

**EFFECT OF ADENINE SULPHATE AND D- BIOTIN ON
IN VITRO SHOOT REGENERATION OF BITTER
GOURD (*Momordica charantia* L.)**



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ABSTRACT

The study was conducted under three experiments. First experiment was carried out to select the most responsive explant through callus stage to establish initial culture. Four different explants (cotyledon, Cotyledon node, leaf, hypocotyl) from *in vitro* grown seedlings were cultured on MS medium fortified with 1 mg l^{-1} BAP and 0.2 mg l^{-1} NAA. Cotyledon was the most responsive explant which exhibited quick callus initiation (11.3 days after culture), superior callus formation % (97.2%) and highest callus weight (0.657g).

Second experiment was conducted to determine the effect of various concentrations of Adenine Sulphate (AS) on callus induction and shoot regeneration of bitter melon. Cotyledon explants were cultured on modified MS medium supplemented with 1 mg l^{-1} BAP, 0.2 mg l^{-1} NAA and also different concentrations (0, 20, 40 and 60 mg l^{-1}) of AS. The best medium for callus formation was from modified MS medium supplemented with 1 mg l^{-1} BAP, 0.2 mg l^{-1} NAA and 60 mg l^{-1} AS. Callus derived from such medium was showed best positive response for shoot regeneration after subcultured on MS medium contained 2 mg l^{-1} BAP and 0.2 mg l^{-1} NAA. Regenerated shoots were multiplied on MS medium supplemented with 3 mg l^{-1} BAP. Eventually *in vitro* rooting was achieved on MS medium included 1 mg l^{-1} IBA.

Further experiment was carried out to study the effect of D- biotin on cotyledon explant. Cotyledons were cultured on MS medium fortified with growth regulators (BAP and NAA) alone and in combination with D- biotin. It was obvious that D- biotin introduced into the composition of the culture medium has a beneficial effect on the callogenesis, in association with BAP and NAA. Specifically 2 mg l^{-1} BAP, 0.2 mg l^{-1} NAA and 1 mg l^{-1} D- biotin, obtained high callus weight (1.856 g) and quick callus

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