

4:30–4:45 pm

Effect of Explant Type and Plant Growth Regulators on the Micropropagation of *Echinacea purpurea* L.

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Echinacea purpurea L. is an indigenous plant of North America and occupies an important place among medicinal plants due to its immunostimulant properties. The increasing demand of high quality plant material has necessitated its true to type, disease-free propagation through tissue culture. Different types of explants and plant growth regulators effect the in vitro regeneration of *Echinacea purpurea* L. In vitro regeneration potential of different types of explants in different types of plant growth substances was investigated in this study. Leaf discs, adventitious root segments and petiole segments were compared for their morphogenic potential in different concentrations and combinations of plant growth regulators. Seeds of *Echinacea purpurea* were grown in magenta boxes containing MS medium under controlled conditions. Explants were excised and cultured under aseptic conditions onto nutritional medium containing Murashige and Skoog (MS) salts and B5 vitamins mix with combinations of 1.0–5 μ M BAP, 1.0–5.0 μ M IBA and 0.1–1.0 μ M TDZ. The cultures were kept in growth cabinet with cool white light (40–60 $\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$) under 16-h photoperiod. Regeneration was quantified at 28 days based on the degree of callogenesis, organogenesis, and somatic embryogenesis. Root segment explants found to be more efficient for their morphogenic ability followed by leaf and petiole explants. Whereas maximum callogenesis was achieved in petiole explant followed by root and leaf explants. An interaction was found between the PGR and explant types. These investigations will aid in the development of a model system for clonal mass propagation and *in vitro* regeneration of *Echinacea purpurea* L.

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4:45–5:00 pm

In Vitro Regeneration of *Lilium henryi* Baker and Assessment of Genetic Stability in Micropropagated Plants using RAPD and ISSR Techniques

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Lilium henryi Baker is a native lily from mountainous regions of central China and has great potential as an ornamental plant for its long-lasting orange flowers and recurved petals. The plant is much more tolerant to lime soil than most *Lilium* species. To effectively conserve and utilize this plant for our future breeding, an efficient micropropagation protocol was established. Explants from bulb scales were disinfected using ethanol/ mercuric chloride and cultured on MS medium with different exogenous plant growth regulators (BA, TDZ and NAA). The better results, multiplication rate of 15 shoots per explants, were obtained in the medium containing 0.5 and 2 mg/L NAA and BA. To detect somaclonal variation among the donor plant and micropropagated plants, random amplified polymorphic DNA (RAPD) markers and inter simple sequence repeat (ISSR) markers were conducted. A total of 35 RAPD primers were used to amplify clones and the donor plant, which yielded zero polymorphic band among 247 scorable bands. Analysis of ISSR using 30 primers produced very lower genetic variations. Only 5 polymorphic bands were generated, which resulted to 1.1% polymorphism. The low percentage of genetic variations indicated that the genetic stability of tissue culture plants for *L. henryi* and the feasibility of this tissue culture system. Dr. Qixiang Zhang is the corresponding author.

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5:00–5:15 pm

Regeneration of Pear (*Pyrus communis* L.) from Shoot Tip and Nodal Cultures

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In vitro regeneration is a potential tool used for the preservation of superior germplasm and breeding of fruit species. Nodal segments and shoot tips were cultured in different concentrations and combinations of plant growth regulators (PGR) to evaluate the in vitro regeneration potential of pear (*Pyrus communis* L.) cv. Nashpati. Murashige and Skoog (MS) medium was used as basal medium combined with different concentrations and