

Effect of plant growth regulators and explant types on regeneration and micropropagation of a commercial strawberry cultivar (*Fragaria × ananassa* cv. Selva)

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Abstract

Strawberry (*Fragaria × ananassa* L.) is an important horticultural product that is highly acceptable because of its desirable taste, flavor, mineral elements, vitamins and secondary metabolites. Conventionally, strawberries are vegetatively propagated by runners arising from axillary buds on the plant crown. Plant propagation through runner produces a limited number of propagules. In the view of mass propagation and transformation, it is highly desirable to optimize methods of rapid, efficient and large scale multiplication of *Fragaria X ananassa* Duch. through tissue culture. In present study, developing an effective protocol for regeneration of strawberry cv. Selva, different explants (leaf disk, shoot tips and hypocotyls) and media modifications were examined. The best response towards shoot induction was observed on shoot tip explants cultured on MS medium supplemented with 2 mg/l of BAP and IAA. Direct shoots emerged from hypocotyls grown on MS medium supplemented by 2,4-D, BAP and TDZ at 0.01, 0.1 and 1 mg/l respectively. Indirect shoot regeneration was produced from hypocotyls on MS medium containing 2 mg/l of BAP. Using activated charcoal enhanced explants proliferation on culture media due to decreasing the toxic metabolites, phenolic exudation and adsorption of inhibitory compounds.

Keywords: Tissue culture; Shoot tip; Hypocotyl; Callus; Activated charcoal.

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