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In vitro regeneration of purple coneflower (*Echinacea purpurea* L.)

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Purple coneflower (*Echinacea purpurea* L; Asteraceae) is one of the most popular medicinal herbs. Recently, because epidemic diseases caused by viruses have become much more threatening, global demand for products of purple coneflower has increased.

Explants of leaf, root and petiole were taken from *in vitro* grown plants and their regeneration ability was compared by culturing these explants on media with various supplements. An experiment was arranged according to the Complete Randomized Design (CRD) with five replicates. Statistical analysis was carried out using the Student Newman-Kuells means separation test of SAS program (9.1.3).

The regeneration ability in root and petiole explants was higher compared to leaf explants, and a combination of 0.3 mg/l benzyladenine (BA) with 0.01 mg/l naphthalene acetic acid (NAA) in Murashige and Skoog (MS) basal medium was the most effective, yielding 100% shoot regeneration frequency and associated with the highest number of shoots, 1.84 per explant. All explants from two and a half months old plantlets produced buds in high frequency; 1143.9 buds were regenerated from 1 g explants. With the established regeneration culture system, it was estimated that a large number (1124864) of buds could be obtained within a one year period, from one mother plant. Initiation of roots from the regenerated shoots and growth of the plantlets was observed on MS medium with 0.01 mg/l NAA.

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