

Abstract.

Morphogenesis of different explant types of 6-7 weeks old *Solanum melongena* L. variety Padagoda was evaluated in response to different combinations of IAA and BAP in basal MS medium. Leaves and stem pieces (hypocotyls) were found to be more responsive to hormone combination of 2 mg/L IAA with 1 mg/L BAP contained MS medium for callus induction.

Calli derived from stem pieces regenerated shoots in the same regeneration medium while no shoot regeneration was achieved calli derived from leaf explants cultured in all four types of hormone combinations, but root regeneration was observed only calli derived from leaf explants cultured on regeneration medium containing 1mg/L BAP only.

Best shoot regeneration was obtained in media contained IAA in the presence of BAP with the combination of 2 mg/L IAA with 1 mg/L BAP and 1 gm/L IAA with 1mg/L BAP. Direct shoot regeneration was achieved in media containing high concentration of IAA where MS medium consists of 1 mg/L IAA only and MS medium consists of 2 mg/L IAA with 1 mg/L BAP.

An independent method of producing transgenic local eggplant (*Solanum melongena* L) variety Padagoda was carried out by Agrobacterium mediated transformation. 6-7 weeks old leaf and stem pieces were co-cultivated with *Agrobacterium tumefaciens* strain GV 1301 harboring the binary vector pCAMBIA 1305.1 carrying a modified Bt gene construct *cry* 1C encoding a lepidopteron insect-specific Cry 1C toxin under the control of ST-LS1 promoter and NOS terminator. This vector consists of reporter gene β -glucuronidase (GUSPlus) and the marker gene neomycin phosphotransferase (NPTII). Co-cultivated explants were introduced into callus induction medium containing 2 mg/l IAA with 1 mg/L BAP and 250 mg/L cefotaxime. Callus induced explants (stem pieces) were transferred into selection medium containing 2 mg/L IAA with 1 mg/L BAP supplemented with 50 mg/L kanamycin. 33 kanamycin resistance explants (stem pieces) out of 79 were obtained with 19 calli including 4 green calli.