

In vitro* Organogenesis and Alkaloid Accumulation in *Datura innoxia

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The kinetics of tropane alkaloids accumulation in different organs such as roots, leaves, stems, flowers and seeds of *Datura innoxia* was investigated by GC-MS. Twenty-six tropane alkaloids were detected. The ester derivatives of tropine (3 α -tigloyloxytropine and 3-tigloyloxy-6-hydroxytropine) are the major compounds. Undifferentiated callus were established from the stem explants of *Datura innoxia* using Murashige and Skoog (MS) medium supplied with 6-benzylaminopurine (BA, 1 mg l⁻¹) and indole-3-acetic acid (IAA, 0.5 mg l⁻¹) in combination for 6 weeks. Callus differentiation was initiated by subculture onto solid MS medium, free from hormones, for more than 10 months. Initially, shoots were formed after four weeks from subculture. Further subculturing in basal MS medium without growth regulators initiated the rooting of a shooty callus after 6 weeks. Investigation of the alkaloid content of the unorganized and organized callus revealed that callus (either green or brown) yielded only trace amounts of alkaloids. On the other hand, re-differentiated shoots contained mainly scopolamine while re-differentiated roots biosynthesized hyoscyamine as the main alkaloid.

Key words: *Datura innoxia*, *in vitro* Re-Differentiated Callus, Tropane Alkaloids