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High frequency callus initiation, somatic embryogenesis and plantlet regeneration in *Carica papaya* L. cv. COORG HONEYDEW

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Two month old stem explants of *Carica papaya* L. cv. Coorg Honeydew showed 80 per cent callus initiation on Murashige-Skoog (MS) nutrient medium supplemented with 3.0 µM of 2,4-dichloro phenoxyacetic acid (2,4-D). Treatment with phytohormones like Kinetin (Kin) or Benzyl adenine (BA) (@ 0.2 to 2.0 mg l^{-1}) were found to have no role with regard to callus initiation. However, these initiating calli when subcultured on MS + 2,4-D (3.0 µM) + Kin (0.5 mg l^{-1}) showed a two-fold growth by proliferation within 21 days after the date of sub-culture. During this period, 30 per cent of the callus tissue underwent necrosis. Thereafter, the best of 70 per cent friable, healthy calli were recultured on MS + 2,4-D (3.0 µM) + Napthalene acetic acid (NAA, 2.0 mg l^{-1}) + Kin (0.5 mg l^{-1}), also supplemented with casein (50 mg l^{-1}). This combination for reculture resulted in vigorous callus growth on fresh weight basis. Best somatic ernbryogenesis was achieved when callus tissue so obtained was further recultured in MS + NAA (1.0 mg l^{-1}) + Kin (0.5 mg l^{-1}) + Gibberelic acid (GA_3 1.0 mg l^{-1}) + L- Ascorbic and (Asc, 50 mg l^{-1}) alongwith glycine (1.0 mg l^{-1}) + thiamine (Thia, 1.0 mg l^{-1}) as adjuvants. The pH of such culture media was maintained at 5.7, incubated under a 16/8-hr light/dark cycle at 25°±1°C in the culture room. This protocol resulted in 80 per cent somatic embryogenesis out of which about 20 per cent yielded regenerants. The plantlets were carefully transferred to half-strength MS medium for further growth and hardening.

Key words: *Carica papaya* callus, Somatic embryogenesis, Regeneration, Tissue culture.