



***In vitro* approach for callus induction in kheemp [*Leptadenia pyrotechnica* (Forssk.) Decne] : A multipurpose plant**

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Abstract : *Leptadenia pyrotechnica* (Forssk.) Decne belongs to the family Asclepiadaceae. It is commonly known as Kheemp in India. *L. pyrotechnica* is an important component of an arid ecosystem and source of fibre, forage, and medicines. In this present investigation, an efficient method has been developed for a rapid callus induction in *Leptadenia pyrotechnica*. After surface sterilization on MS medium supplemented with cytokinins and auxins (PGRs) individually and with various combinations, nodal, pod and inter-nodal explants from mature plant of *L. pyrotechnica* were cultured. Cultures were maintained at $30 \pm 2^\circ\text{C}$ temperature, $50\text{--}60 \mu\text{mol m}^{-2} \text{s}^{-1}$ SFP, 16 hr day^{-1} photoperiod, and 62 per cent relative humidity (RH). Nodal segments proved the best explants (95% callus induction) compared with inter-nodal and pod explants had 11 per cent and 5 per cent callus induction, respectively. Different treatments were employed for surface sterilization of explants revealing that combination of sodium hypochlorite (NaOCl_2) and mercuric chloride (MC) were found significant. Minimum contamination (9%) occurred at 30 per cent NaOCl_2 + 2 g/L MC, while 85 per cent occurred at 30 per cent NaOCl_2 + 1 g/L MC. The nodal segments cultured on MS medium supplemented with 0.5 mg/L NAA that produced maximum callus (95%) within four weeks. It was followed by 65 per cent callus induction at 5 mg/L NAA + 2.5 mg/L benzyl-adenine (BA) and 25 per cent at 10 mg/L 2,4-D + 3 mg/L 2ip + 3 g/L activated charcoal (AC), while only 15 per cent appeared at control (without hormone application). This study may contribute in conservation management of this native plant species found especially in the Thar desert of Rajasthan.

Key Words : *Leptadenia pyrotechnica*, Arid environment, Cytokinins, Auxins, *In vitro*, Callus induction

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