 0.1% NaOH. All the cultures were kept under 16/8 photoperiod at 25 ± 2°C.

The growth and morphogenetic response of excised embryos (figure 1) to MS media supplemented with various growth regulators are represented in table 1. 2,4–D 0.5 mg/l in combination with Kn 1 mg/l or BAP 1 mg/l produced extensive, vigorous, friable, white-coloured callus all over the explant (figure 2), while it alone formed moderate callus. Root formation was predominant in MS media

Table 1 *Morphogenetic response of embryos from seeds of Solanum melongena to MS medium with various growth regulators*

Media (mg/l)	Morphogenetic response
MS + 2,4–D (1)	Callus
MS + NAA (1)	Callus + roots
MS + IAA (1)	Roots + single shoot
MS + Kn (1)	Callus + multiple shoots
MS + BAP (1)	Roots + multiple shoots*
MS + 2,4–D (0.5) + BAP (1)	Callus
MS + NAA (0.5) + BAP (1)	Callus + roots + single shoot
MS + IAA (0.5) + BAP (1)	Callus + roots + multiple shoots**
MS + 2,4–D (0.5) + Kn (1)	Callus
MS + NAA (0.5) + Kn (1)	Callus + single shoots

The data scored at the end of four weeks in culture of seven replicas, 2,4–D: Dichlorophenoxy acetic acid; NAA: Naphthalene acetic acid; IAA: Indole acetic acid; Kn: Kinetin; BAP: Benzylamine purine; *about 50%; **more than 50%.



Figures 1–5. 1. Freshly excised embryo; **2.** Friable callus; **3.** Multiple shoot buds; **4.** Separated shoot on rooting medium (0.1 mg/l NAA); **5.** Four-week-old fully developed plantlet in pot.

containing NAA 1 mg/l and IAA 1 mg/l accompanied by callus formation. A characteristic difference between two auxins was that on NAA medium roots were thick, short and brown in colour, while on IAA, they were thin, very long, without laterals and white in colour. Shoot buds were occasionally observed on MS media containing BAP 1 mg/l and Kn 1 mg/l. Numerous (10–15) shoot buds (figure 3) were produced all over the embryo accompanied by callus formation on MS plus IAA 0.5 mg/l plus BAP 1 mg/l. The shoots were separated and transferred to a medium containing NAA 0.1 mg/l for root formation (figure 4). Complete plants were nurtured on vermiculite with mineral water in pots (figure 5).

Direct regeneration from embryos is advantageous in egg plant because there is genetic stability in the plants formed which is an essential feature for clonal multiplication.

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